

Mr. Burns wholly misapprehends me in supposing me to believe that the heat enters the glacier at its lower end and travels upwards. A glacier receives its heat from the sun on its upper surface, and that heat must of course pass downwards from the surface to the bed of the glacier. In representing the downward motion of the molecules, it is true, I began by considering the lower molecule and passed upwards, but I never meant to convey the idea that the heat took that path. Mr. Burns appears also to misapprehend me in regard to the origin of "Crevasses." I need not, however, enter into these points, as the criticism relates wholly to my first and imperfect representation of the theory, so that it is of no importance whether his conclusions be correct or incorrect.

NOTICES OF MEMOIRS.

RECHERCHES SUR LES FOSSILES PALÉOZOÏQUES DE LA NOUVELLE-GALLES DU SUD (AUSTRALIE). Par L. G. DE KONINCK, A.M.
Texte pp. 140, 8vo.; Atlas pls. 4, 4to. (Bruxelles, 1876.)

IN this memoir we have presented to us one of those careful and comprehensive works for which the pen of Prof. de Koninck has become celebrated. The structure of the Palæozoic rocks of New South Wales is familiar to us through the writings of the Rev. W. B. Clarke, the late Samuel Stutchbury, William Keene, and others; but with the fauna of these old rocks our knowledge was of a very limited nature. There are, it is true, the fine memoirs of Messrs. Morris, McCoy, and Dana; but they comprehend only the fossils of the Carboniferous formation of New South Wales, and do not to any extent touch upon those of the Lower Palæozoic rocks. Under these circumstances the appearance of the present memoir is particularly acceptable.

Prof. de Koninck's studies lead him to the conclusion that Prof. McCoy's view, expressed in 1861, as to the general specific identity of the marine fauna of the whole world in the earlier portion of the Palæozoic epoch, is also applicable to the Devonian and Carboniferous.

As it is to be remarked in connexion with a large number of Indian and Chinese Carboniferous species, so with the Australian, they attain a size rarely equalled by their European or American representatives.

The memoir treats separately of the Devonian and Silurian forms respectively. Of the 59 Silurian species, 13 are considered by Prof. de Koninck to be new, and 8 doubtful. They are all of Upper Silurian type, and do not appear to differ in form and size from species of the same age in other quarters of the globe. The new species all belong to genera represented in Europe or America by closely allied forms. Two well-defined horizons are recognizable, a lower composed of argillaceous rocks, corresponding to the Upper Llandovery, and an upper of very hard quartzites, usually coloured red from the presence of oxide of iron, and white or grey crystalline limestone, corresponding to the Ludlow series. The species are nearly equally divided between the two groups, 32 oc-

curing in the lower or Upper Llandovery, and 27 in the upper or Ludlow group. In the former the fauna is almost exclusively Molluscan and Crustacean, whilst in the latter Corals and Crustacea chiefly abound.

Passing to the Devonian, we find that 67 species are described, of which 30 are considered as new, and have their analogues in European or American Devonian rocks, except four, *Archæocyathus? Clarkei*, de Kon.; *Billingsia alveolarei*, de Kon.; *Niso? Darwinii*, de Kon.; and *Mitchellia striatula*, de Kon. The Upper Devonian series is indicated by the presence of such species as *Strophalosia productoides*, Murchison; *Chonetes coronata*, Conrad; *Rhynchonella pleurodon*, Phill.; *Spirifer disjunctus*, Sow.; and *Aviculopecten Clarkei*, de Kon. The chief remaining forms, especially those from the black limestone of Yars, indicate a somewhat lower horizon than the preceding five species, but at the same time more recent than the horizon represented by *Calceola sandalina*, Lamk. Prof. de Koninck states that *Archæocyathus? Clarkei* appears to take, in Australia, the place occupied by *Receptaculites Neptuni*, Defr., in certain European Devonian beds, especially those of Belgium. Under the name of *Mitchellia* is described a new and interesting genus of the family *Buccinidæ*, in which the mouth is elongated and much contracted. The occurrence of this genus in conjunction with a species of *Niso*, usually considered as a Tertiary genus, are the only anomalies to be noticed in the composition of the New South Wales Devonian fauna, as compared with that of Europe.

To the Rev. W. B. Clarke, M.A., F.R.S., through whose almost unaided exertions this collection was placed in Prof. de Koninck's hands, Palæontology owes a deep debt of gratitude. R. E., Jun.

REVIEWS.

I.—EXPLORATION OF THE COLORADO RIVER OF THE WEST AND ITS TRIBUTARIES. Report to the Secretary of the Smithsonian Institution. By J. W. POWELL. 4to. pp. 292, with 80 Illustrations, a Map, and Sections. (Washington, Government Printing Office, 1875.)

THIS is a large and handsome quarto volume, unexceptionable as to printing, and adorned with a quantity of really excellent views on wood, taken apparently from photographs, which for artistic effect and execution are of a very high order: indeed many of them seem stamped with the grandeur of the scenes they represent; and some, reminding one forcibly of the weird style of Gustave Doré, exhibit strongly the power with which really good illustrations can convey and enhance the appreciation of Nature's grandest physico-geologic features.¹

The laborious operations of which Professor Powell's Report is the result were spread over the years 1869, 70, 71, and 72; so that

¹ To point this remark, we might allude to the sadly different impression produced by comparing the wood-cut illustrations of Mr. Drew's new book on Kashmir, published by Stanford, London. Has the talent for illustration forsaken us for America? Surely not.