a little distance, a temperature of 60° F., to suit the needs of different cases." As Baltimore requires a hospital which would answer for the tropics or for Northern Russia, in addition to the above system of heating, it has been built with "double walls, with air spaces." Indeed it is difficult to imagine anything more perfect in the way of hospital construction. Provision is also made "for at least thirty students to reside constantly in the Hospital, and devote themselves under proper guidance to the study of disease and the practical care of the sick." In addition to all this, there is a pathological laboratory fitted for experimental research, a thoroughly equipped out-patient department, a training school for nurses, and a large and handsome building, separated from the others, in which the nurses are to reside. Dr. Billings says—"As regards construction, I do not hesitate to affirm that these are the best buildings of their kind in the world." He is probably right. Success to the Johns Hopkins Hospital.

REVIEWS.

A Text-Book of Pathology, Systematic and Practical. By D. J. HAMILTON, M.B., F.R.C.S.E., F.R.S.E., Professor of Pathological Anatomy, University of Aberdeen. Copiously Illustrated. Vol. I. London: Macmillan & Co. 1889.

THERE can, we think, be little doubt that Professor Hamilton's book will take rank as one of the most important text-books on the science of pathology in the English tongue. Whatever the reader may think of the special views of the author on certain subjects, or of the attitude he assumes in the discussion of pathological problems, he cannot fail to admire and praise the patient industry, the detailed experimental research, and the laborious literary compilation which have resulted in the work, the first volume of which is now before us. In setting himself to write this book the author undertook no easy or unambitious task—in fact we scarcely know of a more ambitious in the whole range of medical literature. Indeed, if anything were needed to prove the absolute necessity of specialism in modern medicine, or to demonstrate the very obvious fact of the utter impossibility of any one man attempting to pose as an authority, not certainly on the science and art of medicine as a whole, but even on the component parts which go to make up that science and art,

it is the appearance of such a book as this. Considering the magnitude of the work, it is not at all an easy thing to write a critical and comprehensive view of the book, and we think we will best accomplish our object, if we in the first place give our readers some idea of the contents and scope of the volume, and in the second, state our opinion of the book as a whole and of some special sections of it.

Volume I consists of three parts—viz., Part I, Technical ; Part II, General Pathological Processes ; and Part III, Diseases of the Various Organs and Tissues ; there is in addition an appendix on the “making of casts, models, &c.” The parts are divided into sections, and the sections sub-divided into chapters, some of the sections containing many chapters, according to the importance and scope of the subject, with which they deal. In Part I, we have sections on the *sectio cadaveris*, the preparation of tissues for detailed examination, the microscope, and practical bacteriology. Part I is, in fact, a separate and complete work in itself on the subject of practical pathology. Part II contains a chapter on health and disease, and sections on infiltrations and degenerations, inflammation, suppuration, healing and organisation, ulceration, and dropsy. Part III deals with the structure and reproduction of cells, the new formations and tumours, the blood, the heart, and the blood-vessels.

It will thus be seen that the contents of Volume I include a very large and important part of the whole science of pathology, and when we state that the number of chapters in the book is forty-four, and that in addition to literary references discussed and criticised at length in the text (to which a key is given at the end), each section is provided with a lengthy biographical list, our readers will have some idea of the magnitude of the author's labours and of the minute detail into which he has entered in the discussion of most of the subjects. With regard to the numerous illustrations we have only to say that they have been artistically and beautifully executed, and are well worthy of the great book of which they form a most valuable portion.

We have now arrived at the most difficult part of our present duty, namely, the endeavour to formulate a critical opinion of the contents of the volume. No one can go through the pages of this book without at once being impressed with the thoroughness and detail, with which the author has applied himself to the study and original investigation of pathology in all its departments. On almost every subject, which he handles, the impress of a very striking

individuality is left. On every question the right of private judgment has been scrupulously and fearlessly exercised, and once a conviction has been arrived at, the author's opinions are expressed in no uncertain or undecided terms. We cannot but admire the sturdy strength of mind which this implies, but at the same time we must add that occasionally it leads to—at least an apparent—disregard and neglect of the views of writers, whose opinions are well worthy the consideration of every logical and critical mind. In reading the book we sometimes feel that an element of dogmatism prevails unduly, and surely dogmatism in the science of pathology—a science which is largely in a transition stage, and many departments of which require rewriting and reconstruction every five or ten years—is out of place. While we are on the subject of the dangers of dogmatism in pathology, we would remind Professor Hamilton of a discussion on the pathology of Phthisis Pulmonalis, which was held in Glasgow during the spring of 1881, and in which he took a prominent part. In that discussion Professor Hamilton said—“A question has been raised of late as to whether the mere histological features of a tubercle can be taken as a test of identity. My reply to that is, that if we can define histologically what a cancer, a sarcoma, a fibrous tumour, or a myoma is, then the same applies with even more force to the detection of a tubercle.” He also at the same discussion in most emphatic language opposed the view of Cohnheim (Koch's discovery had not then been published), which is thus expressed on page 418 of the present volume—“All is tubercular, which by transference to properly constituted animals is capable of inducing tuberculosis, and nothing is tubercular unless it has this capability.” In reference to this view, Professor Hamilton said in 1881—“Are we, therefore, to say with Cohnheim, that the caseous matter and the tubercle are identical—that all is tubercle which, by inoculation into properly constituted animals, is capable of inducing tuberculosis? I most distinctly beg to oppose this opinion.” These are interesting historical facts, especially in view of the almost universal acceptance that has been accorded to the views of Cohnheim and Koch on tuberculosis. We do not find that the author repeats his dogmatic views of 1881 in his present work. Again the following parallel passages are not without interest and significance as regards the matter at present in hand. In 1881 Professor Hamilton wrote—“But that the milk of tubercular cows actually contains this poison, seems to be very doubtful, and has never been proved beyond dispute.” In

1889 he writes (page 433)—“*Milk from tubercular cows* seems to be a certain means of inducing tuberculosis when ingested.”

Another criticism which we feel constrained to pass upon the science of pathology as taught by Professor Hamilton, is that his method is too mechanical. It seems to us that in many places there is too great an endeavour to reduce pathological problems and processes to a purely physical basis—the result being that the vital element, which should always be kept in view, is in a measure lost sight of. This attitude is, perhaps, more or less inevitable where the observer is entirely engaged in pure pathological research, and has but little opportunity of studying the phenomena of disease from the clinical standpoint. With regard to the teaching of anatomy, we once heard a well known physician remark that he thought there was often a want of perspective in the present methods of teaching. He meant to say that as at present taught the bearing of anatomical facts upon the future work of the medical student was not sufficiently kept in view, that facts having much, and facts having little, bearing (however important the latter might be from the point of view of the pure anatomist) upon the practice of the healing art, were put before him with equal force and precision, the result being that almost the whole of anatomy was soon forgotten. In teaching pathology, it would be well also to bear in mind the necessity of perspective, and a pathology which is too mechanical, too purely physical, too much taught as an independent science, is likely to be barren of results in the life-work of the practitioner. We felt this a good deal in reading the pages on inflammation. In this part of the book we have an elaborate account of experiments on the circulation of bodies through capillary and larger tubes. These experiments are most beautiful and convincing in their results; but then it struck us that rigid tubes, with a circulation set agoing by gravitation, are scarcely comparable with or analogous to tortuous flexible vessels, with living walls, and containing amœboid white blood corpuscles sent into circulation by the intermittent force of the heart. We cannot entirely agree with the author in saying that the circulation of the corpuscles is not “due to any so-called vital action,” and that “it follows that their explanation is to be sought in the study of those forces which influence bodies suspended in a liquid circulating through a tube” (page 196). In the case of inflammation, this is, we think, only a part, and a comparatively small part, of the truth. Statements, such as these just quoted, illustrate

the mechanical and physical tendencies of the author, and without attempting to deny that the experiments are of value, especially from a physiological standpoint, we cannot admit that they in the least cover the whole ground, so far as the circulatory phenomena of inflammation are concerned.

We think the chapters on the Healing of Wounds and Organisation are specially good, and the reader will find in them a most interesting and important account of the author's researches upon the subject of sponge grafting. The chapters on tumours are well done, and are remarkable for the number, beauty, and faithfulness of the illustrations which they contain. The section on diseases of the blood will prove of great value for reference to all interested in the study of this very important class of diseases. In this part of the book, under the title "Pathological States of the System which Influence the Coagulation of the Blood," we notice a paragraph entitled "(2) Hæmophilia, or Purpura Hæmorrhagica." Does this mean that these are synonymous terms? If so, we think there are few who will agree with the author. We think that five and a half lines is scarcely enough, or at least in proportion in a work of this kind, for the discussion of so important an affection as hæmophilia. The volume concludes with chapters on the heart and blood-vessels.

With regard to the practical part of the book, we have little to say. The articles on microscopical and bacteriological technology are uniformly good, and give convincing proof of Professor Hamilton's great histological dexterity—a dexterity for which he is well known. In several particulars, we think the method of performing a *post-mortem* examination adopted by the author, might be very considerably improved. The "difficulty in afterwards filling up the ugly gap" is surely no scientific reason for not separating the clavicular attachment of the sternum, a procedure which should always be undertaken in a thorough investigation of the thorax. We think it better to leave the removal of the liver till nearly the last; and in describing the removal of the kidneys the author makes no mention of the necessity of first of all separating the large bowel from its attachments. The author describes an elaborate method of exposing the different parts of the brain, on the value of which we can offer no opinion.

Although we cannot agree with Professor Hamilton in a number of his views, we must end this review as we began it, by saying that we have little doubt that this book will take rank as one of the greatest text-books on pathology in the language.