

Notes on Fusulinacean Studies by Japanese Workers for 1878-1989(PART I. PALEOZOIC FORAMINIFERA)

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journal or publication title	Science reports of the Tohoku University. 2nd series, Geology. Special volume = 東北大学理科報告. 地質学
volume	7
page range	13-14
year	1990-03-30
URL	http://hdl.handle.net/10097/29011

PART I. PALEOZOIC FORAMINIFERA

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More than a century ago, C.W. Gümbel (1878) introduced a species of the fusulinacean foraminifera, "*Fusulina*" *japonica*, which was considered to have come from the Permian Akasaka Limestone in central Japan. This was the first report of fossils from Japan. Fusulinacean fossils from the Akasaka Limestone were investigated by foreign scientists such as Schwager (1883) and Deprat (1914). These contributions made Japanese fusulinaceans world-famous. Just about the same time around the dawn of this century there published were a series of papers by Yabe (1899-1906).

In the 1920's, Yoshiaki Ozawa made valuable contributions which helped advance considerable researches on fusulinaceans. His outstanding scientific works on the classification of the Fusulinacea and zonation of the Akiyoshi and Akasaka Limestone successions based on this fossil group have come to be regarded as a landmark in micropaleontological investigations of the upper Paleozoic strata and have gained universal acceptance. These contributions laid the foundations of further researches by subsequent workers. During the prewar period, some important publications on the Japanese fusulinaceans were written by Hanzawa and Fujimoto, and these were followed by many contributions by their students in the postwar period.

After World War II, many stratigraphers and paleontologists were engaged in geological and paleontological studies of the so-called upper Paleozoic strata exposed in various parts of Japan. These workers contributed to the zonation, systematic description and classification of the Japanese fusulinaceans. By the end of 1960, the study of fusulinacean faunas and their application to the zonation of the Carboniferous and Permian Systems of Japan had been established in some details (see Toriyama, 1969).

After the 1960's, Japanese fusulinacean researchers paid particular attention to the investigation of fusulinacean faunas from southeastern, central and western Asia. This was made possible by the international co-operation of geoscientists working in these regions.

However, during this period, researches on the evolutionary history of the Fusulinacea continued to make progress based on biometrical methods and a population concept derived from modern biology. During the last few years much emphasis has been laid on a paleobiogeographic analysis of fusulinacean faunas for a proper understanding of the tectonic processes which created complicated orogenic belts in the Circum-Pacific region.

It may be pointed out that fusulinacean researchers in Japan have yet to go on a long way to reach any solutions of many unsolved problems connected with different aspects of this stratigraphically important group of organisms. Among

some of the problems to be mentioned is that the taxonomic status of many proposed taxa is yet to be confirmed. Papers concerning with the Japanese fusulinaceans have been published in many periodicals which are brought out by several scientific societies and institutions in different parts of Japan. Unfortunately many of these publications have a very restricted circulation.

The main purpose of the present compilation is to provide ready reference to fusulinacean foraminifera described and illustrated from Japan by scientists to date. In addition, the present bibliography includes taxonomic papers published by Japanese workers on the basis of material collected from other parts of the world, and also contains those publications which are very useful in dealing with general problems on the fusulinaceans, such as their classification, evolution, pleoecology, paleobiogeography and stratigraphic zonations. Various papers on stratigraphy, which only list fusulinaceans and do not provide either systematic descriptions or illustrations, are not included in this bibliography.

(Tomowo Ozawa, Fumio Kobayashi and Kozo Watanabe)

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