

a few chapters. These, however, are of less interest as not embodying the results of his personal observations, but being a discussion of the various well-known moral, mental, and physical characteristics of mountaineers. To these follow chapters on the influence of mountain travelling on health, and detailed experiences of the application of artificial rarefaction of the air in disease.

With the desire of making the work as complete on the subject as possible, the author has compiled a large part of it from well-known writers, and recapitulates much that is of everyday observation; and these parts have naturally less interest than those which deal directly with his Mexican experiences. The whole of the facts, however, which bear upon the question discussed are conveniently collected together and put in an interesting form for the perusal of the general reader, for whom, however, much of it has too medical an aspect.

#### OUR BOOK SHELF

*The Royal Tiger of Bengal: his Life and Death.* By J. Fayrer, M.D. (London: J. and A. Churchill.)

IN this small work Dr. Fayrer gives a popular description of the zoological relationships, anatomical structure, geographical distribution and habits of the tiger. Accounts are also introduced of tiger-hunts, which well exemplify the dangers to be feared and the precautions to be taken in the pursuit of that large game, which even under the most favourable circumstances cannot be followed without a great amount of risk. The author's considerable Indian experience gives great weight to his opinions on many of these points, especially with reference to the nature of the wounds inflicted by the enraged creature.

Anatomically Dr. Fayrer brings to our notice a point in the disposition of the claw-bearing or unguis phalanges of the digits in the cat-tribe, which is not without interest. In the fore-limbs, as is well known, these bones, when the claws are fully retracted, bend extremely backwards in order to allow of the claws themselves being protected during progression. To so great an extent is this retraction carried, according to Prof. Owen, that the bone passes back to the side of the second phalanx in the same way that the blade of a clasp-knife may be said to do the same with reference to each lateral portion of the handle. In the hind limb of the tiger, Prof. Owen remarks that they are retracted in a different direction, "viz., directly upon, not by the sides of the second phalanges, and the elastic ligaments are differently disposed." Dr. Fayrer finds that in the smaller Felidæ, as the Ocelot, the hind claws are constructed and retracted on exactly the same principle as the fore. Such being the case, either the tiger differs from its smaller congeners, or Prof. Owen is wrong. Till Dr. Fayrer proves the latter, we prefer to assume that the former is the case.

"Contrary to custom, I propose to give him (the tiger) precedence of the lion. He is generally described as inferior, though nearly equal, to the so-called king of beasts; but in size, strength, activity, and beauty he really surpasses him; and therefore, though he may neither be so courageous nor so dignified, he is entitled to the first place—at all events in India." Thus says our author, and many of his descriptions fully exemplify all the animal's best points. Nevertheless, though he may be slightly greater in length, and is perhaps more active, we considerably doubt his greater strength, and as the work before us fully proves, we cannot say of him as a recent writer tells us of the lion, that "it should always be recollected, before meddling with lions, that if you do come to close quarters with them death is the

probable result," the tiger having a much less dignified habit, an example or two of which we quote with reference to a case in the Madras Presidency, where a sportsman wounded the creature more than once. "It charged and seized him by the loins on one side, gave him a fierce shake or two, dropped him, and then seized him on the other side, repeated the shaking and again dropping, left him and disappeared." In a second instance a military man, "a most distinguished soldier and sportsman, when following a wounded tiger on foot in the long grass, was suddenly seized and carried off by the animal he was seeking. He managed, however, to effect his escape without having received any serious injury, and rejoined his companions, who had deemed him lost."

When so acute an observer as the late Mr. Edward Blyth, with his great experience, expresses uncertainty as to whether the lion or the tiger is the larger animal, we may be certain that there is no great difference either way. Dr. Fayrer tells us, "I have been informed by Indian sportsmen of reliability, that they have seen and killed tigers over twelve feet in length." In none of the special instances he mentions, in which careful measurements were made, did the length exceed ten feet by more than an inch. We quite coincide with the author in looking with doubt on Buffon's statement that one has attained the length of fifteen feet.

For further information on the above and kindred points with reference to the Royal Tiger of Bengal, we cannot do better than recommend the reader to glance through the small work under review.

*An Introduction to Animal Physiology.* By E. Tulley Newton, F.G.S. (Mumby's "Science and Art Department" series of Text Books.)

IN more than one of the Science Primers which we have lately had occasion to look through and notice, it has been painfully apparent that the author is not nearly so well grounded in the subject he is endeavouring to teach as even some of his probable pupils. Some write on human physiology without having studied human anatomy; others even do not know their physiology. The author of the work before us is not one of these. It is accurate, and therefore reliable. The descriptions are precise and clear. The limits of space within which the author is confined have, in some of his descriptions, made it necessary for him to sacrifice clearness to a certain extent, but this cannot be avoided. A novel feature of the work is the addition to each chapter of a practical section, in which directions are fully given for study, by the student himself, of the more simple physiological and anatomical points referred to. These directions are particularly clear, and if carefully worked out by everyone who reads the book, will be found to lead to a sound knowledge of the first principles of physiological science. The illustrations, which are numerous, though mostly to be found elsewhere, are well selected, and sufficiently large to be distinct.

*Abstracts and Results of Magnetical and Meteorological Observations at the Magnetic Observatory, Toronto, Canada, from 1841 to 1871.* (Toronto, 1875).

IN this thick pamphlet of 249 pages, Professor Kingston gives the results of an elaborate, able, and discriminative discussion of the magnetical and meteorological observations made at Toronto during the thirty-one years ending with 1871, in a series of fifty-one tables. To these are appended the daily observations from January 1863 to December 1871. While all the results of the observations, devised and carried out with so much care, and extending over so long a period, are of very great value, we would point to the wind observations as regards the diurnal changes, but particularly in their relations to differences of temperature, pressure, humidity, and cloud, and to light, moderate, and heavy falls of rain and snow respectively, as affording, from the fulness and