



# 琉球大学学術リポジトリ

University of the Ryukyus Repository

|            |  |
|------------|--|
| Title      | Recent Uotsuri Limestone of the Senkaku-retto  |
| Author(s)  | Nohara, Tomohide   |
| Citation   | 琉球大学理工学部紀要. 理学編 = Bulletin of Science & Engineering Division, University of Ryukyus. Mathematics & natural sciences(15): 170-174 |
| Issue Date | 1972-03-01   |
| URL        | <a href="http://hdl.handle.net/20.500.12000/23476">http://hdl.handle.net/20.500.12000/23476</a>                                  |
| Rights     |  |

**Recent Uotsuri Limestone of the Senkaku-retto**  
Tomohide NOHARA\*

Abstract

Limestone, which might be a fringing reef and is 2 or 3 meters high above the sea level, develops throughout the Senkaku-retto. The limestone, originally assigned to Pleistocene in age, may be Recent and is suggested to be called Uotsuri Limestone.

**1. Introduction**

Senkaku-retto is the south-western islands of the Ryukyu-retto. It extends from about lat.  $25^{\circ}40'$  to  $25^{\circ}57'N$ , and from about long.  $123^{\circ}30'$  to  $124^{\circ}35'E$  (fig. 1).

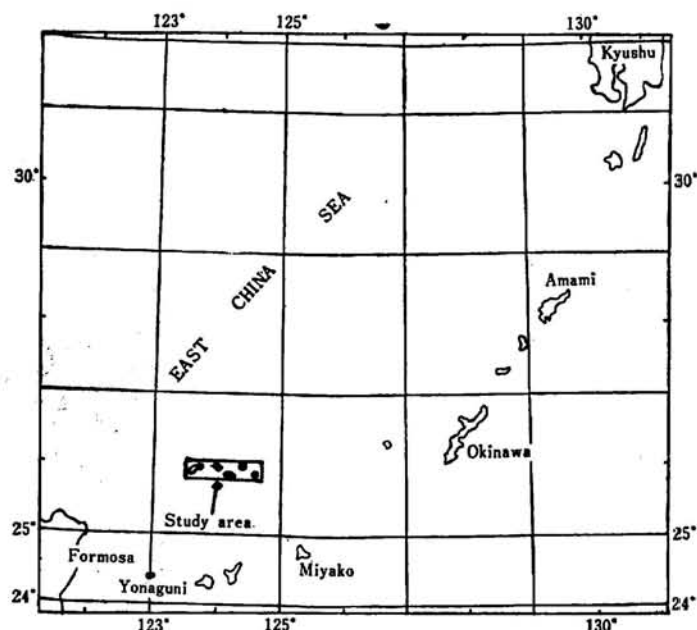


Fig. 1 Location map of the Senkaku-retto

Senkaku-retto was visited by few geologists previously. Kuroiwa and Miyajima were the first naturalists who mentioned about some geological aspects of the islands. However, Kuroiwa was the first geologist who landed on Uotsuri-jima and reported geology of the island.

The report deals with Pleistocene coral reef of Kuroiwa<sup>1)</sup> and Recent raised coral reef of the author<sup>2)</sup>. The data presented in this report were acquired mostly from March 29 to April 10, 1971.

Received: Sep. 30, 1971

\*Institute of Earth Sciences, School of General Education, Univ. of the Ryukyus

## 2. Discussion

Kuroiwa<sup>1)</sup> reported the presence of coral reefs in Pleistocene age on Uotsuri-jima. Later, Hanzawa applied Riukiu Limestone, which was originally called on raised reef limestone of Taiwan by Yabe and Hanzawa, to post-Miocene limestone throughout the Ryukyu-retto. However MacNeil<sup>2)</sup> subdivided Riukiu Limestone into Naha Limestone, Yontan Limestone, and Machinato Limestone upward respectively.

Kuroiwa's coral reefs in Pleistocene age may be included into Riukiu Limestone of Hanzawa, but can not be assigned to any limestones of MacNeil's classification because of degree of recrystallization and solution, and differences of lithology, distribution, thickness, altitudes, and fossil abundances. So, the author holds a view of naming coral reefs on Uotsuri-jima of Kuroiwa as Uotsuri Limestone and extending the new name to limestones around the adjacent areas.

Uotsuri Limestone unconformably overlies the conglomeratic sandstone (Pl. I, fig. 2). It occurs on the islands of Uotsuri-jima, Kita-and Minami-kojimas, Kobi-sho as patches, and possibly Sekibi-sho. Here the author mentions about limestones of Uotsuri-jima and Minami-kojima since the largest occurrences are on both islands.

Uotsuri Limestone might develop as fringing reefs (Pl. I, figs. 1 & 3) and it ranges in altitudes 1.8 to 2 m at Uotsuri-jima and 2 to 3m at Minami-Kojima above sea levels. On Uotsuri-jima, the limestone occurs on the east, west, and south coast of the island fig. 2. On Minami-kojima, the limestone occurs mostly on the central to the

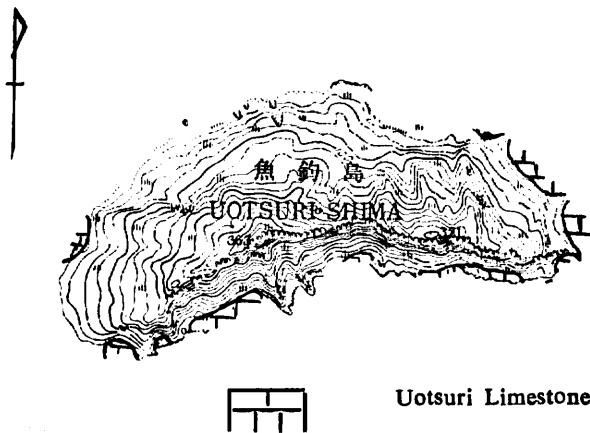


Fig. 2 Distribution map of Uotsuri Limestone at Uotsuri-jima

eastern part of the island (fig. 3). On the island, the limestone might develop on

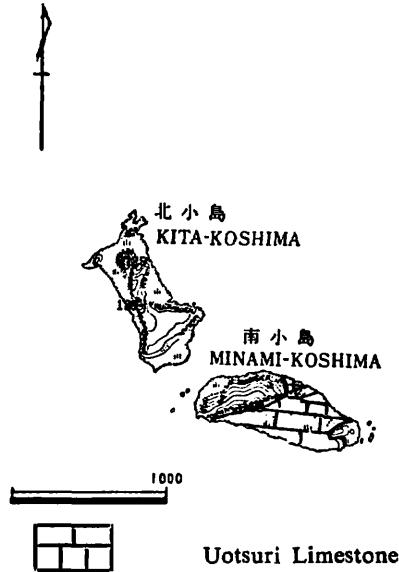


Fig. 3 Distribution map of Uotsuri Limestone at Minami-kojima

shallow channels between the eastern and the western pinnacles.

The thickness of the limestone ranges 1.8 to 2m on the west coast of Uotsuri-jima and about 2m on Minami-Kojima.

The limestone is poorly lithified, recrystallized limestone composed of some coral and calcareous algae which are in their position of growth (Pl. I. fig. 4) and molluscs. It is mostly light gray on weathered surfaces and white on fresh surfaces. Bedding does not develop on the limestone. The limestone is porous, and irregular cavities are scattered throughout the rock.

The fossils, particularly megafossils, are well preserved; many are partly recrystallized. They are mostly moderate forms. Fossils alone are inconclusive in determining the age of the limestone since they are Recent species. However, the small amount of limestone, the low altitudes of it, its weak degree of recrystallization, softness of it, and good preservation of corals, molluscs, and calcareous algae lead to the conclusion that the limestone may be Recent.

Limestone which closely resembles the Uotsuri limestone crops out in Okinawa-jima and Yoron-to<sup>1)</sup>. It may be equivalent in age to the coastal Plain I, Recent deposits, and Holocene flat raised coast of Nakagawa<sup>5, 6, 7, 8)</sup>.

#### References

- (1) Kuroiwa, I.: "Note on the Senkaku-retto," (in Japanese) *Chigaku-zashi*, Vol. 12, 476—483P, 528—543P. (1909)
- (2) Nohara, T.: "Preliminary Report on Geology of the Senkaku-retto," (with English abstract) *Rept. Ryukyu Univ.* (1971) (in print)

- (3) MacNeil, F. S.: "Tertiary and Quaternary Gastropoda of Okinawa" U. S. G. S. Prof. Paper 339 (1960)
- (4) Takenaga, K.: "The Post Glacial Sea Level in the Central Region of the Ryukyu Archipelago" (with English abstract), Chiri-kagaku, No. 9, p. 14-29, (1968)
- (5) Nakagawa, H.: "Pleistocene Sea Levels along the Pacific Coasts of Japan" Sci. Rept. Tohoku Univ. 2nd Ser. (Geol.) Vol. 37, No. 1, 31-39 p. (1965)
- (6) \_\_\_\_\_ : "Geology of Tokunoshima, Okierabu-jima, Yoron, and Kikai-jima, Amami Gunto, Part 1" (with English abstract) Tohoku Univ. Sci. Rept. No. 63, 39 p. (1967)
- (7) \_\_\_\_\_ : "Geology of Tokunoshima Okierabu-jima, Yoron, and Kikaijima, Amami Gunto, part 2" (with English abstract) Tohoku Univ. Sci. Rept. No. 68, 17p (1969)
- (8) \_\_\_\_\_ : "Quaternary Sea-level changes in the Ryukyu Island" (in Japanese) Chidanken-sempo, No. 15, 429-435p. (1969)

#### Explanation of plate

- Figure 1. Recent Uotsuri Limestone on the north-east coast of Uotsuri-jima.
2. Recent Uotsuri Limestone overlying unconformably the conglomeratic sandstone on the west coast of Uotsuri-jima.
  3. Recent Uotsuri Limestone developing in Minami-kojima.
  4. Corals included in Uotsuri Limestone in Minami-kojima.

