

present state of knowledge and possible future methods of attack, on some of the main problems of crystal chemistry and molecular configuration, studies of protein structures, clay minerals and imperfect structures. There was also an exhibition of commercial apparatus and books of crystallographic interest. The first *World Directory of Crystallographers* containing information about over two thousand crystallographers from fifty-four nations were also published and was on sale at the Montreal Meeting.

The closing General Assembly of the Union met on the 17th in Moyse Hall to organize and discuss the future program of the Union, and co-ordinate its various activities. The new Executive Committee elected is as follows:

J. Wyart (France) (*President*); N. V. Belov (U.S.S.R.) and P. P. Ewald (U.S.A.) (*Vice-Presidents*); D. W. Smits (Netherlands), (*General Secretary*); R. W. G. Wyckoff (U.S.A.); O. C. A. Bastriansen (Norway); A. Guinier (France); F. H. Laves (Switzerland); C. H. MacGillavry (Netherlands); I. Nitta (Japan); and A. J. C. Wilson (U.K.).

The great success of the Conference could be attributed in a large measure to the Local Committee with Dr. W. H. Barnes (Canada), as its Chairman. By invitation of the Royal Society and the University of Cambridge, the next International Conference will be held at Cambridge, England, in August 1960.

GOPINATH KARTHA.

## NEW MISSING LINK DISCOVERED

**T**O Zoologists, the recently reported discovery by the Galathea Expedition of the extraordinary deep-sea mollusk *Neopilina galathea* (H. Lemche, *Nature*, 23 February 1957), will seem even more incredible than the famous discovery in recent times of *Latimeria*, the living coelacanth, even though the layman may see less of interest in the mollusk than in the fish. *Latimeria*, however, represents a group of fishes which survived into the Cretaceous period, and became extinct only some 70 to 90 million years ago; whereas the new-found mollusk represents a class that existed in the Cambrian to Devonian periods of the Paleozoic, and was supposed to have become extinct about 280 million years ago, when the coelacanths were just beginning to branch off as a special side-group of the other lobe-finned fishes (crossopterygians). *Latimeria*, moreover, seems to be a conventional sort of coelacanth, except for its salt-water habitat; but *Neopilina* is an obviously segmented mollusk, violating one of the general criteria by which mollusks are most readily known, their unsegmented body plan. *Neopilina*, of which 10 specimens and 3 additional shells were dredged up from a depth of 3,590 meters off the West Mexican Coast on 6 May 1952, has a fragile

shell somewhat resembling that of a limpet, but there the similarity to any gastropod ends. The fossils of the class had already given evidence of symmetrically arranged pairs of shell muscles. The living animal exhibits segmentation in other significant features as well. There are five pairs of auricles that receive blood from the gills, one pair of auricles for each of the pairs of comb-like gills (ctenidia). There are also paired excretory organs, nephridia, again one pair for each of the five segments of the mollusk's body. There may be other internal organs which are segmented in arrangement, but further study of the internal anatomy will be required to clarify such matters.

*Neopilina* represents a primitive form of mollusk intermediate between the amphineurans (chitons) and the cephalopods, but best placed, according to Lemche, in a distinct class, the Monoplacophora. Some of its fossil relatives which have even higher numbers of paired muscle scars on the inside of the shell may well have been the connecting links between the mollusks and the typically segmented annelid worms and arthropods. (*Science*, 1957, 126, p. 158.)