I should like to suggest (i) that all scholars who know George Sarton's pioneering work will wish to acquire this convenient selection of some 23 of his important essays; (ii) that younger students of the history of science can learn much about their field—and about George Sarton—by carefully reading this volume; and (iii) that the time has come for qualified individuals who knew Sarton and who have access to both his published and unpublished writings to begin work on the aforementioned *Opera Omnia*. There is the George Sarton Memorial Foundation—an honor bestowed upon very few scholars—and this honor itself bespeaks the necessity for a full and accurate edition of his works—for George Sarton was the true "Father" of the History of Science in America.

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Liquid Electrical Insulation

Ions in Hydrocarbons. Andrew Gemant. Interscience (Wiley), New York, 1962. viii + 261 pp. Illus. $12.50.

According to the author's statement in the preface, this monograph represents an attempt to establish the electrochemistry of solutions in hydrocarbons. Both theoretical and experimental material is presented; emphasis is on experimental results, and especially on the author's work on the properties of model systems designed to reproduce some of the properties of insulating oils.

Insulating oils are an essential part of many cables, transformers, and capacitors; their efficiency as insulators is limited by their ionic conductivity. To date, the nature of the conducting species is not known, nor is their concentration or their origin. Gemant's carefully designed experiments represent a pioneering effort to understand the properties of these technically important materials. Where the monograph covers experimental results on model systems, the reader will find highly interesting and suggestive ideas. A number of analogies between synthetic and real systems have been found, but many differences persist. Gemant's frequent suggestions for further fundamental exploratory work constitute one of the valuable parts of the monograph.

The theoretical aspects of the presentation are not so satisfactory: errors, some serious, are made, and material is included which, in my opinion, is irrelevant. Some highly relevant material—such as the work of van der Minne, Garston, Sharbaugh, and others—is only mentioned in passing, or is omitted entirely. The treatment of the "hydrogen-silver" cell (pp. 29–30) is wrong, and implication that glass electrodes may be used to determine hydrogen ion concentrations in pure hydrocarbons is misleading. The corresponding experiments (chapter 6) were made on xylene containing ethanol (a proton acceptor); in pure hydrocarbons sulfonic acids are undissociated neutral molecules. The treatment of the carbonium ions of mechanistic organic chemistry may be cited as an example of irrelevant material; they are important in their own domain, of course, but it is unlikely that they can have much to do with electrical losses in real oils.

Despite these adverse criticisms, however, I recommend the book as a source of ideas to physical chemists who are seeking a new and interesting research field; as Gemant points out, the problems are difficult but intriguing and practical. Insulation engineers will find interesting analogs to some of their problems, and they may be encouraged to support more fundamental research in the electrochemistry of solutions in hydrocarbons.

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Vertebrate Paleontology

Problèmes Actuels de Paléontologie. Éditions du Centre National de la Recherche Scientifique, Paris, 1962. 475 pp. Illus. NF. 62.

Although it is called a colloquium and a symposium, this volume has no theme. It consists of 40 papers that were read at a meeting held in Paris during May and June 1961; the papers have no more in common than that most (even so, not all) of them deal with fossil vertebrates. Despite the title, concerted attention to general or theoretical problems of paleontology seems to have been consciously discouraged. The disparate contributions are all individually competent, and many are excellent. A quorum of European vertebrate paleontologists and two each from the Near East, Africa, and America reported on research they happened to have on hand at that time. Style and length vary from preliminary abstracts to finished technical papers. Subjects range from description of an anatomical detail to discussion of the basic evolution of a class and from agnaths to man.

It is impractical and would be of little general interest to review, or even to list, the individual papers. It must suffice to call the attention of vertebrate paleontologists to a publication in which each is likely to find a technical contribution near his own specialty. All papers, even those presented in English at the meeting, are published in French. The printing and paper are good, but the binding is execrable.

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Experimental Pathology

International Review of Experimental Pathology. vol. 1. G. W. Richter and M. A. Epstein, Eds. Academic Press, New York, 1962. x + 453 pp. Illus. $15.

This new serial publication is designed to provide "timely reviews on important problems of experimental pathology in its widest sense . . . reviews relating to the etiology, pathogenesis, and effects of diseases." The editorial board is composed of distinguished scientists from England, Sweden, Australia, Belgium, and the United States.

This first volume covers a variety of topics which are of both theoretical and practical interest. G. J. V. Nossal critically reviews the genetic control of lymphopoiesis, plasma cell formation, and antibody formation and concentrates on the antibody forming system. In "Arteriolar hyalinosis," by Pierre Dustin, Jr., historical considerations are emphasized rather heavily, but the current state of knowledge is well covered. Sergio A. Bencosme and B. J. Bergman describe the ultrastructure of human and experimental glomerular lesions. Perhaps in no other area has the electron microscope been