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Introduction

Marine Micropaleontology in China

Although Chinese studies of fusulinids started in the 1920s, nearly all other groups of microfossils were not studied until some 40 years ago when hydrocarbon prospecting in non-marine basins led to extensive studies on ostracodes and palynology. Since the mid-seventies, after the calamitous 'Cultural Revolution', the development of offshore exploration and of onshore hydrogeological surveys promoted study of foraminifera, ostracodes, nanofossils, and other groups of marine microfossils. Geological prospecting in Paleozoic carbonates stimulated Chinese paleontologists to study conodonts. The founding of the Micropaleontological Society of China in 1979 indicated the growth of the discipline. An editorial in *Marine Micropaleontology* then warmly commended the resurgence of micropaleontology in China (Haq, 1982). Micropaleontology in China culminated in the mid-eighties, and the number of Society members totalled 515 in 1984, of which 145 were engaged in Ostracoda, 88 in Conodonts, 77 in Fusulinida, 62 in Foraminifera (excluding fusulinids), 43 in Charophyta and so on. In the same year, the Society began issuing its journal *Acta Micropaleontologica Sinica*. Eleven years ago, the English volume *Marine Micropaleontology of China* (Wang et al., 1985) was well received by the world scientific community. *La Chine est réveillée*, began the review of this volume in a French journal.

What is the status of micropaleontology in China now? This Special Issue, conceived by Dr. Jere H. Lipps (Editor-in-Chief of *Marine Micropaleontology*), and myself in Berkeley, California, in the Fall of 1993, aims to give a view of recent progress in marine micropaleontology in China. Like elsewhere in the world, the number of active micropaleontologists has declined since the 1990s, but the loss in numbers has been compensated by a gain in depth. Marine micropaleontologists, for example, have contributed

greatly to the development of paleoceanography in China. This Special Issue provides broad coverage of post-Paleozoic marine micropaleontology in China, and includes scientific contributions from Shanghai, Guangzhou, Beijing, Nanjing, Qingdao, Taipei, Keelung and Kaohsiung. I am pleased that this issue represents marine micropaleontology in China in its full sense, with contributions from both sides of the Taiwan Strait. In fact, marine micropaleontology of the Cenozoic developed in Taiwan much earlier than in the rest of China.

This Special Issue contains ten papers that indicate the breadth of micropaleontology in China today. Over the past few years, numerous expeditions to the Qinghai-Xizang (Tibetan) Plateau provided seemingly inexhaustible geological discoveries, including many in micropaleontology. The first two papers in the issue represent new results on Cretaceous–Paleogene micropaleontology from the Roof of the World, including biofacies (Zhou et al.) and biostratigraphy (Xu et al.). As a result of extensive petroleum exploration off China, marine biostratigraphy of the Cenozoic was established for the northern South China Sea and the East China Sea. As an example, nanofossil biostratigraphy of the Pearl River Mouth Basin, South China Sea, is given by one of the papers (L. Huang), with an interesting discussion on size variation pattern of Neogene reticulofenestrids.

Currently, late Quaternary paleoceanography is the most active field of research in Chinese marine micropaleontology. Five papers in this issue then are devoted to paleoceanography of the East and South China seas, contributed mainly by Shanghai and Taiwan scientists. The *Pulleniatina* event discovered in the Okinawa Trough (Li and others) is the first Holocene climatic event reported from the East China Sea. Detailed postglacial paleoceanographic

history in northern South China Sea has been reconstructed by analyses of planktonic foraminifera together with isotopic and organic geochemistry (Huang et al.) and of calcareous nannofossils (Wei and others) in Core SCS90-36. These two papers provide, for the first time, a high-resolution record of climatic and oceanographic changes in the South China Sea based on multiple proxies. For a longer time interval, the late Quaternary paleoceanography of the South China Sea for the last 200 kyr was studied using other fossil groups. Studies on pteropods in four cores revealed changes of sea surface temperature and carbonate preservations (Wang et al.), and benthic foraminifera from the surface and core samples gave initial insight into deep-water paleoceanography of the South China Sea (Jian et al.).

Extensive investigations have been carried out by Chinese micropaleontologists on distribution of the microfauna and microflora in surface sediments of the China seas. Three contributions in this issue deal with various groups of microfossils. A summary of coccolith distribution in the China seas (Cheng and Wang) led to a reconsideration of the concept of 'marginal-sea community': the distribution of radiolarians is for the first time provided from the South China Sea (Chen and Tan); and the distribution of two ostracod genera and their correlation with water masses in the East China and Yellow seas have been demonstrated on the basis of over 500 surface samples (Zhao and Whatley).

Of course, the ten papers do not cover all the research fields in marine micropaleontology in China. At least three features characterize current Chinese micropaleontology. First is its emphasis on paleoenvironmental applications. The marine transgression cycles in the coastal and shelf areas were the focus of research interest of Chinese marine micropaleontologists in the seventies and early eighties, but now their interest is largely in paleoceanography. Secondly, active international exchange and collaboration has been essential to progress of marine micropaleontology in China. Solid geosciences in China, including micropaleontology, still suffer to a great extent from their isolation from the global community largely due to the language barrier. The situation, however, has been improved significantly. In many active laboratories in China, research is carried out by micropaleontologists with overseas experience, and international joint projects are very common. All ten

papers in this issue were written by Chinese scientists based on analyses in China, but collaborators from abroad also contributed to some of the papers, not to mention the numerous young Chinese micropaleontologists active in overseas laboratories. And last but not least, the close cooperation between Chinese micropaleontologists on both sides of the Taiwan Strait is a remarkable development for recent years. Their frequent personal exchanges and common research interests predict closer collaboration in the future, which will certainly enhance the role played by Chinese in the world micropaleontological community.

In summary, marine micropaleontology in China is more open and international than in previous years. A recent example of very successful international collaboration was the German–Chinese joint cruise *SONNE-95* to the South China Sea in 1994. This special paleoceanographic expedition, entitled *Monitor Monsoon*, gave rise to many micropaleontological projects that will be completed and published in the near future. A more significant measure was the recent decision of China to join the Ocean Drilling Program. The forthcoming participation of Chinese scientists in ODP activities will certainly give a new impetus to micropaleontology in China. Thus, at the turn of the century, prospects are encouraging for marine micropaleontology in China.

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References

- Haq, B.U., 1982. Micropaleontology in the People's Republic of China. *Mar. Micropaleontol.* 7, 189–191.
- Wang, P. et al., 1985. *Marine Micropaleontology of China*. China Ocean Press, Beijing and Springer, Berlin, 370 pp.