

but the English group, owing to a priority of a few days in the date of the patent specification, succeeded in upholding their patent rights both in Great Britain and in Germany.

It appeared afterwards from the work of Harries on the ozonides of rubbers that so-called sodium rubbers were not identical with the rubbers obtained by simple heat polymerisation. They had, however, remarkably good properties as regards elasticity, etc., and Harries in a paper in the *Annalen* looked upon sodium butadiene rubber as being the best synthetic rubber produced. These rubbers were capable of being vulcanised like natural rubber, which improved their properties considerably, but the 6-carbon rubber, although made on a considerable scale in Germany during the War, did not possess the elasticity of its lower C₄ homologue and was very prone to undergo destruction by oxidation in air. On the other hand, a sample of sodium butadiene rubber recently examined after keeping for a period of thirteen to fourteen years was found to possess its original properties practically unimpaired.

The important question arises: Will synthetic rubber ever supplant the natural substance? This in the opinion of the writer of the present article is entirely a matter of price. Rubber can be produced on well-managed estates at about 8*d.* per pound. At the present artificial price of 1*s.* 8*d.* per pound synthetic rubber is bound to come shortly, and the probable source will be American petroleum.

Reverting to Dr. Schotz's book: it gives a clear and not too technical account of the art of making synthetic rubber as known to-day. It is fairly free from mistakes, but some have been noticed. On p. 58 bauxite is classed as a hydrated iron compound. On p. 64 1:3 dimethyl butadiene should be 2:3. The book is somewhat marred by the introduction of plates, dealing with machinery for rubber manufacture, which have no connexion with the subject matter. On the whole, a very readable and interesting account is given of a very technical subject.

Our Bookshelf

British Museum (Natural History). Catalogue of the Machæridia (Turrilepas and its Allies) in the Department of Geology. By T. H. Withers. Pp. xv + 99 + 8 plates. (London: British Museum (Natural History), 1926.) 7*s.* 6*d.*

ON account of their sabre- or blade-shaped form, the name Machæridia is proposed for the group of Palæozoic fossils which comprises the genera *Lepidocoleus*, *Turrilepas*, *Deltacoleus*, and *Plumulites*. These genera are undoubtedly related to one another, but their systematic position has long been a matter of dispute. Although regarded by some authors as Mollusca

(Polyplacophora), Cystidea, Annelida, or Trilobita; they have usually been referred to the Cirripedia; and several writers have looked on them as the ancestors of the stalked barnacles of later times. This view, which is based largely on a comparison with the Chalk form *Stramentum* (*Loricula*), is shown by Withers to be untenable, since that genus is now known to be an aberrant type representing a specialised side-line of development from the scalpelliform barnacles, and further, none of the Palæozoic genera can be proved to be Cirripedia, the earliest undoubted representative of that group being found in the Rhætic beds.

In the Machæridia the shell apparently covered the whole of the soft parts of the animal; it consists of either two or four columns of plates and could open along the whole of the sharp edge, and the plates along the thick margin show muscle-scars indicating the presence of a series of transverse muscles. The fact that the plates in some genera consist of crystalline calcite and show a reticulate structure suggests relationship with the Echinoderma, while the imbrication of the plates and the character of their ornamentation may indicate a connexion with the Cystidea. In his preface to the volume, Dr. F. A. Bather shows that he is inclined to accept this view of the affinities of the Machæridia, and suggests that the *Heterostelea* and Machæridia are among the earliest offshoots of the echinoderm stem and differ from all other classes of echinoderms in not having had pentamerism and the other echinoderm features impressed on them during an ancestral period of fixation.

Although bearing the modest title of "Catalogue," this work is really of the nature of a monograph and deals in a thorough manner with all the species known. The eight plates are excellently reproduced in collotype from photographs by H. G. Herring.

The Wonder and the Glory of the Stars. By Dr. George Forbes. Pp. 221 + 16 plates. (London: Ernest Benn, Ltd., 1926.) 8*s.* 6*d.* net.

WE have much enjoyed reading Prof. Forbes's book, which consists largely of a selection of his numerous lectures delivered during the last twenty-two years and of related essays. The title is a true indication of the author's wish to convey something of his own enthusiasm for the wonders of the night sky accessible to all who care to look for them. Prof. Forbes has long been associated with astronomy, and he has watched its widening horizon from the early days of stellar spectroscopy and astronomical photography. A personal touch is conveyed to the reader by occasional reminiscences of men and events, including an account of a night spent by the author in 1871 at the Vatican Observatory with Secchi and his spectroscope, and impressions of meetings of the Royal Astronomical Society in 1926 which enter into the theme of the last chapter entitled "Fairy Tales by Astronomers."

As already indicated, the book lays no claim to being an elementary text-book of astronomy, but comprises a series of self-contained, yet interdependent articles, the popular nature of which is fully indicated by most of the titles—"Surprise Visitors among the