

## BOOK REVIEW

*Palaeontological Results of the Polish Antarctic Expeditions — Part I*. Edited by Andrzej Gaździcki. — *Palaeontologia Polonica*, no. 49 (168 pp., 53 text-figs and 44 pls). Warszawa—Kraków 1987.

*Palaeontologia Polonica*, no. 49. "*Palaeontological Results of the Polish Antarctic Expeditions — Part I*", presents the most recent published reports of Polish activities in the Antarctic. This volume represents the first of a new series of *Palaeontologia Polonica* devoted to Polish research activities in the Antarctic. Previous to this volume, Polish Antarctic research activities have been published for the most part in *Studia Geologica Polonica*, *Polish Polar Research* and in other European journals. As a consequence, it was difficult to keep abreast with Polish work in the Antarctic. This new series should make much easier for the scientific community to keep abreast with Polish Antarctic paleontological activity.

With the establishment of the Polish research station *H. Arctowski* in Admiralty Bay, King George Island (South Shetland Islands), the Polish Academy of Sciences instituted an active Antarctic research program. Most of the research activity has been focused on geological surveys on King George Island. Many new and unexpected discoveries have been made since the inception of the program in 1977. Data from the work on King George Island have added significant new understanding to the geologic history of the Antarctic Peninsula and have challenged a number of established ideas about the geological and glacial histories of the southern hemisphere.

This volume contains 10 papers including the preface ranging topics from glacial chronology to taxonomic descriptions of number of marine invertebrate groups. The two papers that are the most provocative Krzysztof Birkenmajer's Oligocene-Miocene glacial chronology (pp. 9—37), a summary of previous papers, and Cambrian microfossil from glacial erratics in the glacio-marine deposits by Ryszard Wrona (pp. 37—48). These two papers provide exciting and provocative data about the timing early Neogene glaciation in Antarctica and possible occurrence of Lower Cambrian rocks along the west side of the Antarctic Peninsula.

Birkenmajer's glacial chronology based on the sequence at Cape Melville indicates an earlier inception of glaciation than has been proposed by recent ODP drilling in the Weddell Sea. The reason for the lack of synchronicity is unclear at present, but the presence of glacio-marine sediments of middle Cenozoic age on King George Island is unequivocal. I have had the opportunity to personally examine the sequence at Cape Melville in 1981 and it is definitely of glacial marine origin and not debris flows as some have suggested. The only possible reason for the lack of synchronicity may be due to the radiometric dating of the dikes that have been intruded into the sequence, but this seems unlikely.

The Cambrian age of erratics in the Cape Melville Formation has been reported earlier (Morycowa, Rubinowski and Tokarski 1982; Wrona 1982), the question as to the source area of these erratics is still unclear. R. Wrona and earlier authors have suggested they may have been rafted from the Ellsworth, Pensacola or Shackleton ranges along the southern margin of the Weddell Sea. It is also possible that they may have come from, as yet, some unrecognized Cambrian sequence along the western side of the Antarctic Peninsula or Marie Byrd Land or that if the Cambrian rocks do occur in the Peninsula, they are currently concealed by ice. The occurrence of reworked Early Cretaceous belemnites and nannoplankton reported by Birkenmajer, Gaździcki, Pugaczewska and Wrona in this volume (pp. 50—62), presumably from the west side of the Antarctic Peninsula in the

glacial marine sediments at Cape Melville, would seem to support a source area for the Cambrian erratics on the Pacific side of the Peninsula.

The remainder of the papers in the volume describe a variety of groups of invertebrates that were collected principally from Cape Melville. The state of preservation of these invertebrates varies greatly. The homolodromiid crabs described by Förster, Gaździcki and Wrona (pp. 147—162) and the polychaete jaws by Szaniawski and Wrona (pp. 105—126) are exceptionally well preserved while the preservation of the gastropods, Karczewski (pp. 127—146), is unfortunately very poor. The amount of biogeographic data in each of these taxonomic papers reflects the quality of the material studied. Although poor preservation of some groups is a problem, these papers contain significant new data concerning the biotic history of Antarctica during the latter half of the Cenozoic and will be of great use to current and future southern hemisphere biogeographers.

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