sociation-curve of the hæmoglobin as an indicator of the reaction of the blood, and contains a wealth of interesting observations on the effects of diet, exercise, residence at high altitudes, and finally, certain pathological conditions associated with acidosis. The author is to be congratulated on the production of a book interesting not to physiologists only. The lively personal note of the narrative is a happy novelty in a physiological monograph, and will enable those of his readers who have not worked with him to appreciate and, in a measure, to partake of the genial optimism of the author.

E. H. S.

GYROSCOPIC MOTION.

An Elementary Treatment of the Theory of Spinning Tops and Gyroscopic Motion. Second edition. By H. Crabtree. Pp. xv+193. (London: Longmans, Green and Co., 1914.) Price 7s. 6d. net.

IN this, the second edition of Crabtree's admirable book, the text and paging of the first edition have been followed, but additions have been made where necessary, so that more recent developments may be dealt with. The first edition was noticed in *NATURE* (August 12, 1909, p. 182), so that it is not necessary to do more now than refer to the additional matter. The two monorail systems of Brennan and Schilowsky are illustrated and described. It may be mentioned that each of these derive their stability from a gyrostatic system, the action of which is independent of the forward motion of the car, so that the stability exists whether the car is moving forwards or backwards or is at rest, and in this respect differs entirely from the systems more recently invented by Dr. Gray.

There is a full discussion of the Anschütz gyro compass, but this is the same as that which is given in the manual published by Messrs. Elliot Bros., having been translated for them by the author and his colleagues. The writer of this notice hoped to have found also a description of the Sperry gyro compass, which differs in certain respects very materially from its forerunner, the Anschütz. A discussion by the author of the relative merits of the two systems where they differ would have been very illuminating. Unfortunately, this instrument is not mentioned. Other matters ably dealt with in the appendices are the swerving of golf-balls and the drifting of rifled projectiles, both subjects on which amazing nonsense is often written.

There is a statement in the earlier part of the book on the skidding of motor-bicycles, with which the present writer does not agree. Seeing that the back tyre is being constantly impelled to slip

longitudinally on the ground by successive explosions in the cylinder, more especially where a rigid chain drive is employed, or where the fly-wheel of the engine is insufficient, and that a longitudinal slip will start a side slip, there is abundant cause for the side-slipping capacity of these machines, without looking to more subtle causes. Briefly, the author explains that in consequence of the gyrostatic action of the flywheel a transverse couple must be applied in order to make the flywheel's plane of rotation change when the machine is describing a curve. In order to apply this, the rider and machine must lean over to a very small extent more than would be necessary otherwise. So far so good; the transverse couple is caused by the weight of the whole combination of machine and rider acting vertically downwards, and a corresponding reaction at the road acting vertically upwards, and the arm of the couple is the excess of the horizontal distance between the centre of gravity and the wheel base due to the extra leaning. The transverse force on the road, which alone gives rise to side slip, is unchanged.

It is satisfactory to find that there is a sufficient demand for a book of such thoroughness as this to have called for a second edition in a comparatively short time.

C. V. Boys.

BRITISH FLOWERING PLANTS.

British Flowering Plants. Illustrated by Three Hundred Full-page Plates, reproduced from Drawings by Mrs. Henry Perrin. With Detailed Descriptive Notes and an Introduction by Prof. G. S. Boulger. Vol. i. Pp. xlv+ plates. (London: Bernard Quaritch, 1914.)

MRS. PERRIN'S book, of which the first volume is before us, is essentially a book for the use of ladies and those who take a dilettante interest in botany and flowers. It is unfortunate, therefore, that it is of such a weight that its presumed readers may scarcely have the strength or energy to handle the bulky tomes.

Not only are the plates heavily loaded with plaster of Paris, but the large quarto pages of text are of almost equal solidity. If the contents of the book were of any scientific interest or formed a real addition to knowledge, the great bulk of the volume would be a matter of sincere regret; we cannot, however, foresee any particular use for the book, except that its handsome back may adorn the shelves of an expensive library, and can only deplore that the money expended on this production could not have been put to some object of definite botanical value.

The paintings, which afford the *raison d'être* of the book, are on the whole good, though in