III. In regard to the equation $V = FTg/W$ which has been proposed by Mr. Kent in SCIENCE for March 19, 1915, my feeling agrees with that already expressed by Professor Hoskins in SCIENCE for May 7, 1915, namely, that no equation which covers only the special case of a body starting from rest, under a constant force, and does not involve the idea of mental equation of mechanics. Mr. Kent's paper, however, is not without interest on the pedagogical side.

IV. Finally, in regard to the objections raised by Professor Hoskins to a certain definition of the term "force of gravity" which I gave some years ago (objections which, it should be observed, do not affect the present question as to the choice of the fundamental equation of mechanics), I wish to say that his criticism seems to me well-founded, and that my definition was not happily phrased. The important facts about W and g remain true, however, as follows: If we define the weight, W, of a body, in a given locality, with respect to any given frame of reference, as the force required to support the body at rest with respect to that frame; and if we denote by g the acceleration of the body when allowed to fall freely in the given locality, as measured by an observer on the given frame of reference; then the ratio W/g will always be the correct expression for the mass or inertia of the body, regardless of any motion which the given frame of reference may possess. I hope to revert to this point on some future occasion.

EDWARD V. HUNTINGTON
HARVARD UNIVERSITY

THE PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES

TO THE EDITOR OF SCIENCE: Please be so kind as to print in SCIENCE the following letter which I have addressed, under date of June 17, 1915, to Dr. Arthur L. Day, home secretary of the National Academy of Sciences, Washington, D. C.:

Replying to your request to subscribe to the *Proceedings of the National Academy,* may I voice a protest which I believe many scientific men share with me, but which few will care to formulate and send to you.

A general scientific society, before which abstruse papers are read on most minute details of specialized scientific work, is an anachronism of the most glaring kind. Certainly, when a large audience endures patiently the reading and discussion of a paper which is entirely beyond the ken and comprehension of nine tenths of them, they are wasting their valuable time, and the whole procedure smacks of the farcical.

Further, when you publish such a miscellany of highly specialized papers in your *Proceedings,* is it fair to any man on earth to ask him to pay for the whole set of papers in order to get the one or two which he can read understandingly and profitably? You surely can not expect a man of understanding to risk acute mental indigestion by trying to assimilate the specialized articles entirely outside of his ability to absorb. Then why should any individual be expected to pay good money for so much material useless to him? Are you not guilty of wasting much good ink and paper, postage and shelf space—a waste which the apostles of true conservation should deplore and discourage?

Still further, modern efficiency in almost all its various shapes is based on pushing as far and as hard as possible in the contrary direction. Concentration of mind and effort towards one goal, elimination of the unnecessary and the distracting, doing one thing mighty well—are the principles of specialization which are at the basis of modern efficiency and achievement. But your society and its *Proceedings* tend towards diffuseness, cumber our minds and steal away our attention with the unnecessary and superfluous, and rob the special societies of papers and discussion which they alone are well fitted to receive and digest. In short, are you not a stumbling block before the wheels of scientific progress, a panderer to scientific charlatanism, rather than a promoter of scientific efficiency?

Let me in all seriousness recommend the abandonment of publication of your *Proceedings,* if not even the cancelling of your scientific sessions. Let the astronomers discuss "Photographic Determination of Stellar Parallaxes" with astronomers, the chemists "Chondrosamine" with organic chemists, the mathematicians "The Straight Lines on Modular Cubic Surfaces" with mathematicians, the zoologists "Ecology of the Murray Island Coral Reef" with zoologists, etc.—for only such special groups

of scientists can properly receive, understand and discuss such highly-specialized topics.

I am perfectly convinced, Mr. Secretary, that your complacent Pan-scientists would reject the recommendation *in parte et in toto*, but thinking men outside will agree that they should accept it, and be thankful!

Jos. W. Richards

SCIENTIFIC BOOKS

Heredity and Environment in the Development of Men. By E. G. Conklin. Princeton University Press, 1915. Pp. xiv + 533, illustrated.

This book is based on a course of public lectures designed to present in non-technical terms a judicial view of eugenics as seen by a trained biologist. The author is particularly well qualified to undertake the task because of the breadth and depth of his biological knowledge, his own important contributions to several of the fields surveyed, his sound and well-balanced judgment, and his preeminent success as a teacher. He has succeeded remarkably well in a very difficult undertaking. For the lay reader can not fail to be interested in the wonderful array of post-Darwinian achievements in biology which are here marshalled in such a clear way; and the biologist familiar with the detailed discoveries to which mere reference is made by way of evidence or illustration, will profit much by the survey of a whole field in well-balanced perspective. The general reader, who gets from current literature quite contradictory and often distorted views as to the undertakings and the possibilities of the eugenics movement, will here find a correct and sane inventory of both.

The book is divided into six chapters, which deal with the following subjects:

I. Facts and factors of development. II. Cellular basis of heredity and development. III. Phenomena of inheritance. IV. Influence of environment. V. Control of heredity: Eugenics. VI. Genetics and ethics.

The conclusions reached in Chapter I. are concisely summed up thus: ". . . that every living thing in the world has come into existence by a process of development; that the entire human personality, mind as well as body, has thus arisen; and that the factors of development may be classified as intrinsic in the organization of the germ cells, and extrinsic as represented in environmental forces and conditions. The intrinsic factors are those which are commonly called heredity, and they direct and guide development in the main; the extrinsic or environmental factors furnish the conditions in which development takes place and modify, more or less, its course."

In dealing with the "cellular basis of heredity and development" (Chap. II.) the author is most at home, for this is the field of his own special investigations. He emphasizes the conclusions that the germ-cells are the exclusive basis of inheritance and probably of sex determination and that their structure is "almost incredibly complex."

In dealing with the "phenomena of inheritance" (Chap. III.) the author presents a careful digest of present-day and orthodox Mendelism, including the pure-line theory and the consequent ineffectiveness of selection, the theory that all inheritance is due to recombination of Mendelian factors, even when blending results are obtained, and that Mendelian factors are devoid of variability. The presentation is a remarkably lucid one, but one suspects that, had the author been as familiar with the phenomena of inheritance as with their cellular basis, he would not have been content to explain the former as relatively simple and clear-cut while declaring the latter "almost inconceivably complex." There is no ground for thinking inheritance phenomena less complex than their cellular basis, for which reason theories which call for "pure gametes" and "pure lines" are likely to be short lived.

Chapter IV. presents some of the more striking results from the experimental study of development.

Chapter V. contains the familiar argument for eugenics (human reproduction controlled with a view to biological improvement of the race), viz., the differentially declining birth-rate, involving the more rapid increase of the poorer strains of humanity, with the recommendation that reproduction of the socially unfit be limited and that of the socially supe-