

*Recherches Expérimentales sur les Spectres d'Étincelles.*

By G. A. Hemsalech. In three parts. Pp. xvi + 135. (Paris: Librairie Scientifique, A. Hermann, 1901.)

THE author, as an introduction, gives a short historical notice of the investigations on the nature of spark spectra by Wollaston in 1802, Talbot and Wheatstone in 1836, and later those of Masson, Ångström, Kirchhoff, Miller, Huggins, Lockyer, Hartley and Adeney, Eder and Valenta, Exner and Haschek.

The first part of the book is then devoted to a short description of the characteristics of various types of spark, ordinary, intermittent and oscillatory, with the influence of varying self-induction on those of the latter description.

The second part describes in detail the apparatus, electrical and spectroscopic, used in the investigations, with illustrations of typical sparks of the three mentioned classes.

Part iii. is occupied by a series of tables showing the wave-lengths of the lines measured in the spectra of the fourteen metals, Fe, Mn, Ni, Co, Cd, Zn, Mg, Al, Sn, Pb, Bi, Sb, Cu, Ag, with their relative intensities under three degrees of self-induction. The lines in the spectrum of air are also tabulated, showing their varying intensity in the spectra produced by the above metals being used as poles.

The variation of the self-induction is accompanied by different results according to the metals used, and the fourteen elements investigated are divided into two groups, one containing Fe, Mn, Ni, Co, the other the remaining ten metals. With the first group, increase of self-induction produces a general increase of brightness of the constituent spectral lines, while in the second group the intensities of the lines are diminished by increasing the self-induction. The lines due to air may be completely eliminated.

The work, commenced by Schuster and Hemsalech conjointly, has been continued by the present author in the physical laboratory of the Faculty of Sciences of Paris at the Sorbonne. C. P. B.

*Moral Nerve and the Error of Literary Verdicts.* By Furneaux Jordan, F.R.C.S. Pp. xxiii + 141. (London: Kegan Paul, Trench, Trübner and Co., Ltd., 1901.) Price 3s. 6d. net.

THE aim of this little book is to throw some light on the effects in life and literature of two different points of view, the literary and the scientific. The first chapter lays down some "guiding truths" on mind and matter; mind is regarded as the function or action of nerve matter, just as contractility is the action of living muscle. All the manifestations of life—morals, religion, laws—are based on quantities, states and changes of nerve-matter. "Matter" is used as meaning natural stuff of which we have some knowledge. The second chapter expounds some "guiding truths" on moral nerve. Morality need not be defined; we know what it is. In men and animals the moral sense is predominant; in both, the impulse to do right is stronger than the capacity to think clearly; few men can measure the planets, but every man strives to preserve from danger the lives of his fellows. How came men and animals to be first of all moral? Because they possess moral nerve-matter; morality is nothing more than the action of moral grey-matter, and the moral apparatus came into existence because it is a factor essential to life. A material moral apparatus exists somewhere and somehow within the skull, and there are grounds for believing that moral nerve is more or less separate nerve, freely communicating with all other varieties of nerve, but characterised by greater simplicity and directness. The next two chapters are devoted to Mr. Spencer and Huxley as moralists. Mr. Spencer underestimates the potency of nerve-organisation, and is wrong in putting the origin of the moral

sense quite late in the course of evolutionary time, the truth being that a certain bed-rock code is found wherever life is found. In common with literary thinkers, he fails to see that creeds, philosophies and moral codes are not the producers, but the products of living human nerve. Huxley is judged by his Romanes address on "Evolution and Ethics," and the verdict is that the address is marked by not a little confusion, inconsistency and inaccuracy. The fifth chapter, on the principle of punishment, which concludes the first part of the book, introduces us to a fresh theory of the origin of morality; it now appears that the punishment of immorality is the one method by which morality originated. The chapter concludes with some interesting remarks on destructive anarchism and its remedies, but is marred by the grotesque suggestion that in order to effect a maximum of humiliation the assassin should, by way of punishment, be flogged by a woman!

Part ii., which occupies about half the book, deals mainly with the errors of literary verdicts, and if Mr. Spencer and Huxley fall short of the scientific ideal, we are not surprised that the student of nerve should find much to criticise in Tennyson, Mill, Carlyle, Emerson and Goldwin Smith. It is unnecessary to give an account of this part of the work; the author's point of view will be understood from our summary, given mainly in his own words, of part i. He has evidently read much, writes brightly, and has a fine enthusiasm for truth, but a fundamental error runs through the whole of his book; he assumes the existence of moral nerve, timid nerve, reasoning nerve, &c., and writes about them and reasons from them as if they were well-established realities like motor or sensory nerve, whereas, as a matter of fact, nothing is known about them. We should welcome any real contribution to our knowledge of the relations between the psychical and the physical aspects of thought, but the author gives us nothing of the kind, and in his crude doctrine of moral nerve, moral grey-matter and so forth he is merely playing with words.

*Domestic Economy for Scholarship and Certificate Students.* By Ethel R. Lush. Pp. vi + 251. (London: Macmillan and Co., Ltd., 1901.) Price 2s. 6d.

THE aim of the author of this small volume has been to provide for teachers a concise and clearly-written statement of domestic economy which shall cover the syllabus of the King's scholarship examination and the certificate examination of the Board of Education.

Domestic economy is a subject of wide range, comprising, not only the skilful management of domestic affairs and the wise expenditure of the income, but, in addition, the laws of health and the physiological principles underlying them, the management of the sick, and the intelligent treatment of ailments and accidents on general principles. The author is certainly to be congratulated on having attained her object in a most satisfactory manner. The matter is very clearly expressed, and great judgment and care have been exercised in the presentation of a difficult and complicated subject in order to maintain a suitable proportion in the treatment of the various branch-subjects comprised within the somewhat extensive scope of study of domestic hygiene.

The subject-matter is remarkably well dealt with in the short space at the author's disposal, and having regard to its variety, the teaching is exceptionally sound and correct. In a subsequent edition, however, the following facts should be taken into account:—

The illustrations of the starch grains on p. 7 are so poor as to be practically useless; the specific gravity of average cow's milk is not 1028 (p. 29); the determination of the melting point is of little value as a means of testing for margarine in butter samples (p. 37); and the most characteristic symptoms of enteric fever, consumption and small-pox are omitted, while those of other communicable diseases are given.