while Prof. Young's observations on the sun, now fifteen years old, is the latest information we get in the appendixes on any solar matter, English and foreign work being ignored with a magnificent impartiality. In the same manner Vogel's work on the spectra of stars, the most extensive which has been accomplished by any one single individual up to this time, is also passed over, as is also Birmingham's work on the red stars.

We give these as instances of the treatment adopted. No doubt, had the initial idea of the book been carried out in its entirety by the insertion of the most important parts of these memoirs, the size of the volume would have been greatly increased, and this perhaps may be one reason for the violently selective treatment adopted; but it may be urged on the other hand that the value of the book would have been increased much more than its size, and further, that space might easily have been gained for some of the best modern work by the omission of those papers which, as we have said before, are now purely of antiquarian interest.

There was one feature in the third edition which we also regret very much to see dropped in the present one. This was a bibliography running over twenty pages, in perhaps its most convenient form, namely, a list of authors and a complete reference to their memoirs, arranged under the larger groupings of the subject-matter.

Trigonometry for Beginners, as far as the Solution of Triangles. By the Rev. J. B. Lock, M.A., Senior Fellow of Gonville and Caius College. (London: Macmillan and Co., 1886.)

THIS book covers exactly the same ground as Pinkerton's, which we noticed in NATURE, vol. xxxi. p. 148. The two have many good points in common, and we should be well satisfied to use either of them as a text-book. Mr. Lock's great advantage is preceptorial skill in arrangement and exposition. On this score he deserves much credit indeed. There are very few points on which it is possible to suggest improvement. The retention of the expression "circular measure" in all its former importance, notwithstanding the introduction and constant use of the term "radian," is regrettable but not of much consequence: the mode, however, which he employs for indicating the word "radian," *e.g.* writing π^c for π radians, is most unfortunate, and we should hope altogether unacceptable. It is surprising too to find so skilled a teacher following the multitude in condescending to recognise those unnecessary nuisances, "tabular logarithmic sines," &c. Their existence, Mr. Lock says, is due to a typographic difficulty—a statement we hesitate to give assent to; but, be their history what it may, they serve no purpose nowadays whatever, except to roughen the learner's path. Writers require to give them a foolish name and a special symbol, to alter the formulæ for solution, and to burden the learner with additional cautions,—and all for less than nothing. It seems almost malicious indeed to force on a "beginner" such gratuitous absurdities as "natural sines," "logarithmic sines," and "tabular logarithmic sines," when the entities to be dealt with are simply *sines* and *logarithms of sines*. If Mr. Lock in a succeeding edition could see his way to inaugurate the necessary reform here, many teachers would be grateful to him.

The Apparent Movements of the Planets and the Principal Astronomical Phenomena for the Year 1886. Illustrated with Charts showing the Paths of the Eleven Principal Planets among the Stars. By William Peck, F.R.A.S. (Edinburgh: Archibald and Peck, 1886)

BEGINNERS in astronomy will find this little compilation useful. Just the kind of information is brought together in it which persons interested, though not learned, in celestial phenomena want to be supplied with Technical language, too, is as much as possible avoided, while sufficient exactness for the purpose in view is usually preserved. Not, however, invariably; the statements regarding the two solar eclipses visible in 1886 are so loose as to be misleading. Eleven miniature maps, showing the paths through the constellations during the present year of seven primary and four minor planets, are neatly executed, and ought to prove acceptable to casual observers. Exception must be taken to the introductory assertion that Copernicus swept away all the "complicated machinery of the heavens." His reform of the Ptolemaic system was by no means so complete as Mr. Peck's expression implies. The retention by the Frauenburg astronomer of the old hypothesis of equable circular motion necessitated, in fact, the employment still of no less than thirty-four circles, by which to make plain, as he said, "the entire structure of the heavens"—that is, the revolutions of the moon and of the six known planets.

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. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.*]

An Earthquake Invention

IN NATURE of July 2 last, p. 213, I was accused by Prof. Piazzi-Smyth and Mr. D. A. Stevenson of having attempted to appropriate an invention of Mr. David Stevenson. The invention referred to was the joint introduced by Mr. Stevenson beneath the lamp-tables in certain lighthouses in this country.

In my reply (NATURE, vol. xxxii. p. 573) I pointed out the fact that the aseismatic joint had been independently invented by several investigators of earthquake phenomena, and so far as I was aware Mr. Mallet had appeared to have the prior claim to this invention. My reason for attributing the invention to Mr. Mallet is that when speaking of Japanese lighthouses he says: "I was consulted by Mr. Stevenson as to the general principles to be observed, and these edifices have been constructed so that they are presumedly proof against the most violent shocks likely to visit Japan; not perhaps upon the best possible plan, but upon such as is truly based upon the principles I have developed" (Palmieri's "Vesuvius," p. 43). As the aseismatic joints were portions of the lighthouses especially designed to render them proof against earthquakes, I naturally assumed that Mr. Mallet might be the first inventor of the ball-and-plate joint.

The only occasion on which I have posed as *the* author of the aseismatic joint in question, was when Messrs. Stevenson and Smyth promoted me to that *quasi*-enviable position.

Had these gentlemen recognised the fact that they were only reading a *brief note* about ball-and-plate joints, intercalated in a collection of notes on other subjects, and had they been well acquainted with the recent literature relating to aseismatic tables, they would certainly have refrained from the objectionable accusations made on July 2.

On *more than one* occasion I have referred to Mr. Stevenson's work in Japan. As an example of such a reference, Messrs. Stevenson and Smyth may turn to the *Times* of May 26—*a date which it will be observed is prior to the date of their unwarrantable attack*. In that paper there is a long letter on "Buildings and Earthquakes" signed with my name. When speaking of my house on shot, I there say, "*This experiment was very similar to one carried out by Mr. David Stevenson with regard to the lamp-tables in several of the lighthouses on the coast of Japan.* For several reasons, among which were the movements produced by wind, I abandoned the balls, and now have my house resting at each of its piers upon a handful of cast-iron shot. These shot, which are about the size of buckshot, have so increased the frictional resistance to rolling, that the house is practically astatic, and the motion in the house is in most earthquakes only about one-tenth of what it is outside."

I make especial reference to the *Times*, first because it is a