CRUISE REPORT:

INVESTIGATIONS OF DEEP SEA MINERAL RESOURCES IN THE NORTHWEST PACIFIC OCEAN NOV.—DEC. 1972

Geological Survey of Japan
National Research Institute of Polution and Resources
Editor: Hideo TAKEDA

INTRODUCTION

During the past three years (1969–1971) the project "Basic investigations for development of deep sea mineral resources" has been carried out with a special budget of Science and Technology Agency. These shipborne surveys had provided valuable experience as well as useful geological data, but the accomplished results concerning the investigations of ferromanganese nodules were not necessarily satisfactory because of instrumental deficiencies.

In 1972, a five years program "Basic investigations for exploration of deep sea mineral resources" was laid out with a special budget of Agency of Industrial Science and Technology, Ministry of International Trade and Industry. Geological Survey of Japan and National Research Institute of Pollution and Resources carried the first year project into execution in fiscal 1972. The survey team consisted of four geologists and a surveyor of the Geological Survey of Japan, and a mechanical engineer and four mining engineers of National Research Institute of Polution and Resources. The geological and topographical studies were undertaken by Hideo TAKEDA, Shūji MARUYAMA, Eiji INOUE, Taisuke SUZUKI, Eiji MATSUMOTO, Makoto YUASA and Miyoji ISO, the members of the former institute, and the improvement of dredging system and photographic treatment by Norio YAMAKADO, Sakae MATSUMOTO, Takeshi USAMI, Keiji HANDA and Katsuya TSURUSAKI, the latter group.

The survey vessel "Bosei-maru" (1,100 tons) was chartered from Tokai University, and an automatic Loran C/A was used for navigation.

The survey commenced on November 11, the cruise departed from Shimizu harbor to the Ponape and Guam islands, and terminated at the harbor of departure on December 11 (Fig. 1). Surveyed area was mainly in the Mariana basin and the Magellan seamounts, and fifteen bottom samples were collected during the cruise. Ferromanganese nodules were obtained at several stations at a depth over 5,000m. Some improvements of dredging system, especially the tension measurement of the wire rope, achieved fruitful results. This paper reports the preliminary results of the geological and technical investigations in the surveyed area.

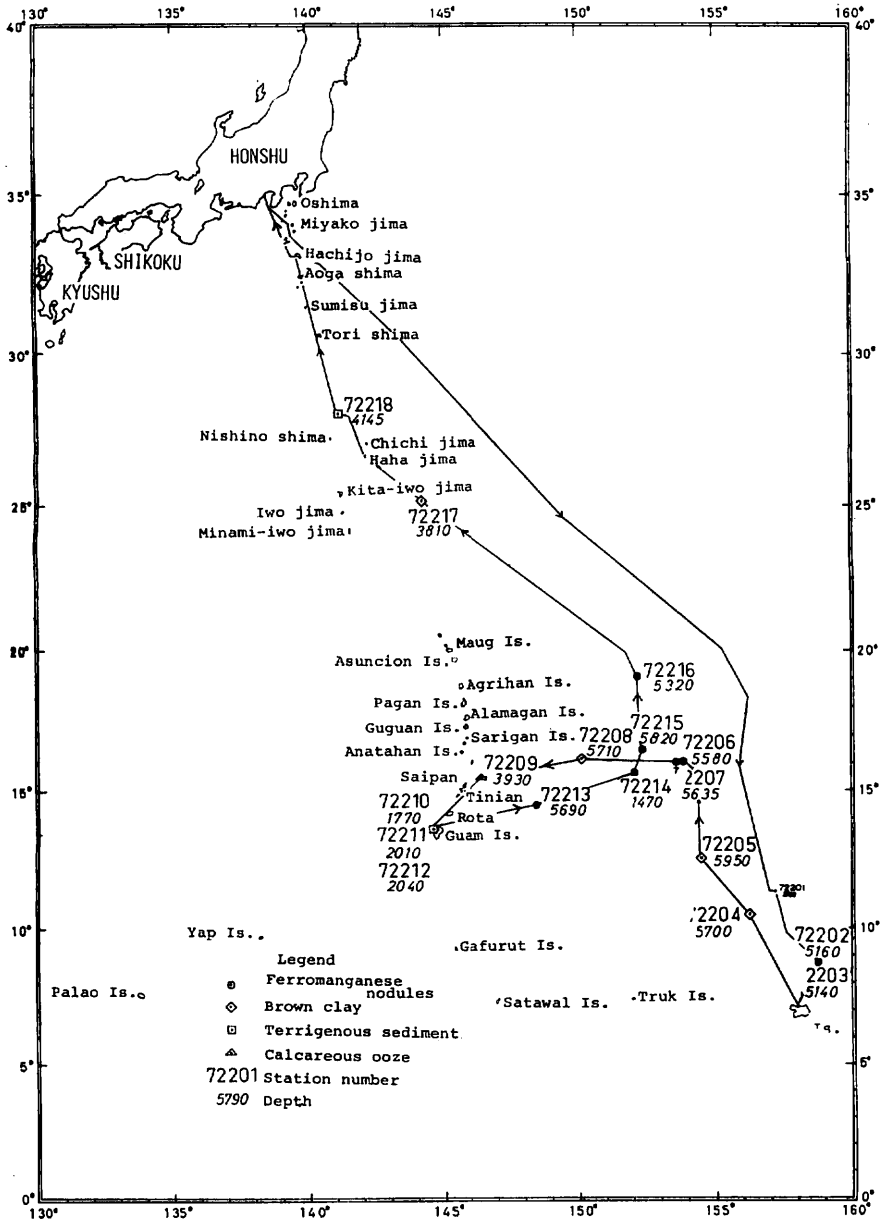

Fig. 1. Station map of the research cruise in the northwestern Pacific in Nov.-Dec., 1972.