

elegant solutions which were constantly being given. We have the number for October, 1862, before us, in which are Questions 1312 to 1320 proposed under six different names; we turn to the number for the current month, and the questions range from 5387 to 5419 from as many individual proposers, whose names are given. Here is evidence that a want has been met, and that there is considerable vitality in this direction; indeed, we may remark that this is the sole English periodical (since the demise of the *Lady's and Gentleman's Diary*) to which mathematicians can send high-class problems. University and college examinations swallow up a great deal of what is produced by residents at the universities, but these pages are open to all comers.

It soon occurred to us that here was a great mass of useful work being done and yet not producing the full benefit it might do if it were reproduced and published in a separate volume. The editor at once fell in with our views; indeed we found that the like idea had occurred to himself. There were, however, supposed pecuniary and other difficulties to encounter, but at last these were got over and the work, after one volume had been published, took its present form, which is now a conspicuous one on many a student's shelf. The fact that now their solutions would be treasured up in this more desirable shape seems soon to have led our foremost mathematicians to give in their adhesion, and as we run over the long list of contributors prefixed to the volume before us, there is hardly a name familiar to us which is not to be found there. France, Italy, and America also, are fairly represented. Ladies, too, there are, showing that

"the gay determinant
For (them) its rows exchanges,
While Hamilton's weird delta turned (∇)
O'er all the symbols ranges."

It says very much for the ability, in more directions than one, of the editor, that he has nursed the bantling which was handed over to his care more than sixteen years ago into the vigorous and lusty athlete of to-day. Nothing mathematical comes amiss to his net, but we may say that though the *Dii majores* roam about in their own special pastures, he has a marked predilection for the line taken up and well-worked out by Messrs. Woolhouse and Crofton, *i.e.*, of probability in its many applications.

It only remains to say that the "Reprint" is more than a reprint, for it contains about as much more original matter as appears in the monthly paper. Space is found for detached papers and notes, and for alternative solutions, often of equal, if not greater, interest, than the previously published matter.

There are occasional parenthetical notes—we think it should be more clearly indicated who is responsible for these, as they are often valuable ones.

The training the printers have gone through in getting out these solutions has placed them on a high level as printers of mathematics, and the volumes of this series reflect great credit upon them.

Cronicon Cientifico Popular. Por D. Emilio Huelin. Vol. I. (Madrid: 1877.)

We perused this volume with interest and pleasant surprise; we were pleased at finding it to be an excellent and well-written review of all new occurrences in the scientific world, and we were surprised to see such a work emanate from a country which hitherto has contributed but too small a share towards the progress and welfare of science. If we place Turkey at the head of the list of the most unscientific countries in Europe, Spain and Portugal certainly come second on that list; it is gratifying, therefore, to see some sign of improvement. We congratulate Senor Huelin on his valuable publication, which is one of the best of the kind that has yet come under our notice. The arrangement of the contents of the

volume is particularly good. The first few chapters are dedicated to generalities and the philosophy of sciences; some of them contain detailed lists of all scientific publications in the world. Then follow numerous chapters relating to the latest discoveries, inventions, theories, &c., on the domains of physics, chemistry, astronomy, meteorology, mineralogy, and geology; the chapters of the physical section alone numbering no less than eighteen, and those of the chemical section as many as twenty. Any occurrence at all worthy of record up to the end of last year is faithfully mentioned in the book. The second volume will contain the biological and mathematical sciences. We wish Senor Huelin and his publishers every success with their valuable addition to scientific literature.

Die Naturkräfte. Band 21. "Die Insekten" (1st part): "Der Organismus der Insekten." With 200 original Woodcuts. By Dr. Georg Mayr. (München: R. Oldenbourg, 1877.)

THE importance of an examination of the internal as well as the external anatomy of insects has unhappily not hitherto engaged the attention which it deserves at the hands of British entomologists. It is a fact which cannot be disputed that by far the greater portion of that energy which our country has exhibited in the investigation of this branch of natural science has been devoted to the mere founding of types, and in consequence but little light has been thrown upon the ever-increasing array of problems which puzzle the biologist.

In studying the affinities of insects it is quite as important, and in all probability more so, that the internal structure and the embryology of insects should be known, as the external characters and the metamorphoses; it is therefore with unmixed pleasure that we welcome the appearance of Dr. Mayr's admirable and ably-illustrated treatise.

It would be impossible here to give even an outline of the vast series of facts which the learned author has brought together, nothing relative to the organism of insects being regarded as too insignificant for careful and unwearied research; as an instance of the thoroughness of his labours we would especially call attention to his interesting observations on the action of the legs of insects when walking, a point which he seems thoroughly to have studied and which he has amply illustrated, although many students would probably have regarded it as a matter of little moment. In fine, the entire volume is most valuable, and should be esteemed as a necessary hand-book, not only by every entomologist, but by all who have the interests of natural science at heart.

A. G. B.

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 ensure the appearance even of communications containing interesting and novel facts.]

Glacial Geology of Orkney and Shetland

A RECENT visit to Orkney has brought forcibly before me certain points of the highest interest in modern glacial geology, upon which, I believe, the state of the surface deposits in these islands is calculated to throw considerable light.

I may premise that although I am perfectly well acquainted with all the usual glacial phenomena of the North of Scotland, as described in Geikie's and other works, I am not a sufficient practical geologist to speak with positive certainty, though I think I know enough of the subject to establish a *prima facie* case for what I have seen with my own eyes, and which I put forward in the hope that more competent observers may direct their