

ternational Association of Academies, and, it should be added, largely due to the initiative of Professor Waldeyer, for the establishment in various countries, of special institutes for the furtherance of research in embryology and neurology.

These two subjects were first selected owing to the peculiar difficulties of obtaining the needed material, and the great labor necessary to prepare the complete series of sections which are required in many cases. These conditions make it imperative that if we would avoid large loss of labor and much vexation of spirit, the work in these lines should be coordinated, standards adopted and the material of the laboratory, like the books of a library or the specimens in a museum, be available for the use of other investigators. Nothing, I believe, is further from the minds of those engaged in this plan than an attempt to produce anatomical results on a manufacturing scale. But the questions calling for solution in the fields here designated are so numerous, that such an arrangement will merely mean a subdivision of labor in which each institute will take one of the larger problems and direct its main energies to the study of this, so conducting the work that it shall be correlated with that in progress elsewhere. The director of such an institute will be justified in extending his work through assistants just as far as he can carry the details of the different researches in progress, and thus knit them into one piece for the education of himself and his colleagues. When we pass beyond this limit, admittedly subject to wide individual variation, there is little to be gained, but the evils of excessive production, should they arise, carry within themselves the means of their own correction.

This step, which is assuredly about to be taken, should enable us in the future to do things in anatomy not heretofore pos-

sible, and when, some years hence, there is another gathering of scientific men, with an aim and purpose similar to that of the present one, it is easy to predict that we shall be able to listen to a report on the important advances in anatomy arising from coordinated and cooperative work.

HENRY H. DONALDSON.

UNIVERSITY OF CHICAGO.

SCIENTIFIC BOOKS.

Ideals of Science and Faith. Essays by Various Authors. Edited by the REV. J. E. HAND, editor of 'Good Citizenship.' New York, Longmans, Green & Co. 1904.

Were this book not remarkable in itself, its motive would render it remarkable in any case. We readers of SCIENCE devoted, most of us, to absorbing technical subjects, may well peruse it to our great advantage, and realize a few tendencies of the day, unfamiliar to us maybe, and assuredly not clear in their main outlines.

The plan of the work is novel, even daring, and conjures up piquant expectancy. It consists of ten essays, each from a different hand, and divided into two groups. The first group, of six, under the general title 'Approaches through Science and Education,' deals with the possible contemporary relations between science and religion (relations of an irenical nature) from the standpoint of the lay expert. The subjects, and the authors who speak for them, are as follows: 'Physics,' Sir Oliver Lodge; 'Biology,' Professor Arthur Thomson, of Aberdeen University; 'Psychology,' Professor Muirhead, of the University of Birmingham; 'Sociology,' Mr. Victor V. Branford, secretary of the Sociological Society of London; 'Ethics,' the Hon. Bertrand Russell, fellow of Trinity, Cambridge; 'General and Technical Education,' Professor Patrick Geddes, University Hall, Edinburgh. The second group, of four essays, entitled 'Approaches through Faith,' presents the clerical standpoint in its various phases as follows: 'A Presbyterian Approach,' the Rev. John Kelman, of Edinburgh; 'A Church of England Approach,' the Rev. Ronald Bayne; the Rev.

P. N. Waggett contributes an essay entitled 'The Church as Seen from the Outside,' in which he concludes by stating the High Anglican, as opposed to the so-called Erastian, view; while, very fittingly, Mr. Wilfred Ward speaks for the Church of Rome. The editor furnishes a worthy introduction.

Obviously, in such a collection, comparisons were odious. But it may be of interest to state that the freshest essay comes from the newest science—sociology—and that it is supplemented by Professor Geddes' paper, which represents the same general outlook. The most striking contribution is that of the Hon. Bertrand Russell, who drives home the problem under review, nothing extenuating in the logical consequences of modern scientific research. One may add, further, that, for American readers, the book can not fail to possess additional suggestiveness because written under British influences. In other words, when more of our scientific men find it possible to write like Sir Oliver Lodge, Professor Arthur Thomson and the Hon. Bertrand Russell, and when more of our religious mentors can speak like the Rev. John Kelman and the Rev. Philip Napier Waggett, we shall be in far better position to 'get together' for the discussion of subjects now agitated or about to be agitated. To render my meaning plainer; I fear that an American botanist, speaking of his Presbyterian brethren, would scarcely find warrant for such a pronouncement as this: "So changing are the times that there seems nowadays to be more independent and speculative thinking among the aspirants to the Scottish ministry, once so strict, than among those of the university faculties of medicine, once and again so comparatively free; at any rate, since Robertson Smith, there has probably been less general ignorance of the results, and even of the methods of scientific research among the students of the older faculty than of the more modern one" (p. 185). Undoubtedly, conditions obtain in the old country that we do not enjoy, for there the *university* attitude, in contradistinction to that of the usual *theological seminary*, exercises much more potent sway over candidates for the ministry.

Hence, perhaps, the possibility of such a book as this.

No doubt the work is tentative, not conclusive. No doubt one of the ecclesiastical contributors alludes darkly to a possible double truth—one for science, another for religion, and a second openly adopts this doctrine, which really evades the entire question at issue. But, even so, the collection remains notable and, as I indicated at the outset, has everything to recommend it to reflective men, no matter on which side of the fence their main presuppositions happen to lie. Moreover, the brilliant criticisms of educational formalism, supplied by Mr. Branford and Professor Geddes, can not fail to set us thinking with reference to some of our own potent, if intangible, academic problems.

R. M. WENLEY.

UNIVERSITY OF MICHIGAN.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *Plant World*, the official organ of the Wild Flower Preservation Society of America, now in its seventh volume, will, on January 1, come under the editorial management of Professor Francis E. Lloyd, head of the department of biology in Teachers College.

The *Journal of Comparative Neurology and Psychology*, for November, has as the leading article a paper of seventy pages entitled, 'The Behavior of *Paramecium*: Additional Features and General Relations,' by H. S. Jennings. On the basis of a summary of previous work on *Paramecium*, experimentally controlled, and a large body of new observations the reactions of this type are critically analyzed and its 'action system' formulated. The discussion of the nature of stimulation and of the reactions of *Paramecium* in detail gives further support to the author's claim that the current theories of tropism need radical revision. The number further contains an editorial by Dr. Yerkes on 'Physiology and Psychology' and a biographical sketch, with portrait and bibliography, of the founder of the journal and late editor-in-chief, Dr. C. L. Herrick.