southern. It would go hard with a student if in this broad field he could not find a word somewhat analogous in meaning to any other word in any other language; particularly were the student satisfied as easily as Mr. Greg. For instance, among his "accordances" there are plenty of instances of analogies like the following: Accadian, *shuku*, wheat, American, *mays*, maize; Accadian, *ka*, life, American, *ak*, water; Hebrew, *ben*, son, American, *hua*, son; Thibetan, *sna*, to breathe, American, *cenka*, noise; Indo-Chinese, *petan*, bird, American, *pa-hue*, to fly, etc. Thousands of his "accordances" are no closer than these.

But the unscientific spirit of the book is only too painfully apparent throughout. All such mere phonetic similarities, even where they are real and close, are of absolutely no value and prove nothing whatever concerning the relationship of linguistic stocks. This can only be demonstrated by studying the history and growth of a language, tracing its development and the influences to which it has been subjected, ascertaining the evolution of its grammatical forms and categories, separating the original elements from grafts and accretions, and confining comparisons to the former exclusively, and then only in the forms which existed at the earliest ascertainable epoch. Any such method as that adopted by Mr. Greg, in which these elements of linguistic growth are omitted, and even in which identity of alphabetic value is not attempted, is wholly valueless; and it is most unfortunate that all writers on linguistics have not been educated to recognize this fundamental principle of research.

An Atlas of Astronomy. By SIR ROBERT STAWELL BALL, LL.D., F.R.S. New York, D. Appleton & Co.

IN this work Sir Robert Ball has added a handy companion to his "Star Land." The atlas contains a series of seventy-two plates explanatory of the sun, moon, major planets, and fixed stars. The object of the atlas is to put into a convenient form, for the amateur astronomer, those data that will interest in a study of the evening sky. The author has in the introduction given the usual definitions of the coördinates of the position of a heavenly body as seen projected upon the celestial vault. A very neat explanation of the manner in which the orbit of a binary star is computed, is given, and as the process is so simple young astronomers will find in the construction of the orbits of the hundreds of binary stars very interesting instruction. The lunar maps, although upon a small scale, are very complete, giving as they do a representation of some part of the moon's surface throughout the whole lunation. A good selection of telescopic objects, such as interesting double stars, nebulæ, and rich star clusters is also given. The name of each object and its position in the sky are given as well as a short explanatory note describing the object. We note that some of the explanations given by the author are a little abstruse. On page 2, in describing the path of a planet, the words ellipse and orbit seemed to be woefully mixed up, so that it is difficult to follow the meaning of the author. For example, we have the statement that "the line *PA* through the two foci is the axis major of the ellipse. This is immediately followed by the statement that "it is bisected in *O* at the centre of the orbit." An orbit and an ellipse are not the same by any means, and should never be considered as such. A few lines following we have the statement that "the point *P*, nearest the sun, is the perihelion of the orbit. We certainly fail to see the truth of that statement. We should say that *P* was the perihelion point of the object moving in the orbit. The same criticism applies to the point of aphelion. Again, we must question the statement that "the time that the planet takes to go around its orbit is the periodic time." We were not aware that a planet went around its orbit. If it does, what is the name of the path in which the planet itself is moving? Upon the whole, the work has been neatly arranged, and the publishers have made it attractive both in style of printing and in neatness of binding. We would recommend the book to those who are seeking for some popular work that has in a handy form the interesting points in astronomy.

G. A. H.

CALENDAR OF SOCIETIES.

Philosophical Society, Washington.

Apr. 29.—Cleveland Abbe, Measurements of the Growth of Plants with the Auxanometer; Henry Farquhar, The Price of Silver; M. H. Doolittle, Is there an Objective Reality?

Appalachian Mountain Club, Boston.

Apr. 29.—Charles M. Skinner, Across British America.

May 3.—Lemuel C. Barnes, Mount Hermon in April; Charles C. Hall, The Shawangunk Mountains.

Society of Natural History, Boston.

May 3.—R. T. Jackson, Notes on the Development of Palms.

Royal Meteorological Society, London, England.

Apr. 19.—"The Direction of the Wind over the British Isles, 1876–80," by Mr. F. C. Bayard, F.R. Met. Soc. This is a reduction on a uniform plan of the observations made twice a day, mostly at 9 A.M. and 9 P.M., at seventy stations during the lustrum 1876–80, and the results are given in tables of monthly and yearly percentages. "Notes on Two Photographs of Lightning Taken at Sydney Observatory, Dec. 7, 1892," by Mr. H. C. Russell, F.R.S. These photographs were taken with a ½-plate view-lens, mounted in a whole-plate camera, and, as a matter of course, there is some distortion at the edges. Both photographs show the gas-lights in the streets as white specks, the specks being circular in the centre and crescent-shaped in other parts of the plate, owing to distortion. The lightning-flashes are also distorted. Mr. Russell believes that this distortion may account for the so-called "ribbon" flashes which are seen in many photographs of lightning. He has also made some measurements of the length and distance of the flashes, and of the intensity of the light. "Notes on Lightning-Discharges in the Neighborhood of Bristol, 1892," by Dr. E. H. Cook. The author gives some particulars concerning two trees in Tyntesfield Park which were struck by lightning, one on June 1 and the other on July 18, and also some notes concerning a flagstaff on the summit of Brandon Hill, which was struck on Oct. 6. "Constructive Errors in Some Hygrometers," by Mr. W. W. Midgley, F.R. Met. Soc. The author, in making an investigation into the hygrometrical condition of a number of cotton mills in the Bolton district, found that the mounting of the thermometers and the position of the water receptacle did not by any means conform to the regulations of the Royal Meteorological Society, and were so arranged that they gave the humidity results much too high. The "Cotton Factories Act" of 1889 prescribes the maximum weight of vapor per cubic foot of air at certain temperatures; and the author points out that, if the instruments for determining the amount present in the mills have an error of 20 per cent against the interests of the manufacturer, it is necessary that the makers of the mill hygrometers should adopt the Royal Meteorological Society's pattern for the purpose.