

retains its place by a convention which remains valid owing to the force of long-continued custom. If the fluctuations in prices as measured by it became too great, it would have to be discarded as a standard of value.

T. K. R.

Artificial Waterways and Commercial Development (with a History of the Erie Canal). By Dr. A. Barton Hepburn. Pp. ix+115. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1909.) Price 4s. net.

AFTER a long period of effacement, artificial waterways are beginning to regain some amount of public interest and concern. The advent and rapid development of railways during the last century was responsible for their relegation into a background of indifference and neglect, and so long as men's minds were dominated by schemes of rapid locomotion at any cost, it was difficult, and, in fact, impossible, for canals to maintain any footing in competition with a system of transit infinitely more expeditious and direct. But a change is taking place in public feeling. It is being recognised that canals have been at an undue disadvantage, and that, as a means of locomotion, they possess features which merit encouragement and development. Inland water carriage for goods, though slow, is safe and cheap, and canals possess a striking advantage over railways in that, in place of isolated depôts at long intervals, they possess a continuous frontage workable throughout their entire length. On these and other grounds, public interest in canals has been aroused, and a Royal Commission in this country has lately had under consideration the means best adapted for their revival and amelioration.

Dr. Hepburn's book is a timely contribution to the evidence on the subject. Written from an American standpoint, it constitutes an appeal to the citizens of the United States in regard to the development of their artificial waterways. It recites in brief compass the principal historical facts connected with canals throughout the world, and then proceeds to consider in more extended detail the canal system of New York, describing its inception, development, and present condition. Thence the author passes, by a transition natural to a patriotic American, to an account of the Panama Canal, with its vicissitudes and possibilities. The volume closes with fifteen statistical appendices.

Hydrographical Surveying. A Description of Means and Methods employed in constructing Marine Charts. By the late Rear-Admiral Sir William J. L. Wharton, K.C.B. A new edition, revised and enlarged by Rear-Admiral Mostyn Field, F.R.S. Pp. viii+475. (London: John Murray, 1909.) Price 21s. net.

THE late Admiral Wharton's "Hydrographical Surveying," which has been for so many years a standard work and one of the best books for surveyors that has ever been published, has now been brought up to date by his successor, Rear-Admiral Mostyn Field, the present hydrographer to the Admiralty. Admiral Field has endeavoured to alter the text of the former work as little as possible, but at the same time to enlarge it considerably by the addition of new features, including expedients connected with work in the field which have been found useful in practice, in order especially to assist the young surveyor by directing his attention to useful methods of procedure which otherwise he would only pick up as his experience ripened. In addition to these features, all the latest improvements are fully described, such as the use of photography for the reproduction of charts, auto-

matic tide gauges, improved instruments for observing currents and taking deep-sea soundings, and, finally, the usefulness of the Barr and Stroud range-finder for surveying purposes.

The volume as it now appears, brought thoroughly up to date and accompanied by excellent diagrams, cannot fail to be of the utmost value to all surveyors.

H. C. L.

Œuvres complètes de Christian Huyghens publiées par la Société hollandaise des Sciences. Vol. xi., Travaux mathématiques, 1645-1651. Pp. iv+369. (La Haye: Martinus Nijhoff, 1908.)

THIS volume is divided into several parts. The first part deals with Huyghens's early writings (1645-6), and is preceded by an account of a manuscript by van Schooten which formed the basis of Huyghens's first mathematical studies. The writings in question deal, *inter alia*, with elementary geometrical considerations relating to the parabola and funicular polygons. The next portion consists of Huyghens's three books entitled "De iis quæ liquido supernantant" (1650), forming a collection of applications of the principle of Archimedes to floating bodies of simple shapes. A number of geometrical problems dated 1650 follow, and the volume concludes with the "Theoremata de quadratura hyperboles, ellipsis, et circuli ex dato portionum gravitatis centro" (1651). The volume is well got up, and forms an interesting contribution to the history of mathematics.

The General Characters of the Proteins. By Dr. S. B. Schryver. Pp. x+86. (London: Longmans, Green and Co., 1909.) Price 2s. 6d. net.

THIS is another of the series of monographs on biochemistry which are being issued by Messrs. Longmans under the editorship of Drs. Hopkins and Aders Plimmer. The previous monographs have been already noticed in these columns, and two of these dealt with the proteins from the more strictly chemical point of view. Dr. Schryver now adds another chapter to, and by no means exhausts, this large subject. The first section deals with the physical properties of the proteins (solubilities, crystallisation, heat coagulation, rotatory power, electrical conductivity, and so forth); the second with their general chemical characters (tests, distribution of nitrogen, compounds with acids, bases, halogens, &c.); and the third with the precipitin reaction, which is commonly known as the biological test.

The whole is treated in a technical but clear manner; references are given to the authorities quoted, and the booklet will prove a useful addition to the library of the physiologist, and should be found in every laboratory devoted to biochemical research.

W. D. H.

LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

The Gravitative Pull upon the Moon.

THE error made by Mr. McLennan in NATURE of May 6, p. 276, is a curious one, which may perhaps be made more often than we are aware of, and therefore is worth correcting.

It is true that gravitational pull and centrifugal force both decrease as square of distance increases, each with its own cause of decrease, so as to remain equal and opposite; but then the two causes of decrease are not to be piled on to one of those forces! That is the error.