

in 1621, but was re-detected, in its pristine brightness, by Domenico Cassini at Bologna in 1655. The news seems to have taken no less than three years to filter to the Low Countries. Golius, of Leyden, was one of the first to get hold of it, and he transmitted it to Boulliau, of Paris, who thereupon perceived, plainly enough, a brilliant star shining in the place of a usually telescopic one. As an example of mental inertia comparable to that afforded by Hevelius with regard to the Orion nebula, it is worth noting that the object had caught his eye twelve days previously, but without rousing his attention. He imparted to Huygens his conviction that the Milky Way "provided the material for such generations," among which he included comets; and judiciously wound up his speculations by urging the necessity for continued observation.

His correspondent had anticipated the recommendation. His interest in the "renaissance of the Swan" (as he termed it) is shown by various remarks; but a more formal essay on the subject, alluded to in a letter to the Sicilian astronomer Hodierna, has not been preserved. Huygens considered the star, on November 20, 1659, to have lost none of its lately-acquired brilliancy. Boulliau, however, had already noticed a diminution in *size*, though not in *lustre* (a distinction to which he evidently attached some importance), and on December 12 saw further symptoms of fading in its pale and languid aspect. From the decline which then set in, it has never completely recovered, but has remained, since the abortive maximum of 1665, undistinguished by conspicuous vicissitudes. "P Cygni," as Janson's star is called in modern nomenclature, now betrays peculiarity of constitution only by the bright hydrogen lines photographically discovered by Prof. Pickering in its spectrum.

Huygens's invention of the pendulum clock is a prominent topic in the correspondence before us. He was not without hope of solving, by its means, the ever-recurring problem of longitudes, "if only it would bear transport by sea"—a prudent qualification. Of curves and quadratures, telescopes and lenses, chronometry, meteorology, mechanics, the theory of numbers, much is said, showing the working of thought along these various lines of research. There is scarcely, in fact, a branch of scientific history which is not usefully illustrated by these valuable letters.

A. M. CLERKE.

THE ANATOMY OF THE HUMPBACK WHALE.

The Anatomy of the Humpback Whale (Megaptera longimana). By John Struthers, M.D. (Edinburgh: 1889.)

THERE is probably no order of Mammals which during the last twenty-five years has been more worked at than the Cetacea. The result has been that we now possess a valuable body of information on both the classification and anatomy of this most interesting group of animals. On the continent of Europe, the names of Eschricht, Reinhardt, Lilljeborg, Van Beneden, and Gervais stand out most prominently as authorities; whilst in this country Sir Richard Ower, Profs. Flower, Struthers, and Turner, Dr. Murie, and Prof. Macalister, have all written valuable memoirs which have added

largely to our knowledge of the whales. Through the combined labours of these anatomists the order has been rescued from the state of confusion into which it had been thrown by some systematic writers, who, by regarding almost every specimen stranded on our coasts as a new species, had introduced a complexity of nomenclature which was most puzzling.

The humpbacked whale, the anatomy of which forms the subject of Prof. Struthers's memoir, is, from its form and structure, one of the most interesting of the occasional visitors to our coasts. The number of specimens the capture of which has been recorded in British waters, prior to that of the specimen dissected by Dr. Struthers, was only three: viz. a female cast ashore near Newcastle in September 1829, and described by the late Dr. George Johnston; another female taken in 1863 in the estuary of the Dee, the skeleton of which is in the Derby Museum, Liverpool; and an adult towed into Wick Bay in March 1871, the skeleton of which was not preserved. This whale is, however, not uncommon in the North Atlantic, more especially off the coasts of Norway and Finmark, and in the seas of Iceland and Spitzbergen.

The specimen described in Prof. Struthers's memoir was seen in the Firth of Tay, in the month of December 1883. It was harpooned, but broke away from its captors, was ultimately found floating dead off Bervie, and was towed into Stonehaven Harbour on January 8, 1884. It is fortunate that it fell into the hands of so competent an anatomist and so enthusiastic a cetologist as the Aberdeen Professor. Thanks to his untiring energy and industry, he has furnished us with a monograph on the external characters, the skeletal anatomy, the muscular anatomy of the pectoral limbs, and the connections of the pelvic bones and rudimentary hind limbs of this animal, far more precise and detailed than had been given by any previous anatomist. He has added also greatly to the value of his description by instituting a comparison between the skeleton of Megaptera and that of *Balenoptera musculus*. The memoir will have to be studied by all cetologists who wish to have an exact knowledge of the anatomy of this great baleen whale.

OUR BOOK SHELF.

First Mathematical Course. Blackie's "Science Text-Books." (London: Blackie and Son, 1889.)

THIS little work, comprising arithmetic, algebra (as far as simple equations), and the first book of Euclid, is adapted to the requirements of the examinations of the Science and Art Department in mathematics (Subject V.), first stage. The more elementary parts of arithmetic have been briefly treated, as the pupil will have most probably reached fractions, but great attention has been paid to the examples, which are both numerous and judiciously chosen. The algebraical part is completed up to and includes simultaneous equations, and here, as in the arithmetical part, we have a great number of well-arranged examples, including those set for this stage in previous examinations. Part III. consists of the first book of Euclid with exercises on the various propositions. Preceding the answers to the examples is an appendix containing specimen examination papers set by the above-named Department. Teachers, who require a great number of easy examples on these three branches of mathematics, will find this book very useful.