

THE DIVERSITY OF BACTERIA ISOLATED FROM THE MCMURDO DRY VALLEYS REGION, ANTARCTICA (ABSTRACT)

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This paper reports the characteristics of bacteria isolated from the McMurdo Dry Valleys region, Antarctica. The samples were collected by G. I. MATSUMOTO (Ohtsuma Women's University, Tokyo) during December 1985 to January 1986 from Lake Vanda, Labyrinth, South Fork and Ross Island in the McMurdo Dry Valleys region, and were stored at -20°C . The bacterial were isolated and purified with a single colony isolation method at 20°C under aerobic condition. A hundred and one strains were isolated: 26 strains from Lake Vanda, 20 strains from Labyrinth, 5 strains from South Fork and 50 strains from Ross Island. The characteristics of colonies, the cell shapes, the gram stain of cells and the activities of oxidase and catalase, etc. were investigated.

From the observations of colonies, the following results were obtained.

- 1) Colors of colonies were varied in a wide range, such as white, yellow, deep orange, pale pink, deep or pale brown or deep red, etc.
- 2) Colonies were glossy or not, in fairly wide range of variety.
- 3) Colonies were flat or warty, etc.

From observations of cells, it was found that these strains had various spherical shapes (diplococci, streptococci and staphylococci, etc.), short or long rod and irregular shapes, but in some cases, they had very unique shapes with a stalk or (forming) a rosette, etc. Also, their strains had an end spore or not.

From the various taxonomic studies, an interesting bacterial strain No. 20-2 was found from Lake Vanda in comparison with *Staphylococcus aureus*. The strain was a yellow color staphylococci, and showed activities of oxidase, hemolysis and aggregations, but it showed no activities of coagulase, enterotoxins (A, B, C, D and E) and toxic shock syndrome, toxin-1.

Clearly, there is a diversity in Antarctic bacterial strains.

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