

## Preface

A CONFERENCE ON ASTROBIOLOGY was held at Macquarie University in Sydney during July 2001. Much to the surprise of the organizers, led by Jeremy Bailey, it attracted 80 participants from Australia, New Zealand, Ireland, Spain and the USA. At the same time we were in the process of establishing the Australian Centre for Astrobiology (ACA), an Affiliate Member of NASA's Astrobiology Institute. The interest in the conference gave us a fillip, and the ACA was formally opened by Emeritus Professor Di Yerbury, Vice-Chancellor of Macquarie University, and Dr. Rose Grymes, Associate (now Deputy) Director of the NASA Astrobiology Institute, on the evening preceding the conference.

All participants in the conference were invited to submit manuscripts for publication, and a small sample is presented here. It is yet another demonstration, if any were needed, that this new interdisciplinary field is attractive to junior and senior scientists alike. Not that it is entirely new: "Geobiology", "geomicrobiology", "biogeochemistry", and the like have thrived for 40 years, and have existed for much longer than that in the work of a few visionaries. What is new is the strong link to planetary sciences and astronomy, though even here there are antecedents. If the history of another relatively new interdisciplinary field, biochemistry, is any indication, astrobiology has a bright future.

In this part of the world there has long been an interest in such research, as indicated for example by the establishment in Canberra in 1965 of the Baas Becking Geobiological Research Laboratory. In Australia we have a rich and well-studied record of the early history of life on Earth. Research on that record spans almost a century. We are custodians of the earliest convincing evidence

of life on Earth, in the Pilbara region of Western Australia, and home to the oldest known remnants of the early Earth, the zircons of Jack Hills and elsewhere, also in Western Australia.

Active sites of astrobiological interest abound in this region. The thermal springs of New Zealand are of outstanding microbiological and geochemical interest, and are being intensively studied. Shark Bay in Western Australia has long been a Mecca for scientists interested in microbial mats and stromatolites: It is a "must-see" for anyone wanting to interpret ancient stromatolites, with a diversity and abundance of these structures unmatched by any other site. Couple these attractions with numerous saline lakes, deep, hot artesian basins, submarine thermal springs, and access to the extreme environments of Antarctica, and it is clear that there is in Australasia a wealth of significant astrobiological sites, many as yet little studied. Add to that our access to the Southern skies and the research possibilities expand still further.

With the small populations of Australia and New Zealand (23.7 million total) coupled with a land area more than that of the 48 contiguous states of the USA there is only so much we can achieve alone. This presents special opportunities for collaborative research of benefit to all. This volume is but a small indication of those possibilities.

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