

a new work is unnecessary unless the author has new material to present or can place before the reader the old facts in a novel and interesting form. Judged on these lines, this book of Mr. Serviss is wholly unnecessary: it presents old material in a stereotyped, uninteresting and unattractive form. The explanations of many of the motions of the solar system are obscure, and fail to give the reader an adequate understanding of the underlying principles involved.

The book contains many illustrations, but the pictures in most cases bear no relation to the accompanying text. Photographs of the surface of the moon are scattered through the chapter devoted to definitions and explanations of such astronomical terms as horizon, zenith, altitude and azimuth; while amid the pages devoted to a description of the moon appear photographs of various nebulae.

CHARLES LANE POOR

A Beginner's Star-book. By KELVIN MCKEADY. G. P. Putnam's Sons. 1912. Illustrated. Pp. vii + 148.

This little book is a beautifully printed and illustrated guide to the stars and star groups. The star charts and key maps, intended as guides for the amateur observer, are arranged on a somewhat novel plan. For each season of the year two charts are printed, one showing the sky as the observer faces the south, the other the sky as the observer faces the north. This undoubtedly facilitates the finding of those stars situated either directly north or south and not too high above the horizon. But the charts are rather confusing when the star one seeks to locate is nearly overhead, or far to the east or west.

The illustrations, showing the principal nebulae and star groups of the heavens, are from photographs taken at the Yerkes Observatory, and are wonderful reproductions and triumphs of the printer's art. As a whole, the book is admirably adapted for its purpose, and should interest many in the study of the heavens.

CHARLES LANE POOR

SPECIAL ARTICLES

UROPHLYCTIS ALFALFÆ, A FUNGUS DISEASE OF ALFALFA OCCURRING IN OREGON

EARLY in the year 1910 the writer noted the occurrence of a crown gall disease of alfalfa in the Rogue River Valley near Medford, Oregon, but, on account of other pressing work, the character of the disease was not investigated until later. However, during 1911, owing to the fact that the disease began to show rather seriously in many of the large alfalfa fields, an investigation was begun and considerable field and laboratory work was done. An examination of a large number of fields with plants from two to seven years of age showed large areas where the plants had died, or where the growth had become very weak. On examining the plants within these areas, it was found that the crown and part of the stems just above the crowns were badly infected with numerous galls, varying from an eighth of an inch or less to sometimes four inches in diameter. These galls are much warted externally, and more often a large-appearing gall is made up of a number of smaller galls which have become united. Very rarely were there any galls found on the root system, and none at more than six inches below the surface of the ground as the plants stood in the field. The disease seems to affect the shoots or stems as well as the crowns and roots, and many specimens were found where the galls covered the stems fully five or six inches above the crowns. In the field, diseased plants usually show a very roughened crown from which only weak, chlorotic stems arise, the leaflets also being very small and lacking the normal green color. In the few references which the writer has had the opportunity to see, and which are cited below, it has been stated that the fungus was observed to be most destructive to plants on damp ground. My investigations have shown that this is not true. It has been found that even in the best drained sandy loam and gravel soils of this district (Rogue River Valley) the disease is quite as serious as in the heavy, poorly drained, "sticky" soils. It has been deter-