

have to be called into use in England) these corporations are not allowed to make money by engaging in commercial pursuits or the keeping of boarding-schools. (3) The appointments are graduated in value from 80*l.* to 400*l.* per annum. (4) New members are chosen in any one corporation by co-optation. The promotion of existing members is effected by the same process—one corporation often inviting a member of another to leave his old associates in order to enjoy an increased salary, or increased facilities for research. This co-optation is carefully supervised but not directed by the State Government. (5) Since commercial operations, such as the acquirement of a large revenue by any corporation from the fees of pupils or wards committed to its care, are out of the possibilities of the case—the sole motive which affects the various corporations in their choice of colleagues is a desire to secure colleagues of eminence in the avocation which is assigned to the corporations, namely, research, and in this way to maintain a high reputation for the corporation and congenial association for its members. (6) The result of this is, that the whole stimulus which the prospect of a step-by-step accession of income from 80*l.* to 400*l.* or 600*l.* per annum can bring to bear upon the nature of man is constantly at work in urging those who enter upon this career to give their full energies to research, and research alone. The habit of research so stimulated and fostered, remains even after a career of twenty or twenty-five years—the length of service which entitles the German professor to retire upon full pension.

The enormous fertility of Germany in all kinds of research is the outcome of this simple and healthy system. There does not appear to be any reason why a parallel system applied in this country should not produce parallel results.

E. RAY LANKESTER

#### QUAIN'S ANATOMY

*Quain's Elements of Anatomy.* Eighth edition, edited by Dr. Sharpey, Dr. Allan Thomson, and Mr. E. A. Schäfer. Two Vols. (Longmans, Green and Co., 1876.)

THE seventh edition of Quain's "Anatomy" appeared nine years ago under the conjoint editorship of Dr. Sharpey, Dr. Thomson, and Dr. Cleland; in the eighth Mr. E. A. Schäfer's name is found on the title page instead of that of the last-named anatomist. The new edition contains much new matter, and with a larger as well as a clearer type, covers nearly an extra hundred and sixty pages.

The arrangement of the subject-matter is considerably modified in the direction of improvement; the descriptive account of the bones, joints, muscles, vessels, and nerves, together with the surgical anatomy, occupying the first volume; the second, containing the general anatomy or histology, the structure of the different viscera, the organs of special sense, and the embryology.

A much-needed advance has been made in the sections devoted to osteology and myology, which consists in the introduction of paragraphs on general morphology. Teachers of anatomy are too apt to entirely neglect those great strides that have been made in zoology, many of which have an important bearing upon the way in which the human skeleton and soft parts should most

certainly be regarded. We, upon this view of the question, are therefore glad to find among other innovations, a classified list of the bones of the head, and their typical component parts, the nomenclature adopted being that employed by comparative anatomists.

The introduction of nitrate of silver, osmic and chromic acids, logwood, &c., as adjuncts to histological manipulation, as well as the efforts of many able investigators, have rendered corresponding changes necessary in the sections of the work devoted to the microscopic structure of the tissues and organs; and Mr. Schäfer has here introduced several fresh illustrations, and much new matter, which makes the "general anatomy" by itself an invaluable summary of the most modern aspect of histology. The development of blood corpuscles, the ground-substance of connective tissue, the ultimate nature of muscle, the serous membranes and their lymphatics, have received the greatest additions in this portion of the work.

Dr. Allen Thomson has entirely re-written the chapter on embryology, having embodied all the more recent results in this rapidly advancing department of biological science, arrived at by Foster and Balfour, Parker, Mihalkovics, Waldeyer, and others. The whole forms a most excellent account of human embryology, as far as it can be known from the incomplete direct, and the much indirect evidence which can be brought to bear upon it.

The editors acknowledge the assistance of Dr. Gowers, Assistant-Physician to University College, in the revision of the paragraphs on the Cranial Nerves; and in the chapter on the Brain and Spinal Cord, Dr. Gowers has introduced a valuable account of the cerebral convolutions, together with some excellent drawings, more elaborate than those of Ecker. The nature of the many layers of the cerebral cortex is fully discussed, at the same time that a careful abstract of the terminology of Meynert is given, with additional figures.

There is one minor zoological error which we have not seen corrected in any anatomical or physiological textbooks. It is in the nomenclature of the animals with peculiarly small blood-discs. The "Napu Musk Deer" is said to possess the smallest blood corpuscles of all mammalia. It is now known that the Musk Deer has no special kindredship with the Chevrotains, or Tragulidæ, to which group the Javan Chevrotain (*Tragulus javanicus*), which formerly went by the name of the "Napu Musk Deer," belongs. A reference to Mr. Gulliver's more recent paper<sup>1</sup> also shows that in the Indian Chevrotain (*Tragulus meminna*) the discs are equally minute.

With reference to the typography we think it much improved in all respects, but of the figures we cannot help remarking that sufficient care has not been taken by the printers in doing justice to the artists or the engravers. Several of the older woodcuts are, no doubt, much worn, but they, as well as the more recent ones, are printed much too black, considerably darker than in the previous edition.

#### OUR BOOK SHELF

*Exercises in Electrical and Magnetic Measurement.* By R. E. Day, M.A. (London: Longmans, Green, and Co., 1876.)

MR. DAY'S little book on Electrical and Magnetic Measurement seems to us likely to be of considerable

<sup>1</sup> Proc. Zool. Soc., 1875, p. 492.