OUR BOOK SHELF.

Leitfaden für das mikroskopisch-zoologische Praktikum. By Prof. W. Stempell. Pp. iv+84. (Jena: Gustav Fischer, 1911.) Price 2.80 marks.

THE medical practice of teaching histology in a separate section of the course is, we regret to see from the author's preface, becoming adopted in biological teaching; and to this circumstance Prof. Stempell refers for the origin of his book, since he has adapted its contents to meet the requirements of beginners who wish to traverse rapidly a course in comparative microscopy apart from the dissections, museum work, and naked-eye observations with which microscopic work has been hitherto so usefully associated.

At first all is smooth sailing. A lucid introduction on apparatus paves the way to five lessons on protozoa. The methods of obtaining, examining, and preparing the material are admirably explained. The paragraphs are numbered, so that references to procedure can be made at once, and the most instructive and accessible members are dealt with before those which present greater difficulties. A few pages later, however, we find Anthozoa, Ctenophora, Turbellaria, and Trematodes dealt with in a single section, which we must suppose represents three to four hours' work. On the other hand, far more attention is given to the Nematoda than is usual in an elementary course. The section devoted to vertebrate histology is very incomplete.

The illustrations have a special value, since they are in every case photographic reproductions of actual preparations, but as no attempt is made to explain what they show such figures cannot be said to be useful to the student. The chief use of the book lies in the methods which it suggests for the collection and preservation of material. In this respect it will be of considerable service, but as an attempt to present a working course in comparative histology, we should be sorry to see Prof. Stempell's recommendations carried out without considerable modification.

F. W. G.

Early Essays on Social Philosophy. Translated from the French of Auguste Comte by H. D. Hutton. A new edition with additional notes, and with an introduction by Frederic Harrison. Pp. 352. (London: George Routledge and Sons, Ltd.; New York: E. P. Dutton and Co., n.d.) Price 1s. net.

THESE six essays, written by Comte between the ages of nineteen and twenty-one, appeared in vol. iv. of the "Positive Polity," published in 1877. Their special interest is that they prove the unity of their author's life-work—the coherency and consistency of his scientific philosophy and his social polity—as against the view of Littré, that the two are disparate, the later work a backsliding from the principles of the earlier.

The third essay is the longest and the most important. It contains in exact and decisive form the famous Law of the Three States, which "all subsequent thinkers have regarded as Comte's triumphant discovery," and is the basis and the justification of Positivism. From the nature of man's intellect each branch of knowledge in its development is necessarily obliged to pass through three stages—the theological, the metaphysical, and the scientific or positive.

The fourth and fifth essays give a *résumé* of the entire system of the "Positive Polity" as meaning a social and religious reorganisation of society based upon a scientific study of human nature.

Mr. Frederic Harrison supplies an excellent little introduction to this new edition.

Technique de Psychologie Expérimentelle de Toulouse, Vaschide et Piéron. By Ed. Toulouse and H. Piéron. Second edition, tome i., pp. xii+303; tome ii., pp. xvi+288. (Paris: Octave Dion et Fils, 1911.) Price 10 francs the two volumes.

THIS edition, now expanded to double the former size and comprised in two volumes, is virtually a new book. Far more space is devoted to the description of apparatus than formerly. Pieces of apparatus are illustrated, many of which are quite unknown in the psychological laboratories of this country. Not only for this reason, however, is the work likely to be of little value to elementary students of the subject on this side of the Channel. The authors err in laying no stress whatever on an acquaintance with the psycho-physical methods, and on the importance of obtaining introspective data in psychological experiment. It appears to be their object merely to "describe apparatus," much as the authors of a book on experimental physics would do, leaving on one side methods of procedure as if they could be picked up haphazard in the laboratory, and neglecting the introspective data obtainable from the subject of the experiment as if they did not exist! For the instructor or the advanced student, however, the work is of considerable interest. The apparatus, unfamiliar in this country, is excellently described; and there are several novel experiments which appear to have promising value.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Rainless Thunderstorms.

FROM the letter signed "E. G." in your issue of August 31, it would appear that the Meteorological Office has not abandoned the ion condensation theory of the origin of atmospheric electricity. Now, there are many difficulties in accepting that theory. For instance, before condensation can take place on ions, there must first be dustless air; otherwise the necessary supersaturation cannot take place; and one naturally asks, Has anyone ever found dustless air in our atmosphere? So far as records go of air up to 10,000 feet, this has not yet been found, and it does not seem likely that it ever will be found, as the hot air carrying up the aqueous vapour to form clouds always carries up with it plenty of dust to act, if one may use the simile, as the return ticket to bring the water back to the surface of the earth. As much of this dust is very fine, only falling a few centimetres in a day at low level, it is likely to go wherever the moist air goes—in even the more rarefied regions of the upper clouds. Further, there is the constant supply of fine dust from the upper regions due to the disintegration of meteors, so that the air at cloud levels is likely always to have plenty of dust and condensation on ions seems impossible.

Another difficulty of importance is, Has anyone ever shown that it is possible for a cloud to form on ions under the conditions in which condensation takes place in the atmosphere? It is true that clouds can be formed on ions under experimental conditions; but in these the expansion must be made with explosive quickness, because if the expansion is made slowly only a few ions become centres of condensation, and these rapidly grow to the size of raindrops in the highly supersaturated air; and these drops in falling relieve the supersaturation of the air some distance round them all along their path, so preventing other ions becoming centres of condensation, and only rain, not cloud, is produced. It would appear that these and other difficulties are worth considering before accepting the ion condensation theory of the electrification of clouds.