

to the testing of engines, and reference is made to the author's accelerometer; we should like to have found a more detailed account of this very ingenious and useful instrument. Examples are introduced in various portions of the work for the student's exercise on points of theory, and answers to many of these are given at the end of the work, which concludes with a useful index. Both in matter and style the book is much better than many of the small elementary treatises that have already appeared, while the printing and illustrations leave nothing to be desired. Altogether this forms an attractive and useful little work which will prove of real assistance to the student in the earlier portions of his course.

(3) In this tract of 78 pages are conveniently collected data as to the physical properties of special interest to the engineer of several liquid substances, including alcohol, chloroform, carbon tetrachloride, ether, ammonia, sulphur dioxide, acetone, and carbon disulphide, together with steam tables. The collection should prove useful for purposes of reference; the author uses British thermal units and Fahrenheit degrees of temperature, and his figures will thus be immediately available to the great majority of British engineers to whom it is still difficult to think in metric and centigrade units, notwithstanding the theoretical advantages claimed for the metric system.

In appendix i. the formula for chloroform (CHCl_3) is incorrectly given as C_2HO_3 , and "carbon chloride" is used for carbon tetrachloride; as there are several carbon chlorides it seems desirable to distinguish clearly which is referred to.

The work is well got up, and contains numerous tables and diagrams relative to the substances dealt with, together with a discussion of the limits of efficiency attainable theoretically with the several liquid fuels considered.

OUR BOOKSHELF.

Percentage Compass for Navigators, Surveyors, and Travellers. By J. C. Fergusson. (London: Longmans, Green and Co., n.d.) Price, unmounted, 2s. 6d. net; mounted on linen, 3s. 6d. net.

MR. FERGUSSON has apparently just discovered what everyone knew before, viz., that at the angle of 45° the natural sine is equal to the natural cosine, or the one is 100 per cent. of the other, and, being obsessed with the idea that the one great object in life is to work out percentages, he has taken the trouble to find the values of the natural cosines when the natural sine has any percentage from 1 to 100 to those natural cosines. He then divides the compass circle into octants, and each octant into 100 unequal parts, or per-

centages, and states that by the use of these percentages Traverse tables are no longer required.

What Mr. Fergusson has really done is to make a new Traverse table where the natural cosine, arranged in percentages in a circle outside the compass, has to be multiplied by the percentage course steered to obtain the natural sine.

At present both natural cosine (diff. of latitude) and natural sine (departure) can be obtained from the ordinary Traverse tables for every degree of the compass and for any radius between 1 and 300.

Not only does Mr. Fergusson give a roundabout way of obtaining a result which can be readily extracted from the Traverse tables, but he also seems to think that the natural cosines and sines on a circle, the zero of which points to the magnetic north, will give the difference of latitude and departure by utilising the percentages of the octants on a compass card marked by his method. These, it is scarcely necessary to point out, can only be ascertained when the zero of the circle points to the true north, or each course steered has been corrected for the magnetic variation and any local disturbance caused by a vessel's magnetism.

An Essay on Hasheesh. Including Observations and Experiments. By Victor Robinson. Pp. 83. (New York: "Medical Review of Reviews," 1912.) Price 50 cents.

It is difficult to regard this booklet as a serious contribution to medical literature. It consists of about four score small, narrow pages, about half of which are occupied by an account of the hallucinations and rhapsodies experienced by the author when under the influence of the drug *Cannabis sativa*. What the precise value of these observations is it is impossible to discover. It is no more practicable to subject them to rational or systematic analysis than to attempt to find reason or method in the incoherent ravings of delirium. The particular manifestations induced by Indian hemp must, of course, largely depend upon idiosyncrasy, temperament, antecedent and accidental conditions, and a host of predetermining and fortuitous causes, and must therefore vary from individual to individual and differ, too, in different circumstances even in the same individual.

The only valuable section of the book is the short digest of the little that is known from prior work concerning the therapeutics and chemistry of hasheesh.

Life and Evolution. By F. W. Headley. Pp. xx+272. Second edition. (London: Duckworth and Co., 1913.) Price 5s. net.

THE present does not differ greatly from the first edition, which was reviewed in the issue of NATURE for March 7, 1907 (vol. lxxv., p. 434). Mr. Headley has re-written a few pages, corrected occasional inaccuracies, and replaced several unsatisfactory illustrations by better. He has also, in the light of new facts which have become available since the book appeared first, modified some of his views.