## III. Petrographic Data from Cores Drilled at Mizuho Station

For the purpose of studying changes in petrographic structures of firn and ice with depth, about 160 vertical thin sections were prepared from JARE-13 cores covering from 23.5 m to 145.5 m in depth, and microphotographs of them were taken under ordinary and polarized light.

Air bubble concentration and specific free surface were obtained from the former photographs, which revealed air-ice boundaries, while specific crystal boundary area and frequency curves of crystal size parameters from the latter, which revealed crystal boundaries.

Obtained data were presented in Figs. 1–14 for the various depths including typical photographs and petrographic structures, together with the fabric pattern (Schmidt diagram) obtained from the analysis of the horizontal thin section of the corresponding or neighboring depth, if available.

In each figure, (a) and (b) are respectively the photographs taken under the ordinary and polarized light, and the diagrams marked (c) and (d) give the frequency of size parameter and the fabric pattern.

Two kinds of "diameter" were used as parameters in the grain size analysis. For the curve I in the frequency diagram (c), the "diameter" of a grain is defined as that of a largest circle embedded in the grain, while for the curve II it is defined as the longest distance between two arbitrary points on the periphery of the grain. In the diagram, $M_I$ and $M_{II}$ stand for the mean values of respective diameter and N is the number of grains in the sample.

About 100 crystals were measured for each of fabric patterns, except those in Figs. 8, 9 and 10, for which 64, 39 and 37 crystals were measured, respectively.

(Hideki NARITA)

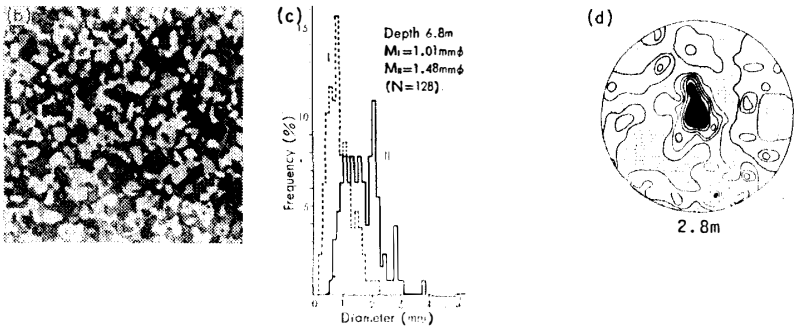


*Fig. 1. Depth 6.8 m, density 555 kg·m⁻³.*

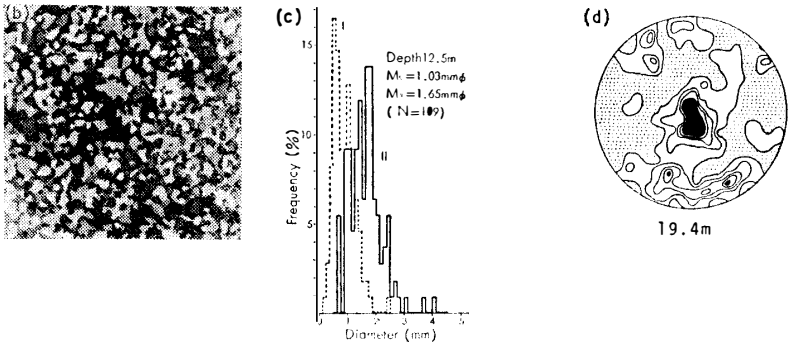


*Fig. 2. Depth 12.5 m, density 611 kg·m$^{-3}$.*

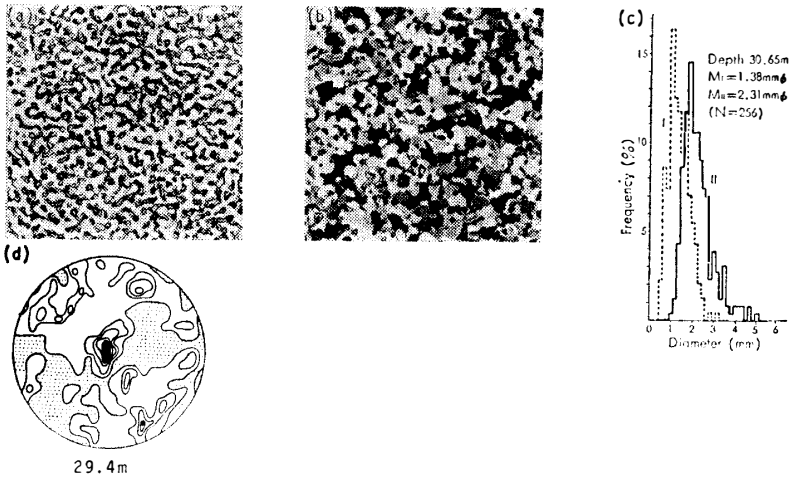


*Fig. 3. Depth 30.65 m, density 732 kg·m$^{-3}$.*

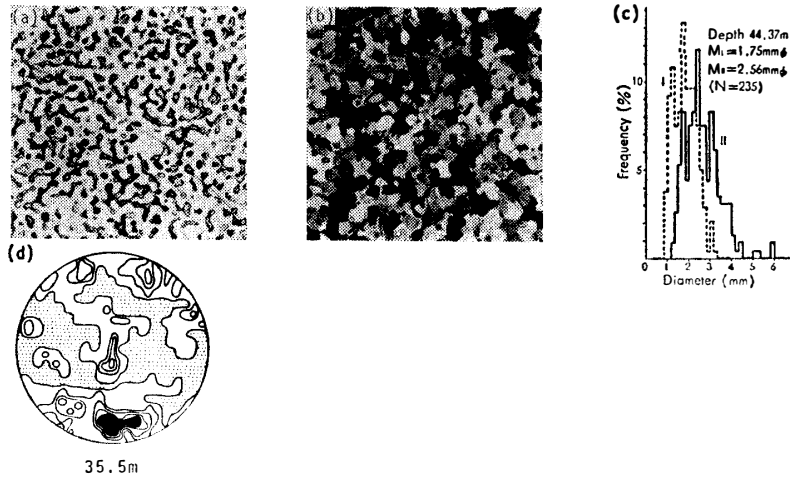


*Fig. 4. Depth 44.37 m, density 798 kg·m$^{-3}$.*

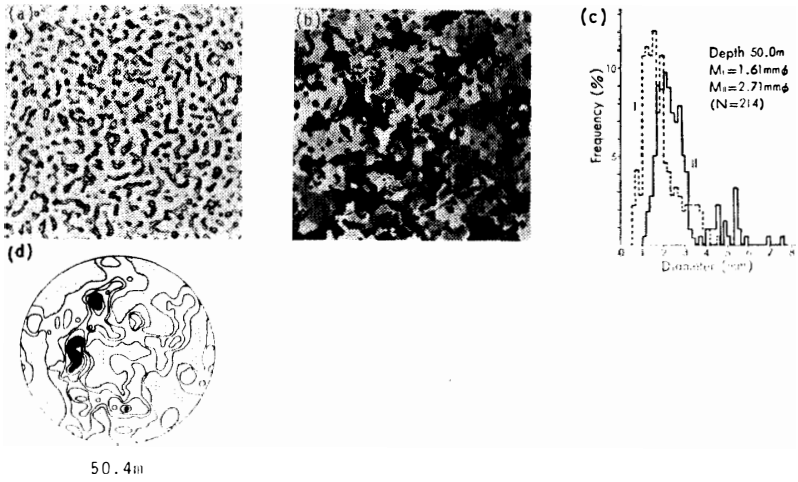


*Fig. 5. Depth 50.0 m, density 813 kg·m$^{-3}$.*

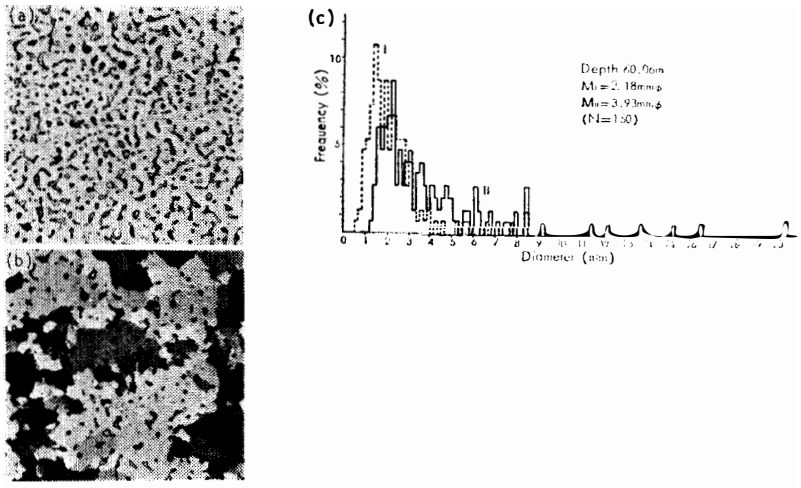


*Fig. 6. Depth 60.06 m, density 860 kg·m$^{-3}$.*

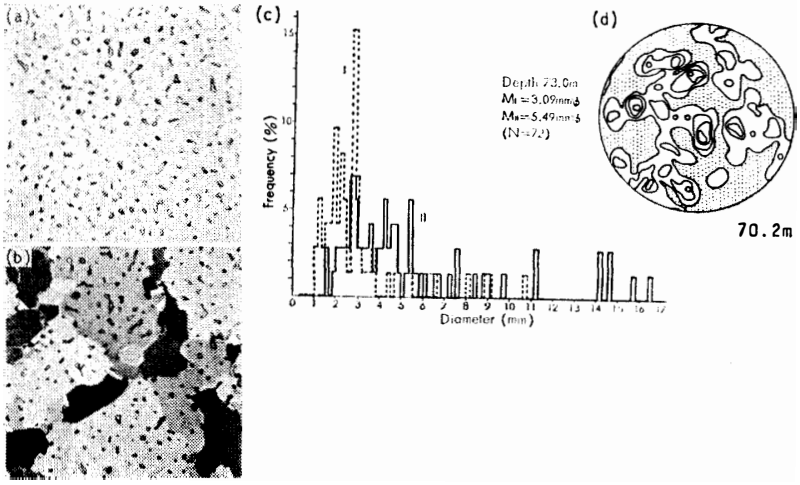


*Fig. 7. Depth 73.0 m, density 858 kg·m$^{-3}$.*

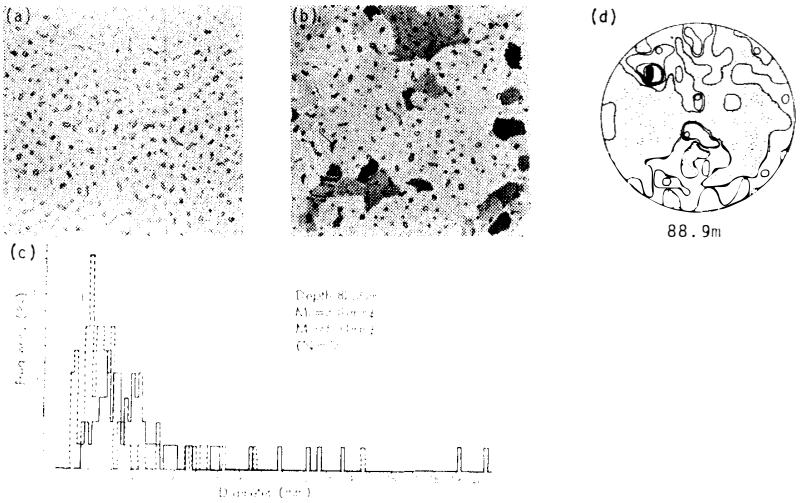


*Fig. 8. Depth 82.35 m, density 885 kg·m$^{-3}$.*

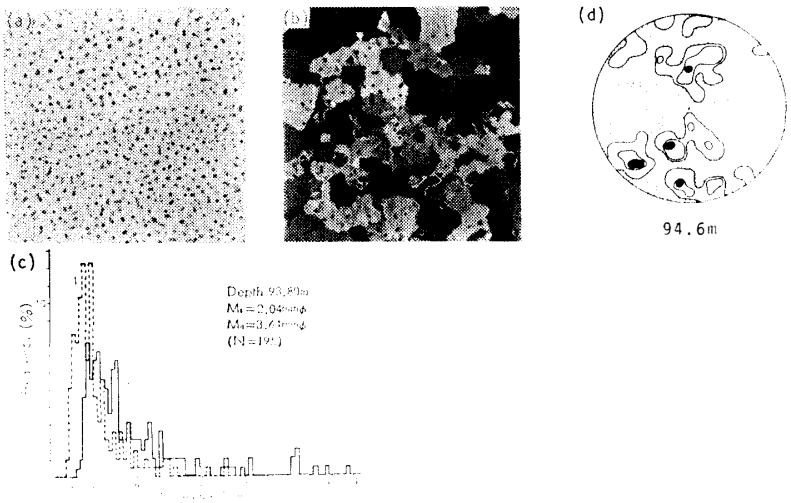


*Fig. 9. Depth 93.80 m, density 879 kg·m$^{-3}$.*

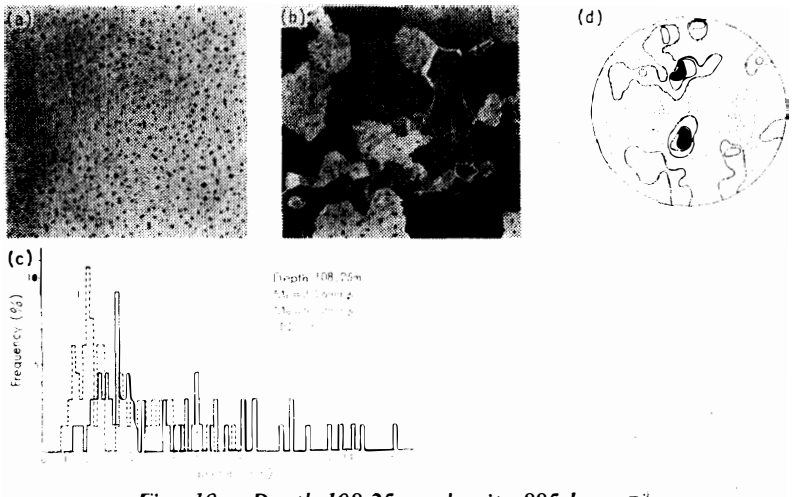


*Fig. 10. Depth 108.25 m, density 885 kg·m$^{-3}$.*

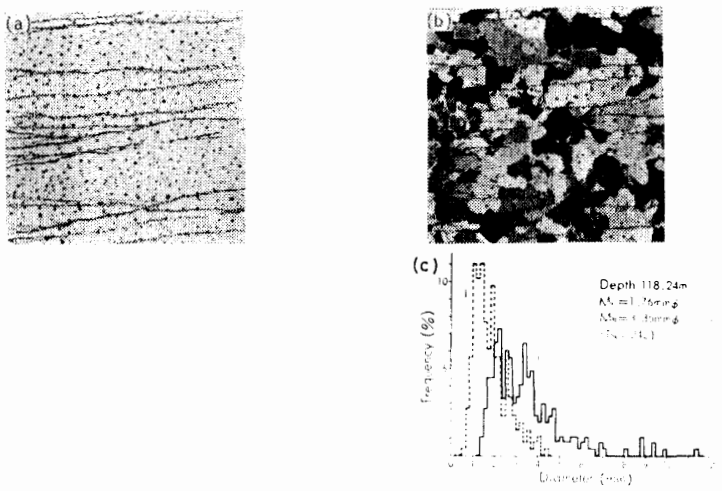


*Fig. 11. Depth 118.24 m.*

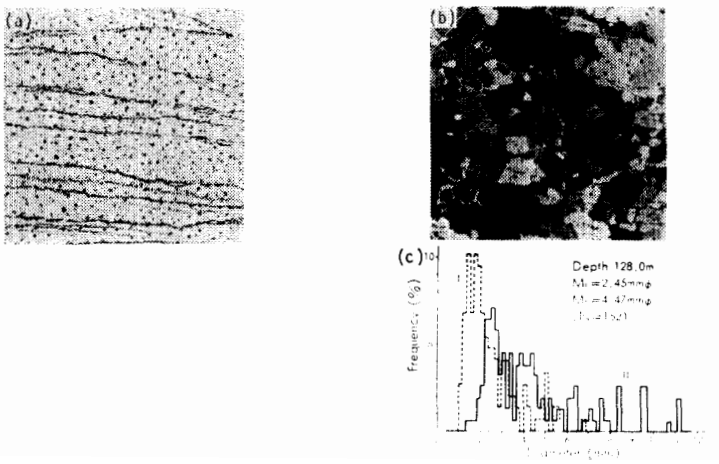


*Fig. 12. Depth 128.0 m.*

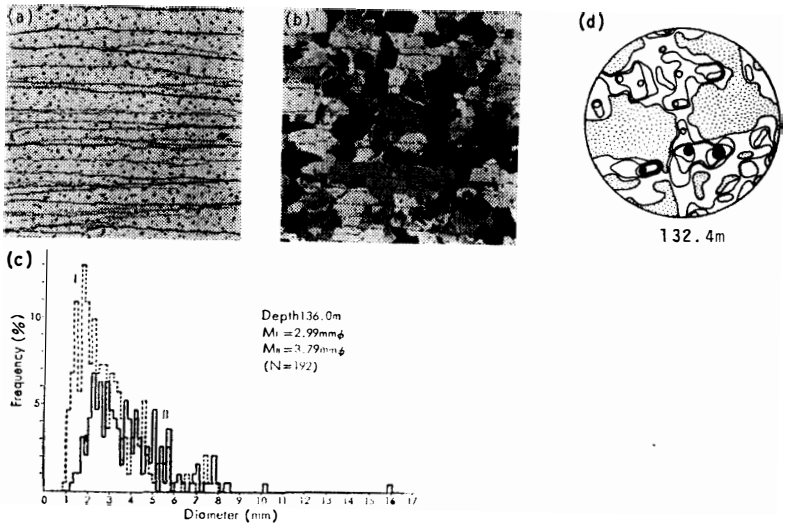


*Fig. 13. Depth 136.0 m.*

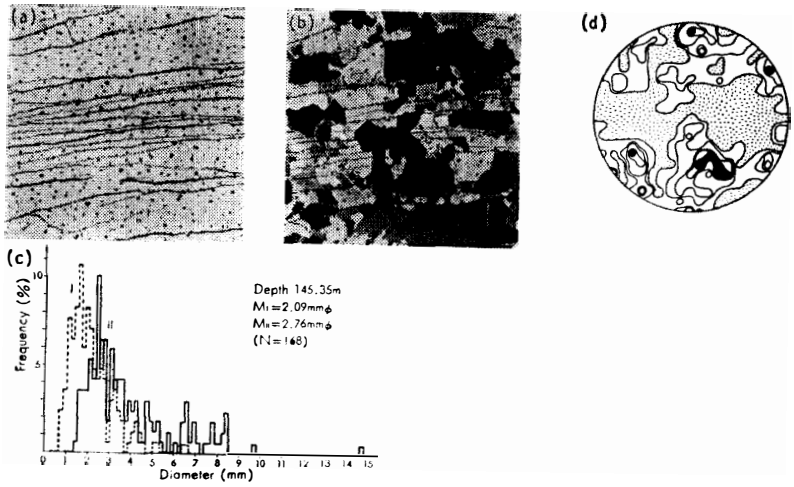


*Fig. 14. Depth 145.35 m.*