thallophytes, accepted as a single primary division or sub-kingdom, while the undoubtedly homogeneous group of embryophytes—the Archegoniates and seed-plants—is split into three sub-kingdoms, each presumably coordinate with the whole aggregation of thallophytes, makes one wonder by what process of reasoning the authors have perpetuated such an unscientific and outgrown system of classification.

It is generally agreed that comparative morphology, and especially the structure of the reproductive parts, is the safest clue to relationships upon which a scientific classification must rest. In the book referred to[2] the following passage occurs: "This group (Anthocerotales) has always been of particular interest. . . . as suggesting a possible connection between bryophytes and those higher plants (pteridophytes) in which the sporophyte is an independent individual." But a few pages further on (p. 325), the astonishing statement is made, "In passing from the bryophytes to the pteridophytes . . . we cross the widest gap which exists in the continuity of the plant-kingdom!"

How is the student to reconcile such an obvious contradiction, and how is the instructor to justify a system which teaches that a bacterium and a giant kelp are more closely related than a liverwort and a fern, although the two latter agree in the minute details of the essential structures of both their sexual and non-sexual reproduction? Either comparative morphology has no meaning, or the divorce of the two divisions of the archegoniates is absolutely unwarranted.

It would be very gratifying if some of the defenders of this, to the writer quite incomprehensible, view would explain *in detail* the reasons for the faith that is in them.

STANFORD UNIVERSITY
DOUGLAS HOUGHTON CAMPBELL

## CATALOGUE OF PUBLISHED BIBLIOGRAPHIES IN GEOLOGY 1896–1920[1]

THE publication of this noteworthy catalogue of bibliographies as No. 36 of the bulletins of the National Research Council is a further extension of the council's efforts to supply bibliographic assistance to the research workers of the country. Previous bulletins have contained similar lists covering periodical bibliographies and abstracts, and the present issue is the first devoted to a single subject. Like the earlier publication the present volume is not a bibliography of geology, but simply a catalogue of published geological bibliographies. The project was undertaken for the Research Information Service and the Division of Geology and Geography, National Research Council, and it is hoped that the council is planning to issue similar catalogues for the other sciences.

The catalogue which Professor Mathews has prepared is practically a continuation of DeMargerie's classic *Catalogue des Bibliographies Géologiques,* issued under the auspices of the International Geological Congress in 1896, containing references to 1895. The present work covers the succeeding 25 year period and embraces 3,699 titles arranged alphabetically by subject. These are divided into three groups or categories, general, special and personal. The first group is made up of a list which deals with publications of interest to geologists, but no attempt has been made to include such works as "Révue Bibliographique Universelle," "Reader's Guide to Periodical Literature," and other bibliographical aids, well known to the librarians and bibliographers. In the second group, only one master entry with cross references has been made, and its choice has been determined by the major interest underlying the compilation of the bibliography. The motive has been to place the major entry where it would most probably be sought, and the cross references where they might be serviceable. The third group includes "Personal Bibliographies" and "Necrologies," with attached bibliographies of geologists, mineralogists and paleontologists. The format of the references, while lacking many details dear to the librarian, contains all that is essential to lead the research worker to the available material.

Although the catalogue may prove incomplete as an exhaustive list of foreign bibliographies, it seems to include practically everything dealing with American geological literature available to American geologists. It should save both time and possible oversight of existing information for those in geological research. The National Research Council is to be commended for undertaking the program of preparing such helps for the research worker and also the compiler with his collaborator, Miss Grace E. Reed, for the thorough manner in which they have covered the literature scattered through a thousand serials.

JAMES H. HANCE
URBANA, ILLINOIS

## THE NET ENERGY CONCEPTION

IN SCIENCE for April 18, 1924, Dr. E. B. Forbes quotes a paper read by him at a recent meeting of the American Society of Animal Production and a resolution passed unanimously by that society. The present writer dissents from a good deal that is con-

[2] Page 319.

[1] Compiled by Edward B. Mathews, National Research Council, Washington, 1923, 228 pages. Price, $2.50.