recollection while conducting a course for students. But it is perhaps not often that short notes of this kind are of very much service to anyone except the man who put them together.

Lessons in Elementary Tropical Hygiene. By Henry Strachan. Pp. xi+116+vi plates. (London: Constable and Co., Ltd., 1913.) Price 1s. net.

WE heartily recommend this little book. It is, of course, quite simple and very elementary; that is what it was intended for. Still, London school-teachers will find many useful hints in it. But it is written chiefly for the help of school-teachers in the tropics, both in Africa and in the West Indies. The author has been Principal Medical Officer of Lagos and of Southern Nigeria, and for two years he was acting as Colonial Secretary in Lagos. If he does not know the feel of the white man's burden, who does? And he knows well that the way to put things right in this world is to get at the children. It is they who will hold the ground which our men of science have won in the tropics. The victories of protective medicine and of sanitary administration over tropical diseases in Africa are, to us older people, still new, still wonderful; to the children, before many years are past, they will be old stories retold, facts taken for granted.

Anaesthetics: their Uses and Administration. By Dr. D. W. Buxton. Fifth edition. Pp. xiv+477. (London: H. K. Lewis, 1914.) Price 10s. 6d. net.

THE advances in the knowledge of anæsthesia and analgesia made it necessary for Dr. Buxton to rewrite most of the sections in the previous edition of his useful work, to delete obsolete apparatus and theories, and to add much new matter. Among other new features are the procedures involved in giving nitrous oxide and oxygen in major surgery; of ether by the open method, by intra-vascular infusion, by intra-tracheal and pharyngeal insufflation, and by colonic absorption; the methods of local regional and spinal analgesia, and the employment of alkaloids in analgesia and anæsthesia.

Defensive Ferments of the Animal Organism. By Emil Abderhalden. Third enlarged edition. English translation by Dr. J. O. Gavrinsky and W. F. Lanchester. Pp. xx+242. (London: John Bale, Sons and Danielsson, Ltd., 1914.) Price 7s. 6d. net.

THE first German edition of this work by the director of the Physiological Institute of the University at Halle a/S. was reviewed in the issue of NATURE for September 19, 1912 (vol. xc., p. 66). That two further editions were published in Germany in the following year is good evidence of the increasing interest being shown in Abderhalden's methods. The English edition will serve to bring these researches within the range of English students to whom the German text has been inaccessible.

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LETTERS TO THE EDITOR.

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Cellular Structure of Emulsions.

ON Prof. Kerr Grant's letter (p. 162) see for previous observations of this striking phenomenon Prof. James Thomson, Proc. Glasgow Phil. Soc., February 15, 1882, reprinted in his collected Papers (p. 136); also by reference given in a footnote to the reprint, to more detailed and independent investigations by Prof. Bénard, of Bordeaux, in *Annales de Chimie*, 1901, and more recent papers, including a recent lecture to the Société de Physique, and to their discussion in connection with the solar phenomena referred to by Prof. Grant, by H. Deslandres, in the *Annals of the Observatory of Meudon* (vol. iv., 1910).

JOSEPH LARMOR.

THE cellular arrangement of convection currents in emulsions, described by Prof. Kerr Grant in NATURE of April 16, was first recorded by E. H. Weber in 1855, with gamboge suspended in a mixture of alcohol and water. It is discussed in O. Lehmann's "Molekularphysik." The structure is most conveniently seen in molten wax or spermaceti, and in this form was discovered by H. Bénard. Many papers by Bénard, Dauzère, and others have appeared on the subject in the *Comptes rendus* and *Journal de Physique* since 1901, and the possible bearing of the phenomenon on geological and astronomical problems has been discussed. A paper by James Thomson on cellular structure due to convection, originally published in 1882, is included in his collected works. In this case soapy water was the liquid used. An account of the phenomenon, with references, is given in the present writer's report to the Beilby Prize Committee, read at the March meeting of the Institute of Metals.

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The Origin of the Moon and the Earth's Contraction.

IN my letter to NATURE of February 26, I said that, with the earth's radius and gravity at their present values, and with the speed of rotation assumed to be one revolution in five hours, gravitation would exceed the centrifugal force until a distance from the surface was reached of more than double the earth's radius. Dr. Ball upon this writes that I "concluded" that when the moon was detached from the earth, "the earth's radius must have been about three times its present one." I did not mean to imply this.

The whole subject of the moon's origin is highly speculative, as Sir G. H. Darwin himself admitted. There are two causes that might be invoked to account for the separation of her mass from the earth, viz., centrifugal force, and the sun's tidal action. These require different speeds of rotation. In Pratt's "Figure of the Earth," 4th ed., art. 102, he shows that with a homogeneous earth the time of rotation which would render the centrifugal force equal to gravity would be one revolution in two hours and twenty-four minutes. I think that if the central parts were the more dense the speed would be rather greater. It seems impossible that a solid crust could have formed at this early period, when the spheroid could only just hold together. The eccentricity would then have been about 0.22.