

firing," compiled in "drill book" style, but illustrated with most excellent diagrams, which are almost self-explanatory, is a section on grenade tactics. A description of French and German grenades follows, and then a section on explosives used in grenades. Here the author might well have been more explicit; in an attempt to be concise much of the information has been too condensed to be clear. We read, for example: "Picric acid. A yellow crystalline prepared from coal tar. A by-product of gas manufacture." Again: "Lyddite or picric acid. Consists of melted and solidified picric acid. Vaseline is used to melt it." The alternative for benzol is given as benzine. Under cordite no reference is made to M.D., but only to the old Mark I., and the nitroglycerine content of this is wrongly stated. The acetone used for incorporation is described as merely "acetone to harden."

The practical part of the book will no doubt be of assistance to students of grenade work; it is essentially a soldier's book, but its value would have been greater had the author not attempted to impart information in too few words.

Therapeutic Immunisation: Theory and Practice.

By Dr. W. M. Crofton. Pp. 224. (London: J. and A. Churchill, 1918.) Price 7s. 6d. net.

IN the earlier chapters of this book the author surveys the processes underlying immunity, and describes the preparation and properties of toxins and antitoxins and the agglutination and precipitin reactions. The principles of therapeutic immunisation by means of vaccines are then considered, and finally the practical applications of therapeutic immunisation to diseases of the alimentary canal, the respiratory system, and other regions of the body are described. The author's system does not appear to differ essentially from the customary routine, with the exception that in some instances he advocates the continuance of treatment until very large doses of vaccine are reached, e.g. 30,000 million cocci in the case of some staphylococcal infections. The use of various iodine preparations is also recommended as an adjunct to vaccine treatment in some infections. For the treatment of tuberculosis, tuberculin made by extraction with benzoyl chloride, which is a solvent for the waxy constituent of the tubercle bacillus, are considered to be superior to the ordinary tuberculin.

In addition to vaccine treatment, the use of vaccines for prevention is also considered where they are applicable, as in the cases of typhoid fever, cholera, plague, etc.

The book gives a useful summary of the practice of vaccine treatment. The practical details of the isolation of the micro-organisms concerned and the preparation of the vaccines therefrom are, however, scarcely touched upon. Full directions are given for the dosage of vaccines and for the proper spacing of the doses, and these will be found very useful by the practitioner who is adopting vaccine treatment.

R. T. H.

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LETTERS TO THE EDITOR.

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The Stimulation of Plant-growth by Electric Fields.

IN his letter on the above subject in NATURE of March 7 "J. L." states that "the procedure suggests that it is the field of force that is expected to produce the stimulation. The comparatively trifling amount of electricity that leaks from the wires into the atmosphere could scarcely produce directly any sensible effect." It is perfectly clear, however, that Lemström—the professor of physics at Helsingfors who started about thirty years ago the modern phase of electro-culture with overhead wires—held the view that the current leaking from the wires and passing through the plant was responsible for the effects on plant growth which he describes. For the purpose of increasing the discharge he used fine wires, 0.6 mm. in diameter, placed only 40 cm. above the plants, and provided with "barbs" 2 cm. long. In similar experiments in this country the fine wires have been retained, though the "barbs" are usually dispensed with.

It is true that our knowledge of the effects of electricity on plant growth is practically nil, and that the currents in question are very small, being of the order of 1 milliamp. per acre in some recent experiments with wires about 7 ft. high. It is, however, not unpalatable to assume, although, of course, there are other possibilities, that the passage through the plant of such minute currents may alter the rate of some of its metabolic processes, and so affect plant growth.

In the experiment suggested by "J. L.," where the overhead wire is supposed to be protected from leakage, as, for example, by encasing it in a solid dielectric, it is not clear that a discharge from the pointed aerial portions of the plant would continue unaltered. Although a strong wind may prevent a large part of this discharge from passing to the dielectric enclosing the wire, such a wind will scarcely be able to prevent other atmospheric ions from being attracted to its outer surface. Air currents, in fact, will bring such ions to the dielectric on which they will form a gradually increasing charge tending to weaken the electric field between the wire and the crop. If the overhead wire be bare, but of large gauge so that leakage from it is small, and its potential be increased to such a value that a discharge occurs from the plants, then, with a strong wind, the current passing through the crop may be very much greater than that leaking from the wires.

V. H. B.

G. W. O. H.

Does the Indigenous Australian Fauna Belong to the Tertiary?

THE statement that the indigenous mammalian fauna of Australia belongs to the Mesozoic has been so frequently made that it has come to be generally accepted. It was, therefore, not surprising to find the reviewer of Cleland's "Geology," in NATURE of August 2, 1917 (vol. xcix., p. 441), pointing out as a mistake the opinion expressed in that text-book that the fauna is a Tertiary one.

In order to ascertain the opinion of vertebrate palæontologists on this point, letters were sent to Messrs. J. W. Gidley, W. D. Matthew, and S. W. Williston.