

The marine zoologist will find much valuable matter in the interesting reports by Messrs. Danielssen and Koren of the Asteridea, collected in the Norwegian North Atlantic Expedition. These papers are a *résumé* of the complete volume, which will appear later on as part of the Collective Report of the Expedition. Of the 20 genera and 40 species collected, 4 genera and 11 species are new to science. Numerous specimens of the *Pedicellaster* found in West Greenland, and described by Dr. Sladen as new, to which he gave the specific name of *Palæocrystallus*, is identified by Dr. Danielssen as *P. typicus* of Sars. Extreme importance attaches to the discovery and careful examination of a specimen of an asteroid—unfortunately the only one secured—which differs from others of the family by having a central dorsal appendage, generally erect, but capable of motion. This curious Echinoderm, to which Messrs. Danielssen and Koren give the name *Hyaster mirabilis*, is conjectured by them to represent a larval or developmental stage of the Crinoidea, and after a careful study of this stalk-like appendage they hazard the conjecture that further investigations may lead to the discovery that the Asteridea are in fact developed from the Crinoidea. Equally interesting, if less important, is the re-discovery of the Greenland “Cluster-polyt” of Ellis, the “*Zoophytum grönlandicum*” of Mylius. The specimens examined by these earlier naturalists have long disappeared, and for more than a hundred years no others were found. The *Challenger* Expedition brought back several forms of an *Umbellula*, one of which Prof. Kölliker considered to be of the same species as the lost specimens of Ellis and Mylius; the Norwegian naturalists are of opinion, however, that all the specimens found are mere varieties of *Umbellula encrinus*, to which they ascribe a wide geographical range.

In conclusion, while we desire strongly to recommend the *Nyt Magazin*, it may not be out of place to mention that several of the most interesting papers on local Norwegian geology are written in German, and that the highly important results of the recent Norwegian North Atlantic dredgings are given by Dr. Danielssen in English, under the title of a “Preliminary Report” of the Expedition. The magazine, which is under the joint editorship of Professors Kjerulf, Danielssen, Mohn, and Hiortdahl, is printed in the Latin type now so generally used in the Norwegian press, and is copiously illustrated by well-drawn woodcuts, and excellent plates of the animals described.

#### OUR BOOK SHELF

*Acta Mathematica.* (Stockholm. Various dates.)

THIS journal, which has already won for itself the reputation of being one of the leading mathematical journals, not of the North merely, but of the world, sprang into life at the end of 1882, is published at Stockholm, and has all along been under the able editorship of Prof. G. Mittag-Leffler, assisted by all the foremost mathematicians of Sweden, Norway, Denmark, and Finland. Its object is stated to be to gather and publish such mathematical works as contribute to the development of the science by the novelty either of the results obtained or of the methods employed.

The seven volumes which have been issued contain papers by some of the foremost Continental mathemati-

cians: the sole contribution, we believe, in English is furnished by an American writer, Mr. G. W. Hill, and is entitled “On the Part of the Motion of the Lunar Perigee which is a Function of the Mean Motion of the Sun and Moon” (this paper occurs in vol. viii., which is in course of publication). There are in all, in the complete volumes, 107 papers, in almost every department of the science.

It may be in the recollection of our readers that Oscar II., King of Sweden and Norway, who is styled “Special Protector of the Journal,” has instituted a great mathematical prize for an important discovery in higher analysis, the particulars of which have appeared in full detail in our columns (vol. xxxii. p. 302); the prize works are to be published in the *Acta*.

*The Methods of Glass-Blowing.* By W. A. Shenstone. (Rivingtons, 1886.)

NOT only the student who is entering, or has just entered, that mystic land of chemical research, but also the ordinary student of chemistry who wishes to be more than a mere beginner, or a book-chemist, will hail with great joy the appearance of this little book on glass-blowing. We have not many good professional glass-blowers in this country, and, as the author says, it is a difficult if not impossible thing to get any instruction in glass-blowing; and, as a result, the great bulk of chemical students are as dependent on the dealers in glass ware as the bulk of amateur photographers are on dry plates and other things in that connection.

Most students even in our hardest working laboratories have some time to spare in which they might practise some of the more useful and simple methods of making glass apparatus mentioned and described in this little book.

Apart from the immediate utility of being able to make one's glass apparatus in the laboratory, and the help it is in almost any form of chemical or physical research, it cannot fail to be also indirectly useful to a student on his transplantation to a works or the superintendence of some technical operation, and will give him what is so very desirable, in addition to that of the purely chemical manipulation of analysis, a feeling of confidence in overcoming mechanical difficulties.

In the introduction is a description of a suitable working-place, blow-pipe, and bellows—things which are seldom to be found fit to use in our laboratories—and the blow-pipe flames; after which the varieties of glass mostly used, and the actual operations involved in the construction of most glass apparatus, in which glass tubes are the main parts, are very plainly described, being also in many cases illustrated with diagrams of the different stages. The last chapter is devoted to “calibrating and graduating glass apparatus,” operations we think every student who gets as far as quantitative analysis should be able to perform in a decent manner.

We most thoroughly recommend this little book to students who intend to become chemists, and hope the proportion of those who can blow a respectable bulb will soon be increased. At present it is about 1 per cent.

#### 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.]

#### Two Hours with a “Subject Index”

THERE has appeared within the year, under the title of “A Subject-Index to the Modern Works added to the