The organs of the special senses have been considered in detail sufficient for a general treatise. An appendix descriptive of a few of the simpler technical methods of preservation, fixation, and staining of tissues ends the book. The paper, type, and binding are fully worthy of the most excellent text.

F. P. G.

A TREATISE ON CELLULAR TOXINS, OR THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE. By VICTOR C. VAUGHAN and FREDERICK G. NOVY. New (4th) edition, revised and enlarged. 8vo., 480 pages, with 6 illustrations. Philadelphia: Lea Brothers & Co.

No one who has an interest, practical or experimental, in the problems of scientific medicine can afford to pass by this most recent and comprehensive treatise. The field which the authors have chosen is a large one, covering, as it does, all the known toxic products produced by bacterial and animal cells, whether in a state of activity or after death.

The work is of chief value as presenting full, well grouped, and impartial summaries of the original investigations on each subject treated. The importance of a work such as this, which brings into so admirable an order researches undoubtedly interrelated, but confused to all but those especially conversant with the subject, can scarcely be overestimated.

That the conclusions drawn from the original sources are in many places incomplete is due to the unsettled nature of the problems.

The work may be divided conveniently into four different parts, which considered in turn are: first, toxins formed by bacteria; second, toxins (specific substances) present normally in the blood or found in the process of immunization; third, toxins from food substances formed before or after entrance into the animal body by the action of bacteria; and, fourth, methods of detecting ptomaines and leucomaines in foods. Bacteria produce toxins of two sorts—directly, they produce intracellular or extracellular toxins, and indirectly by their action on nitrogenous substances they produce ptomaines. In this connection have been considered the bacterial poisons of certain infectious diseases. On some of them, such as diphtheria, tetanus, and anthrax, we may consider ourselves relatively well informed. On others, such as tuberculosis and pneumonia, nothing very definite has been revealed to us. A consideration of the properties of the blood serum follows. The germicidal properties of the blood, precipitins, agglutinins, and lysins are taken up in turn, and in conclusion the theories of the immunity of Metchnikoff, Bordet Emmerich, and particularly of Ehrlich, are quoted and discussed.

Food-poisoning comprising poisoning by mussels, fish, meat, cheese, milk, and grain is considered in respect to epidemics and to general endemic diseases supposed to be dependent on the use of such improper food. An exhaustive chemical consideration of such bases as have been isolated from these ptomaines, and also of the leucomaine bases—that is, preformed bases of the proteids irrespective of the action of bacteria—follows.

F. P. G.