

a true man, was sent to the scaffold by the Parisian mob, led by bigoted 'liberals' and atheists, with the sneer that the Republic had no need of *savants*. As to Priestley, who had devoted his life to science and to every good work among his fellow men, the Birmingham mob, favored by the Anglican clergymen who harangued them as 'fellow-churchmen,' wrecked his house, destroyed his library, philosophical instruments, and papers containing the results of long years of scientific research, drove him into exile, and would have murdered him if they could have laid their hands upon him."

With this quotation our notice of Dr. White's scholarly and fruitful work may appropriately come to a close. Let us only add that the first martyr to truth was the victim of a mob who hated to hear his teaching. The martyrdom of Socrates occurred four hundred years before the appearance of that unique personality who is the central figure of the dogmatic theology of Christendom.

J. G. SCHURMAN.

CORNELL UNIVERSITY.

Navigation and Nautical Astronomy. By F. C. STEBBING, M. A., Chaplain and Naval Instructor, R. N. Macmillan & Co., London and New York. 1896. 1 vol., 8vo, 328 pp. Price, \$2.75.

This volume contains a complete course in all the necessary subjects of modern navigation. It may be recommended to those who have to acquire a knowledge of the theory and practice of the calculations that are required in the navigation of ships. By incorporating the necessary part of the Nautical Almanac for 1895 and referring the examples which are to be worked out to the data there tabulated, the author has overcome, in an original and effective manner, one of the chief obstacles which students of astronomical navigation universally experience in gaining a knowledge of the intelligent use of the data contained in the Almanac.

The book is also to be commended for the large number of useful examples and problems which accompany each division of the subject.

Where necessary, the methods are modernized so as to treat, for change of geographical

position during the period of observation, the observations that may be made on board the swift moving vessels of the present day.

It has probably been overlooked that the directions given on page 54 for measuring the distance between two points on a Mercator chart will not generally apply. "The distance is found (nearly) by transferring the interval between the two positions to the graduated meridian, as nearly as possible opposite to the positions, *i. e.*, as much below the more southern as above the more northern; this space turned into minutes is the distance required." This method fails in most cases in which the line to be measured lies far from the middle of the chart, because when the interval is transferred to the graduated meridian one end or the other is likely to fall outside of the border.

Mention is not made of the generally applicable method of taking a small number of divisions of the graduated meridian, near the middle latitude of the line to be measured, between the points of a pair of dividers, and stepping this interval along the line to be measured.

In definition No. 8 it is stated that "A nautical mile is equal to the mean length of a minute of latitude, and is reckoned as 6080 feet." The actual mean length of a minute of latitude of the terrestrial spheroid computed upon the elements of the spheroid assigned by Bessel is 6076.23 feet, and upon the later and more perfect values assigned by Clarke, 6076.82 feet. The length of the nautical mile, or Admiralty knot, which is 6080 feet, corresponds more nearly to one-sixtieth part of the length of a degree of a great circle of a sphere whose surface is equal in area to the surface of the earth. This length is 6080.27 feet.

G. W. LITTLEHALES.

A-Birding on a Bronco. By FLORENCE A. MERIAM. Houghton Mifflin & Co., Boston and New York. 16°, illustrated. Price, \$1.25.

This volume is the result of the studies of two seasons in southern California. About sixty species of birds are spoken of, and with many we become quite well acquainted as we watch their nesting ways through the eyes of the sympathetic bird lover. It has also the novel feature of studying birds, not only with an opera

glass, but from the back of a bronco with ideas and ways of his own. The first chapter charmingly describes the valley in which the observations were made, and the bronco who shared the studies. The second, under the name of 'The Little Lover' tells the captivating tale of a pair of Western House Wrens, from the building of the nest to the departure of the little brood. The third introduces us to a bewitching bit of featherhood—the Blue-Gray Gnat-catcher, and rehearses the tragedy that befell the nest. And so it goes on, presenting to us in every chapter a fresh group of birds, in new and always interesting situations. At one time there is a pair of orphaned Woodpeckers to bring up by hand, and at another the vicissitudes of home-making in the Bush-Tit family, cousins of our Chickadee and 'little gray balls with long tails,' as the author calls them. On one page we read of the ups and down in life of a pair of Vireos, on another the efforts of the author to assist the Titmice in nest-building. Rattlesnakes and Burrowing Owls, Jackrabbits and Coyotes appear here and there, and in fact the local color is so strong that the reader is fairly transported to that land of sunshine.

The whole book is delightfully written and most fascinating in interest, and the reader has the added pleasure of knowing that every statement is to be depended upon; there is no dressing-up of incidents or intensifying of situations for purposes of sensationalism. It is an honest and faithful chronicle of the delights of bird study without a gun, in a region unfamiliar to most of us, and it is a most valuable book to place in the hands of a young person, boy or girl. It is well illustrated with cuts that really illustrate, not only characteristic drawings of the birds themselves, but photographs of the valley with the trees and bushes in which they dwell.

OLIVE THORNE MILLER.

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON. 206TH MEETING, SATURDAY, NOVEMBER 21ST.

MR. FREDERICK V. COVILLE exhibited a sinew-backed Modoc bow, made of the Western yew, saying that, although the wood was formerly in considerable demand among the In-

dians, he was not aware that it was used for any economical purpose.

Mr. Theo. Holm showed some old books in which the first attempts were made to demonstrate the presence of two sexes in flowers, viz., De la Croix's 'Le mariage des fleurs (Paris, 1727);' Vaillant: 'Sermo de structura florum (Leyden, 1728);' and Sprengel's illustrious work, 'Das entdeckte Geheimniss der Natur (1793).' The title page of De la Croix's work showed a most curious representation of the sheep plant (now known as *Raoulia mamillaris*), of which the speaker exhibited a photographic reproduction from nature, published in Goebel's 'Pflanzenbiologische Schilderungen.' Mr. Holm then explained the Latin suffix, 'aster, astra, astrum.' Certain authors have recently made new names, composed of individual names in connection with this suffix, erroneously supposing 'aster,' as thus used, to mean a star. Pliny and other ancient authors, besides some of much later date, used the suffix only to signify a genus which looks like another one, but which is of inferior quality, aspect, odor, taste, etc. Pliny says, for instance, that the olive tree (*Olea*) when growing wild is an *Oleastrum*: "In deteriora mutantur, ex olea in oleastrum." *Mentastrum*, *Lilliastrum*, etc., are additional examples.

Mr. Gilbert H. Hicks presented a paper on the 'Mildews' (*Erysipheæ*) of Michigan, as a contribution to the geographical distribution of fungi. Thirty-one species of this family were accredited to Michigan, as follows: *Sphaerotheca*, 7; *Erysiphe*, 5; *Uncinula*, 6; *Phyllactinia*, 1; *Podosphaera*, 2; *Microsphaera*, 10. One new species, a *Sphaerotheca*, was described and illustrated with specimens and photographs.

Under the title of *The Inflorescence of the Junaceæ* Mr. Frederick V. Coville gave a resumé of the present knowledge of the subject, showing that two distinct types of inflorescence occur in the family, one made up of terminal flowers, forming a cymose inflorescence, the other made up of lateral flowers, forming a paniculate inflorescence. Both types pass into a variety of minor forms.

Mr. Theo. Holm read a paper on the *Alpine flora of Pike's Peak and Gray's Peak, Colorado*. He exhibited specimens collected at an altitude