

views on political issues. No doubt many professors were unmoved by the investigations of subversion, either because they sympathized with them or because they could not imagine themselves being affected by them; other professors were threatened and drew back in the face of threat; others, including what would appear to be a substantial majority of the more distinguished members of the profession, perceived the threat clearly enough and were disturbed by it but did not yield to it. It would be regrettable indeed if this final fact were lost in the concentration which this book gives to its documentation of weakness and retreat on the campus.

To those readers of *Science* who may have come to believe that social scientists have difficulty in writing comprehensively, I am pleased to recommend this book as a model of straightforward, unpretentious exposition. The authors present a rather considerable array of statistical data, but, partly through the effective use of graphic representation, they succeed in maintaining the readability of the text. I should also urge that the reader not skip over the long postscript contributed by David Riesman, analyzing the problems of interviewing college professors. His description of the consequences of confronting "avant-garde" or "rear-guard" professors with "blue-stockings" or "market research" interviewers is both instructive and amusing.

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Embryos and Ancestors. Gavin de Beer. Clarendon Press, Oxford, England, ed. 3, 1958 (order from Oxford University Press, New York). xii + 197 pp. \$4.

In 1939 Gavin de Beer published *Embryology and Evolution*, attempting to show, as he puts it, that "after rejecting the theory of recapitulation, a much better synthesis could be made of our knowledge of embryonic development and evolutionary descent, opening up new fields for observation and co-ordination of studies in embryology, genetics and evolution." In 1940 he produced an expanded and altered version of a similar argument in the first edition of *Embryos and Ancestors*. This appeared in a revised edition in 1951, and the volume under review here represents the third edition. None of the previous versions or editions has been reviewed in *Science* or was reviewed in the *Scientific Monthly* (a fact interesting and probably significant in itself). Nevertheless, since early

editions of the book have been so widely read, it seems more appropriate in this review to compare the present edition with its predecessor than to discuss it as a completely new contribution to knowledge.

The third edition is a thoroughgoing revision of the second; the whole text has been reset. The main organization of the book is much the same, although some passages have been shifted in position and the chapter on the evolution of the coelenterates, which occupied two pages in the second edition, has been eliminated as a separate chapter, its content having been incorporated into the chapter on the germ layers. Clarifications and minor changes of content and of references are liberally scattered throughout the whole text, and in a number of cases actual interpretations are modified. The author, for instance, goes to great lengths in both the second and third editions to distinguish between neoteny and paedogenesis, yet one generalization specified as concerning neoteny in the second edition is referred to as paedogenesis in the third. One of the general conclusions in the second edition reads: "Phylogeny plays no causal part in determining ontogeny except in so far as past external factors have been responsible for exerting selection and preserving those internal factors which are operative in the ontogeny of the descendants." In the new edition this is shortened simply to "phylogeny plays no causal part in determining ontogeny." De Beer has also introduced some new terminology, designating as *neanic* novel evolutionary characters which have made their appearance early in ontogeny and as *ephebic* those which have appeared at later stages in the life history of the individual. The principal change in the new edition is one of size. While the actual text (minus bibliography and index) of the second edition occupies 142 pages, that of the third fills 174 pages. The bibliography is increased from more than 270 references to over 350. One new illustration has been added, and one new table, both from the work of A. H. Schultz.

The material added in the latest edition includes amplification of what was said, in the earlier editions, of the positions of the classical authors of the 19th century, and also the exposition and discussion of new data, some of which became available only after the appearance of the preceding edition. In some cases, in the text and in one table, examples are multiplied—in particular, more evidence is drawn from the plant kingdom than in the previous edition. Where new evidence is brought in, it is drawn principally from the same fields as in earlier editions—from the study of morphogenesis, taxonomy, natural history, evolution. Since so much of the argument hinges on

the time of action of genes, it is a great pity that no reference is made to von Ubisch's success with androgenetic merogony or to Briggs' success with nuclear transplantation. De Beer has failed, furthermore, to take up any of the modern studies on developmental genetics which are so apposite to his theme and thus has missed his opportunity to effect the synthesis between embryology, genetics, and evolution which he has stated to be his primary aim.

A number of embryologists now question whether attacks on the recapitulation theory are any longer necessary. Certainly a number of recent textbooks, while they may still describe the doctrine, refute it at the same time, and there seem to be increasingly fewer which labor it as tenable. Whether or not, however, belief in recapitulation is a present danger, de Beer's continuing attempts to bring together data from embryology and evolution are commendable, and the resulting books provide stimulating collateral reading for students.

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Pollen and Spore Morphology/Plant Taxonomy. Gymnospermae, Pteridophyta, Bryophyta. (*An Introduction to Palynology*, vol. 2). G. Erdtman, Ed. Almquist and Wiksell, Stockholm; Ronald, New York, 1957. 151 pp. Illus. \$8.

This volume is divided into three parts. The first and major portion is devoted to illustrations of pollen grains of 57 genera of gymnosperms and of spores of 113 genera of pteridophytes and 69 genera of bryophytes. The second section, by B. Afzelius (Gulveg), discusses new methods of studying the wall structure. The third part, by J. Eadwan Pragloiski, is on the preparation of ultra-thin sections.

The pollen and spore illustrations depict distinguishing characteristics of one or more species, either as entire palynograms or as sketches illustrating structural details of the exine or sclerine of similar species or genera. The text for these illustrations will be published as volume III of the series. This is the first comprehensive coverage of these categories on a world-wide basis. Figure 2 is especially helpful to beginning palynologists in that it shows lateral, distal, and proximal perspective sketches of the same grain. Fern spores have been illustrated previously by many authors, usually for local geographical areas, but this treatment brings into one place illustrations of genera that are found in widely separated floras. Very few authors have