but also by the aid of other microbes, a precursory approach to treatment by antibiotics. Enthusiastically the author points to immunology, which Pasteur considered a natural law, and to Pasteur's dream of "chemical vaccines" which actually led to the birth of immunochemistry.

In his masterly translation of quotations, mainly from French sources, Dubos presents their meaning in harmony with the text. It is regrettable, however, that he neglects to document such information properly or to give a general bibliography. He might also have eliminated the unnecessary, repeated interruption of his narrative, had he given the whole biography of Pasteur in the opening chapter instead of scattering it throughout the text (see pages 34, 38-43, 63, 128-9, and 176-8). In this manner, the reader could have been acquainted with Pasteur the man, as an introduction to Pasteur the scientist.

Although the author does not explicitly mention that this volume was intended as a contribution to the history of science, its presentation of the development of biological sciences deserves great praise for filling a gap in the history of science.

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Thoracic Surgery Before the 20th Century. Lew A. Hochberg. Vantage Press, New York, 1960. 858 pp. Illus. $15.

Thoracic surgery came of age during the three decades encompassed by the First and Second World Wars, and it has undergone a phenomenal expansion in recent years. It is appropriate that a comprehensive history of thoracic surgery should be brought forward at this time. Such a survey, aside from its humanistic values, may serve as a guide for the future efforts of those laboring in this subdiscipline and as insurance against repetition of some past errors. Lew Hochberg has accepted this challenge at an opportune time, but as the title of his book suggests, in an incomplete fashion. Perhaps because of the enlarging scope of thoracic surgery, the rapidity of present changes, and a reluctance to sit in judgment on his contemporaries, the author has deliberately restricted himself, carrying this subject only through the closing years of the last century.

There are not many phases of thoracic surgery the evolution of which can be considered complete, or nearly complete, by 1900. The specialist in thoracic surgery, of course, can supply his own concluding chapters, but the lay reader or the occasional student of medical history may feel that he has been left dangling and that the final acts of a fascinating drama are still to be played out.

Hochberg treats the events of the medieval and Renaissance periods comprehensively in several well-written chapters. Beginning with the 1800's, however, he elects to approach the burgeoning material by individual subjects; for example, empyema, pulmonary suppuration, tuberculosis, diaphragmatic hernia, the mediastinum, the esophagus, and the heart and great vessels. Certain of these sections are more descriptive than interpretive. The writer uses freely the technique of lengthy direct quotations (with translation as necessary) from the original sources to lend, as he states, "authenticity to the present work and help correct some of the misquotations noted in the literature." His technique has accomplished these objectives, while yielding some insight into the hearts and minds of earlier surgeons as they sought new light to guide them on unfamiliar paths, and as they courageously made the trials that left them wide open to the criticisms and even abuse of their less enterprising and imaginative colleagues. But in so doing, Hochberg has been unavoidably repetitious, especially in the more than 80-page section on empyema. Whenever possible, however, he lightens this heavy fare with lively biographical sketches and entertaining vignettes of key personages.

Appended to the main text is a series of chapters, entitled "Nonsurgical contributions to the advancement of thoracic surgery." Those sections concerning percussion, auscultation, vital capacity (perhaps better titled "Estimation of pulmonary function"), and peroral endoscopy are excellent reading, among the best in the book. But in other chapters, antisepsis, anesthesia, and x-rays receive more cursory treatment, and of course these topics have implications beyond the scope of this work.

During the 20 or more years that the author has been delving into medical history he has turned up a great volume of important, and some new, material which will make his *Thoracic Surgery Before the 20th Century* a valuable source book for the serious student, as well as an easy reference work for the educator who illuminates his lectures and writings with appropriate historical notes. Time and again the reader is made aware that the first solution proposed for many surgical problems was an inspired and theoretically correct one, but finally rejected or forced to yield to necessary compromise or improvisation because of inadequacies in surgical technique, anesthesia, and supportive therapy. Those adjuncts are taken for granted in the present day and ensure almost routine success for modern surgeons, who may be less thoughtful and even less skillful than their sometimes frustrated predecessors.

Many of the 155 illustrations in this book are rare finds, and they deserve better reproduction than Vantage Press has managed to provide.

Hochberg's style of writing is simple, precise, and clear, attesting to the truth that the pursuit of medicine is still compatible with proficiency in the field of letters. The publication of his projected companion volume on the thoracic surgery of the present century will be eagerly awaited.

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Nuclear Photo-Disintegration. J. S. Levinger. Oxford University Press, New York, 1960. 144 pp. $2.

In this monograph J. S. Levinger summarizes all the available theoretical ideas about the nuclear photoeffect and relates them to the experimental results. Two outstanding chapters reflect the author's interest in sum rules and models. He begins by considering the fundamental interactions between photons and charges; the concept of oscillator strength is introduced, and sum rules are discussed and used to calculate the different moments of the charge distribution. These ideas are initially set forth for an atomic system, and then the proper modifications are made so that they become applicable to a nuclear system. Levinger emphasizes that the main features of the nuclear