

## OUR BOOK SHELF

*Further Researches in Mathematical Science, embracing the Appendix of "The Two Discoveries."* By the author of "The Two Discoveries." (Clement Pine, Taunton Road, Bridgwater, 1875.)

OUR readers may ask, who is the author of "The Two Discoveries," and what are the Discoveries? An advertisement informs us that Mr. Clement Pine himself is the former, and that the subjects of "The Two Discoveries" are "The Mathematical Discovery, the Spiritual Telegraph, Astronomy, Cause of the Changes of the Seasons, Botany, Capillary Attraction, or the Principle of Growth; Religion, Progression, Scenery in the Spirit Realm, &c., and a variety of other topics." A suggestive list! We shall extract a *morceau* here and there which will indicate the nature of the present pamphlet. There are "important discoveries in a science in which very slight advances have been made since its foundation was laid by Euclid." We commend this to the "Improvement of Geometrical Teaching Association." To his scholastic ignorance and to his loss of sight, Mr. Pine attributes the fact of his attention having been turned to these subjects and of his having hit upon shorter, simpler, and more effectual modes of obtaining certain results.

After a personal narrative, he tells us he bought a guitar. "The guitar having only six strings to perform a melody which may require sixteen whole tones, besides semi-tones, to be effected by shortening the strings by fingering, I had now a fair field open for my calculations. So I conceived a musical instrument of sixteen strings similar to the guitar, which would require no shortening of the strings by fingering, but which could be played straight ahead, each string representing a different note, like the harp. Now, all my stock-in-trade in mathematical science was a knowledge of the properties of the right-angled triangle, which, connected with the rule of proportion known as the Rule of Three in arithmetic, seemed like a magic key to unlock the mysteries connected with geometry and trigonometry." He then dwells on the properties of the right-angled triangle. The especial property is the discovery imputed to Pythagoras. This he expects is of "greater value than any other axiom in mathematics." He simplifies "this simple axiom, and if you want it any plainer, the only way is to set your own brains to work." With his Minstrel (the musical instrument) he has plenty of amusement. "I would be so absorbed in calculating and committing the numbers arrived at to memory as to be quite unconscious I had lost my sight. The outer world was invisible, but the inner world of the spirit was transparent." He then comes to his main point, viz., the true mode of obtaining the distances of remote objects by observation. "My mind must have been occupied on this theorem for five or six years, and it was not until a year after the recovery of the sight of one eye that I discovered the principle. At length it came to my mind like a flash of lightning, first to find the correspondence of the circle to the square; and then to obtain the distance by the proportion of the parallax (*sic*) to the length of the square for a divisor, and the length of the base line measured or obtained as the multiplier. . . . The principle itself is perfect, and the approximation to perfection in its application depends altogether on the comparative perfection of the instrument used and of the observations made."

There are two diagrams and long descriptions. We have preferred to let our author speak for himself, and so to show that if he is not affected with the *morbus cyclometricus*, the diagnosis points to a disease nearly allied to it. Further, we have hardly dared to discuss the pamphlet in other fashion on account of the paragraphs on p. 12, prefaced with the remark, "But what is to come will startle you." "I have been receiving from

my honoured father in the Spirit Realm, John Pine, senior, some two dozen essays on philosophical subjects. He was giving his views on religion in very forcible language, and thinking I was becoming too excited, he made a sudden change to trigonometry, and then referred to my diagrams, and the importance of my discovery in mathematics; and that it was my duty to lay it before the world. I said it seemed to me very complete for terrestrial observations, but I was not aware that it would apply to astronomy. He remarked that it was equally applicable to astronomical as terrestrial observations; and he insisted that I should continue my researches on the subject. I have taken his advice, and have continued my mental researches; and shall now present them for public scrutiny." His father further states: "Two years ago, or more, when you used to be showing them to —, I was with you all the time when you were studying on the subject, and am better acquainted with the diagrams than you are yourself." With the announcement of this "Imprimatur" we close our notice of this singular farrago.

*Notes on Forestry.* By C. F. Amery, Deputy Conservator, N.W. Provinces, India. Pp. 119. (London: Trübner and Co.)

THIS is a little book written by a forest officer for the benefit of those Englishmen who, having been trained in the schools of forestry in France and Germany, require a convenient handbook written in their mother tongue to guide them in their future operations in forest work. Bulky books in the languages of the two countries just alluded to already exist, but these, as the author says, deal so largely in details that the student has frequently to wade through a great mass of matter before he can get a clear view of the individual facts he is specially in search of, or of the broad general principles which govern forest administration. Considering the number of educated and intelligent men now employed in the Forest Department of India, we might suppose that some would be tempted to record their experience for the benefit of those who may be working in the same cause. Dr. Brandis's "Forest Flora" is the first trustworthy work devoted to the scientific and economic aspects of the Indian forests, but besides a knowledge of the trees themselves the practical forester requires to know more than a little about the planting and thinning of trees, the transport and measurement of timber, &c., and it is upon these matters that Mr. Amery's "Notes" deal. He points out that Nature's method to foster the growth of the young seedlings is to allow the admission of sufficient light and air. The practice prevailing in Germany is to thin out the young plants at first only lightly to assist germination, then to admit more light to encourage healthy development. "The period between the first thinning and final clearing varies from ten to thirty years. On the plains of India, such is the rapid growth of some of the trees in their earlier stages as compared with the rate of growth in Europe, that it will probably not be desirable to extend the period beyond two or three years; but this difference of conditions does not affect the principle, which is the admission of as much light and no more than is necessary to the well-being of the young crop at every stage." The seedlings of some of the finest timber trees are of so delicate a nature that they have not power to struggle through any kind of undergrowth, even through rank grass: to overcome these difficulties it is recommended that in ordinary grass land the sods should be removed and inverted grass to grass, and the seeds sown on the inverted sod, which should be from five to six inches thick. The advantages of this system are, that the seedling plants are elevated a few inches above the surrounding soil, so that they have no foes to contend with in the early stages of their growth. From these remarks it will be seen that the book is entirely practical, and will, we have no doubt, be consulted by young foresters.

J. R. J.