

6. Photographs of Vertical Section of Firn

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Vertical sections of firn layer were photographed in investigating of 10-meter long cores collected from six stations in Mizuho Plateau along the traverse route of JARE-15 in 1974 - 1975.

Details of the coring operation are given in Chapter II-5 of this volume.

The investigation was primarily intended to classify firn texture systematically and to make a criterion in snow stratigraphy. Vertical thin sections of various parts of six core samples each 10-meter long were made by aniline method and microphotographed.

The cores were sampled at the following stations: W-46 (1958 meters above sea level), Y'-210 (2880), J-225 (3039), I-235 (3200), I-355 (3304), and I-485 (3382).

Photographs of the thin sections are shown in Plate 1 in order of elevation.

Two types of sheet structure previously described by Watanabe (1972) were found in some of these vertical sections as linear structures. The one is formed by sintering of snow particles; the other is due to the horizontal ice crust, namely, a continuous single-layered or multiple-layered ice crust, resulting from the frozen snow which had been melted at the surface once, as suggested by spherical-shaped air bubbles in the crust. These sheet structures are shown in Plate 2, enlarged from Plate 1. Result of the investigation on classification of firn on the basis of microtextures of snow will be reported separately.

Reference

- Watanabe, O. (1972): Stratigraphic observation of the surface snow cover in West Enderby Land, East Antarctica, 1970 - 1971, JARE Data Rep., 17 (Glaciol.), 88 - 110.

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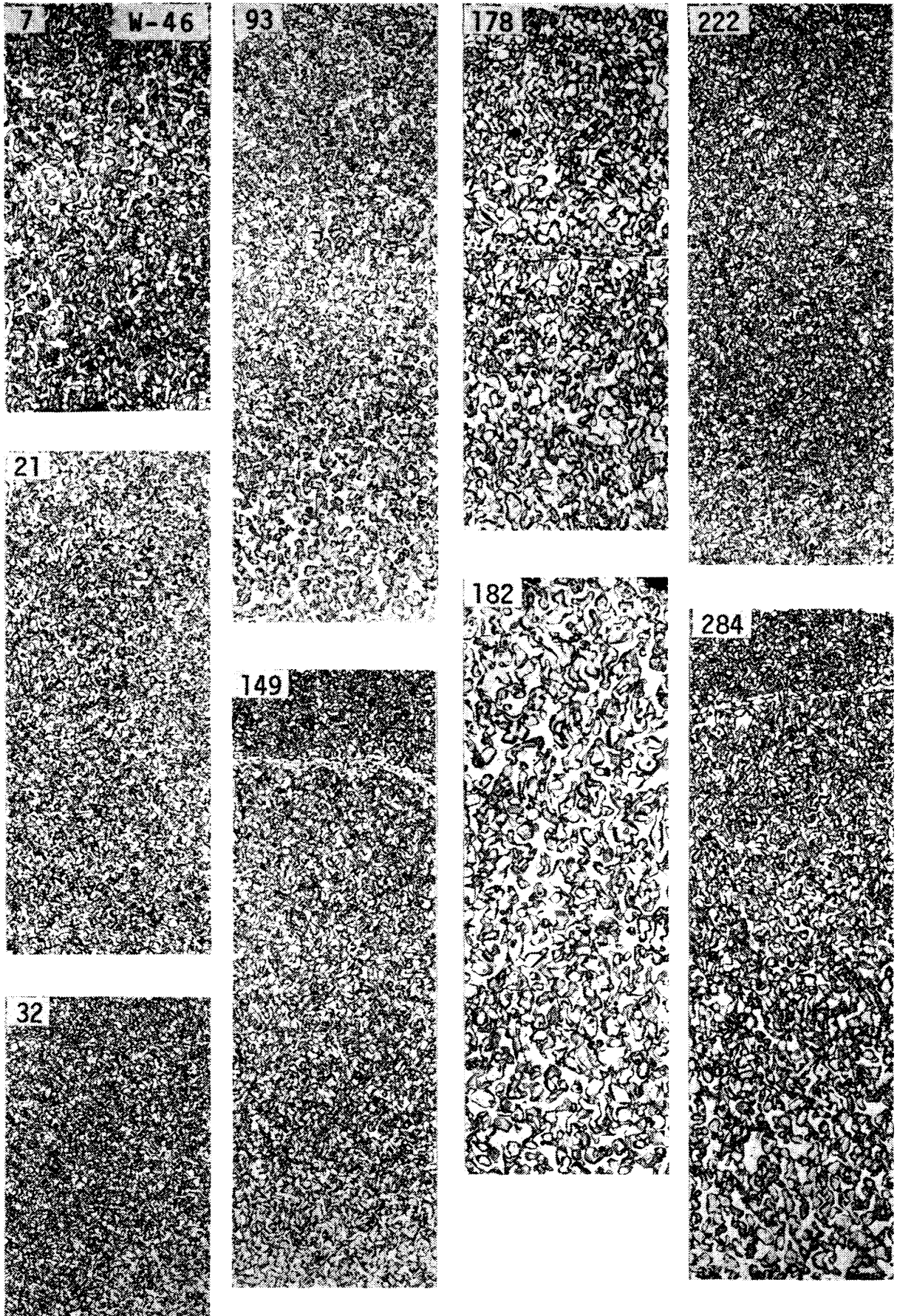
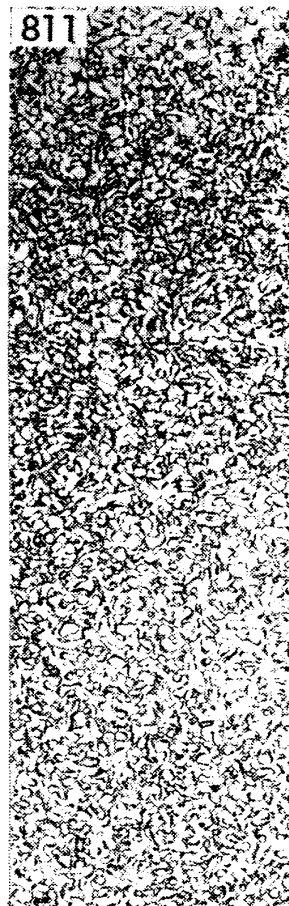
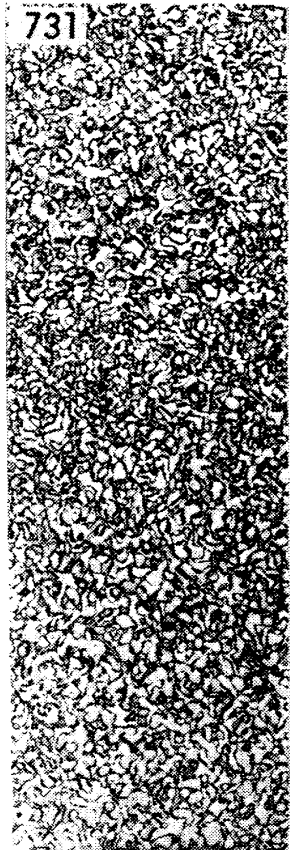
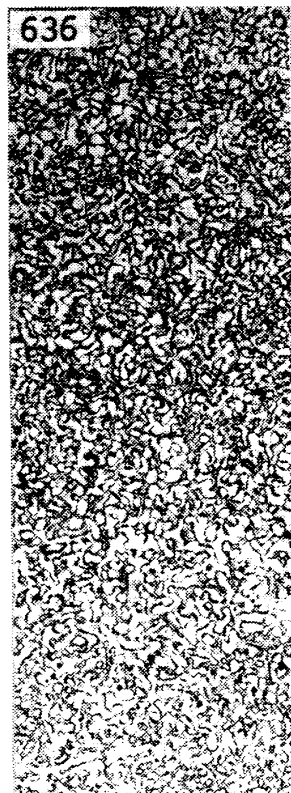
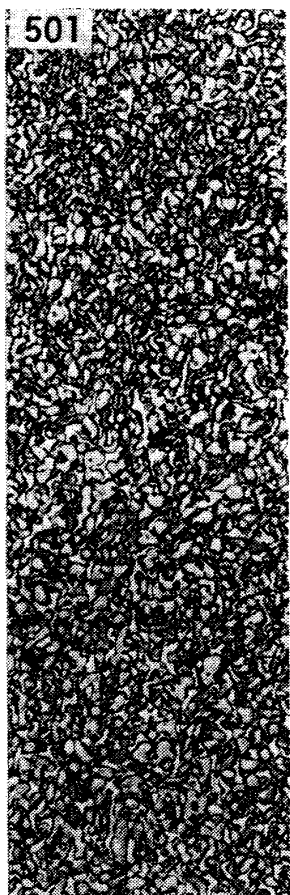
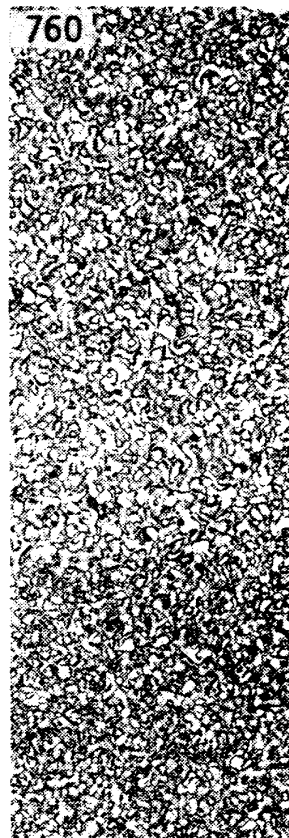
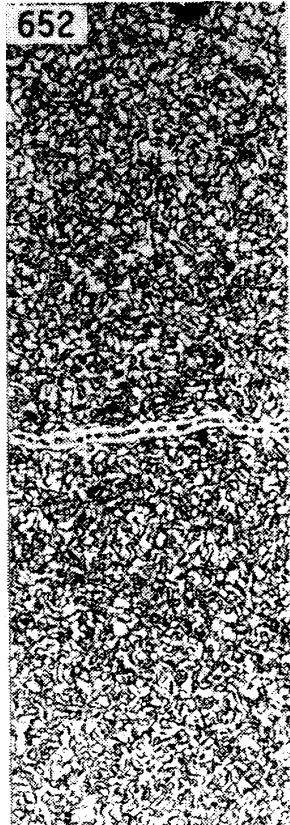
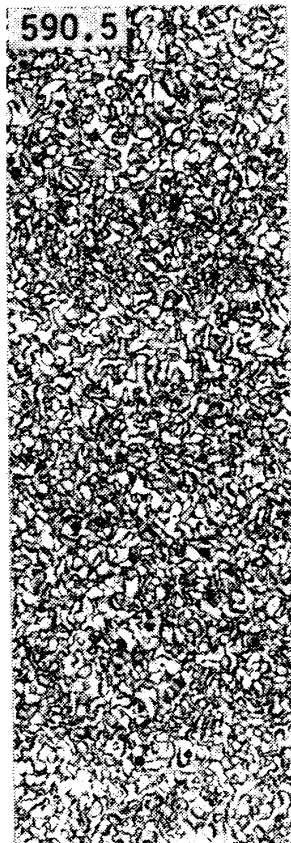
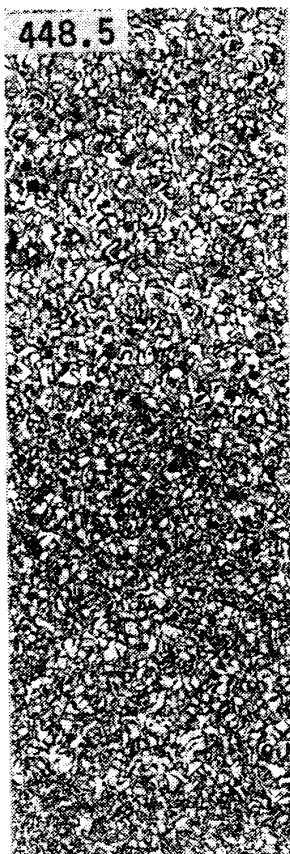


Plate 1. Vertical thin section of 10-meter snow cores. The station number is given at upper right, depth in cm at upper left. Photograph is enlarged twice the natural size.

Plate 1-2.



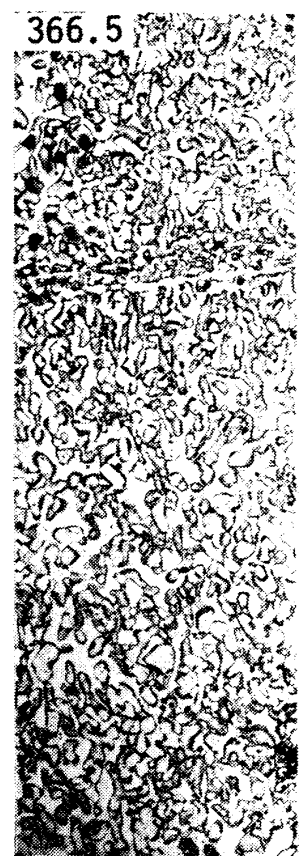
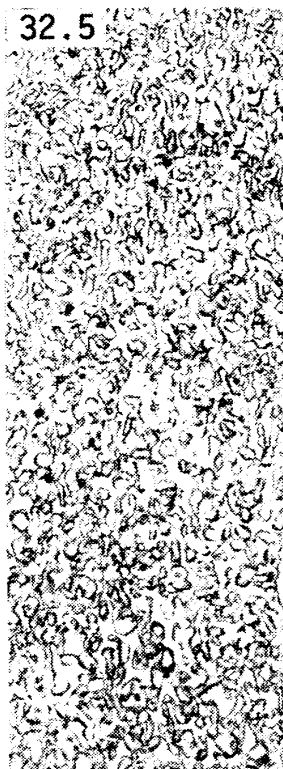
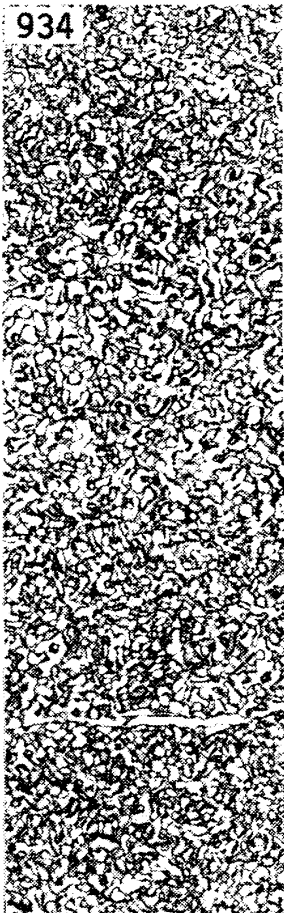
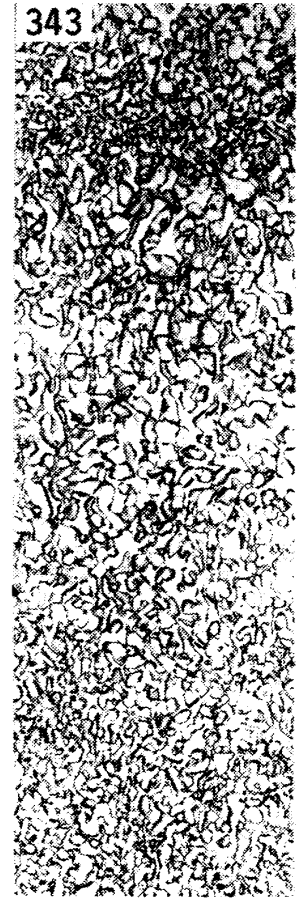
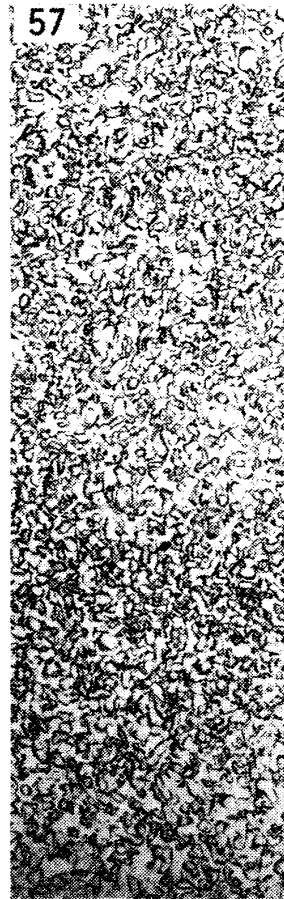
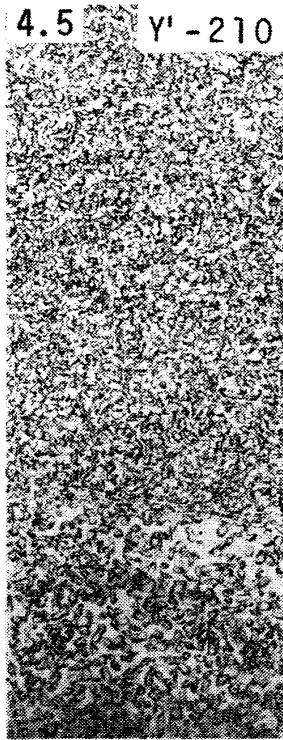
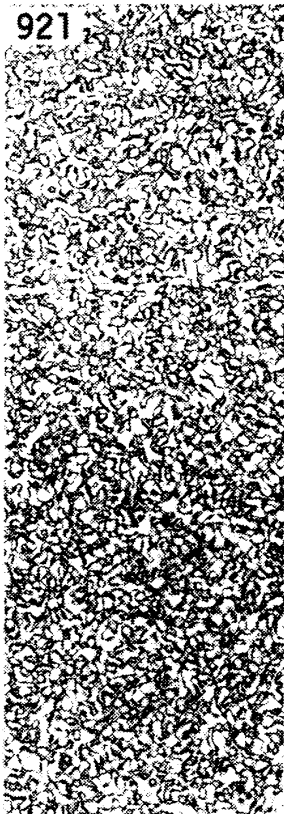
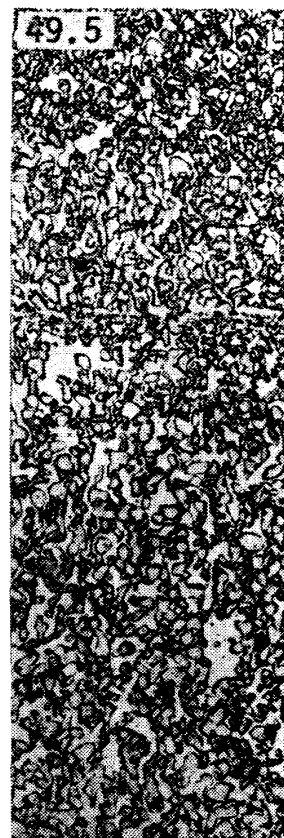
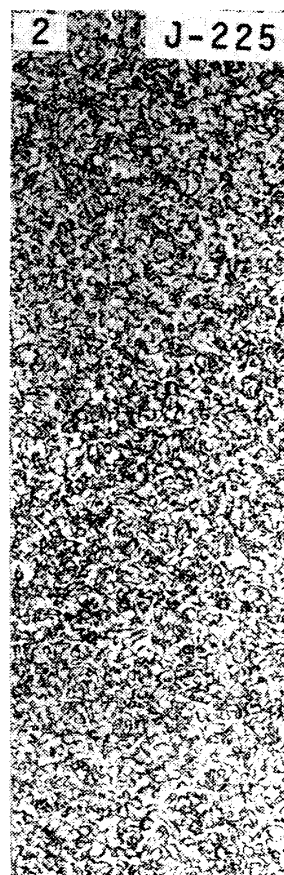
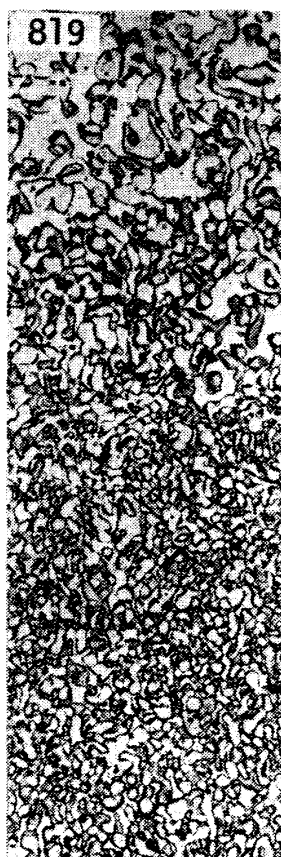
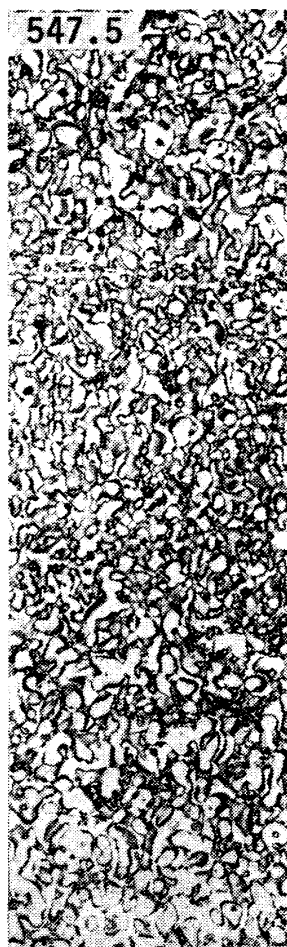
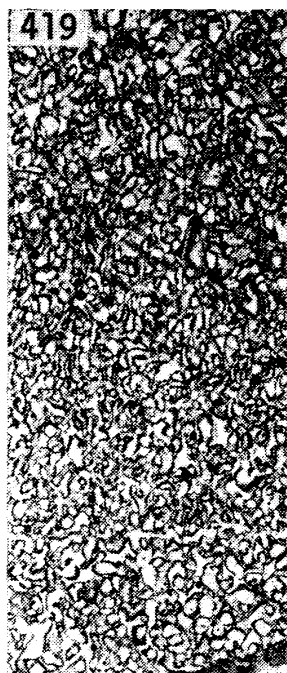


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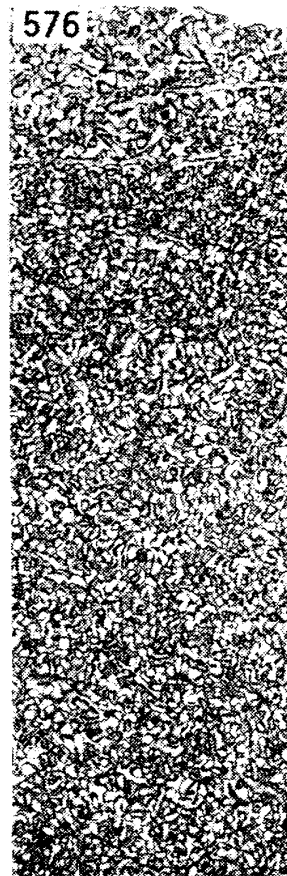
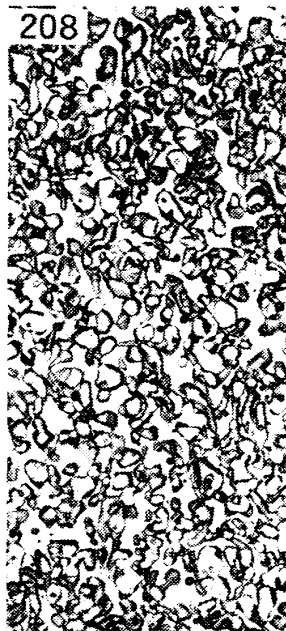
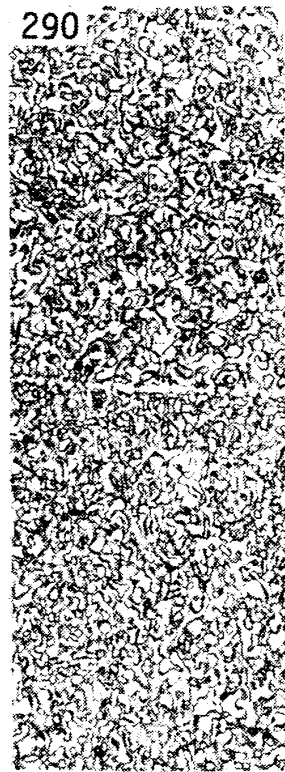
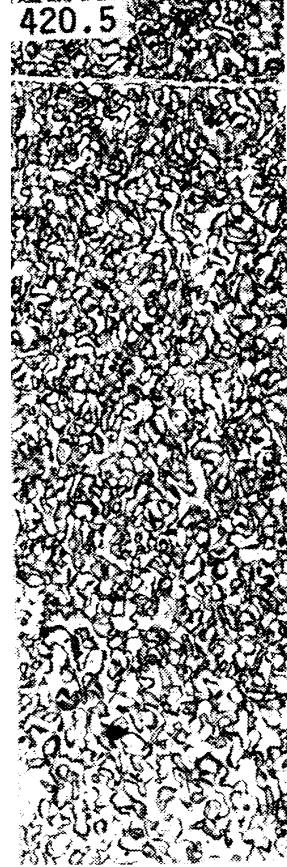
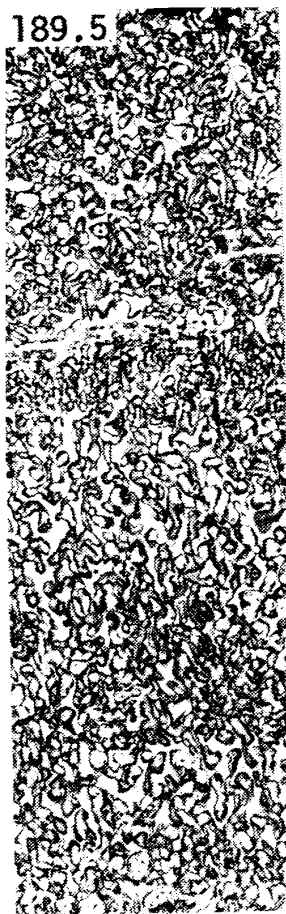
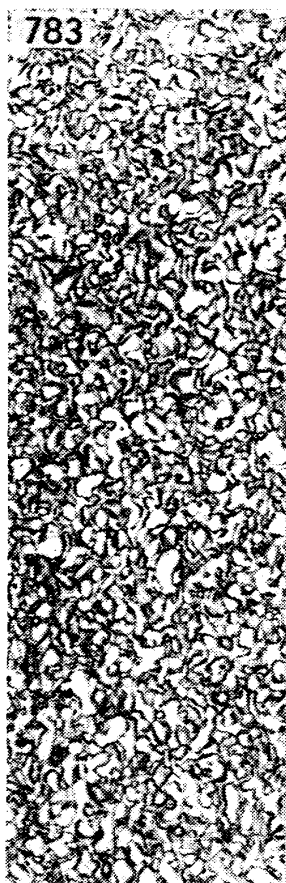
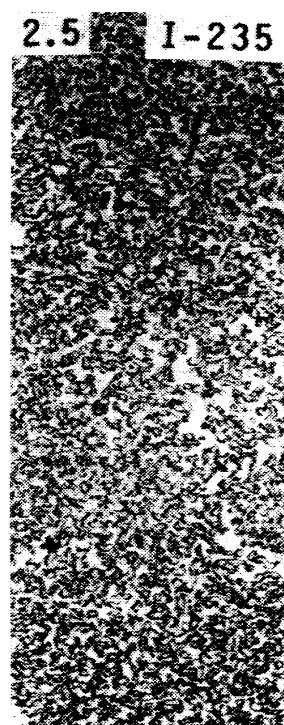
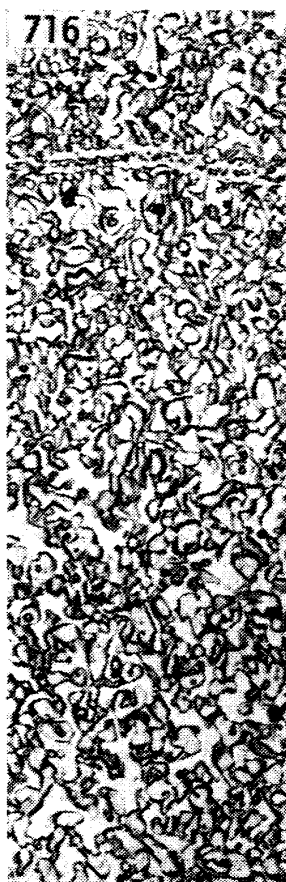


Plate 1-6.



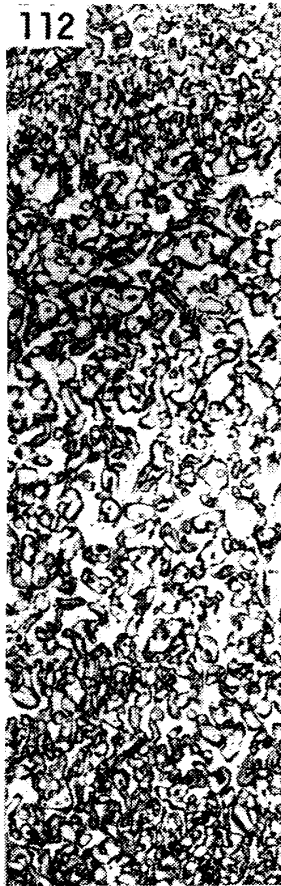
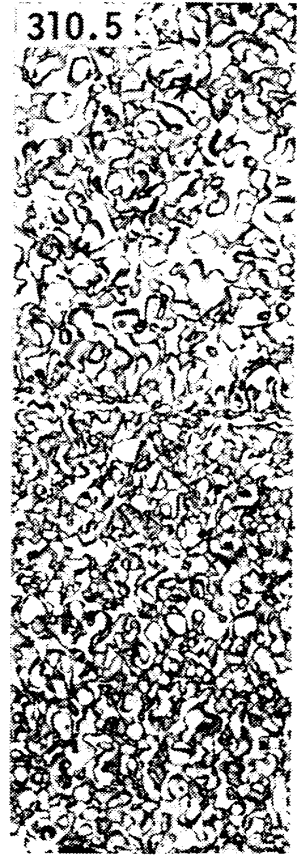
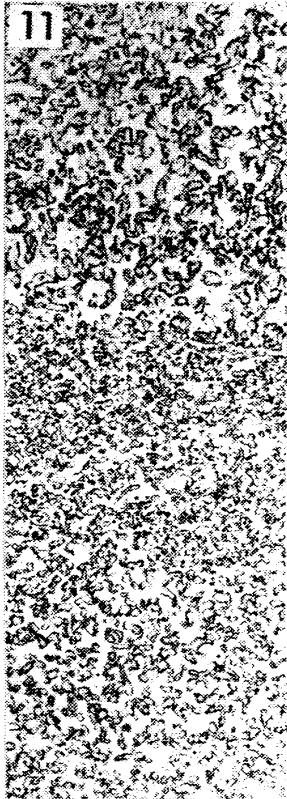
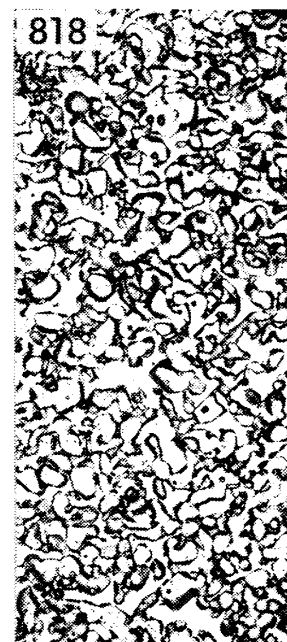
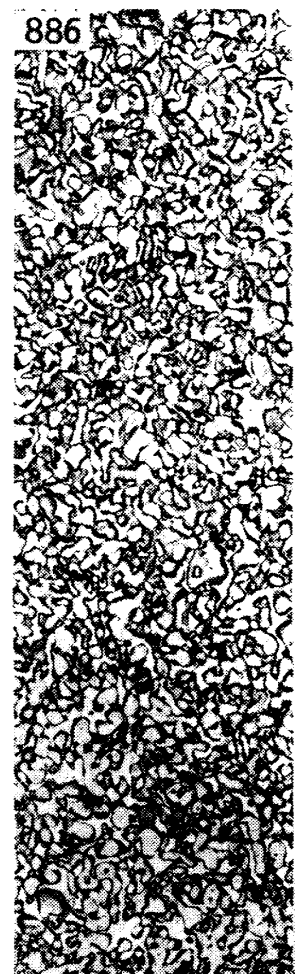
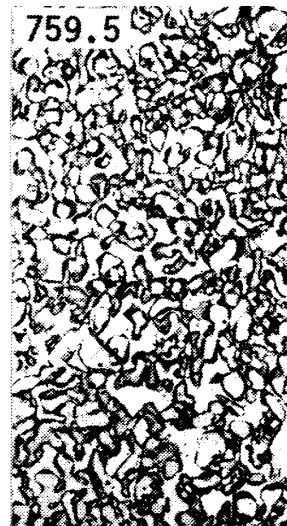
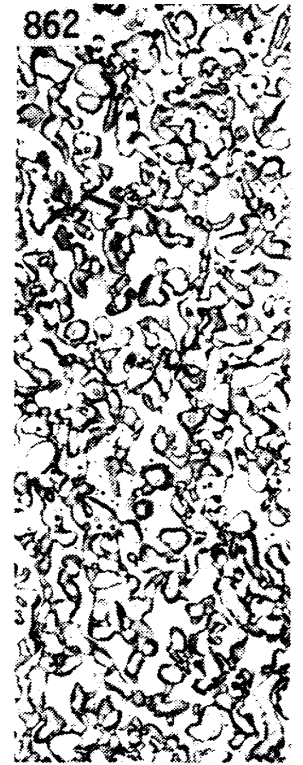


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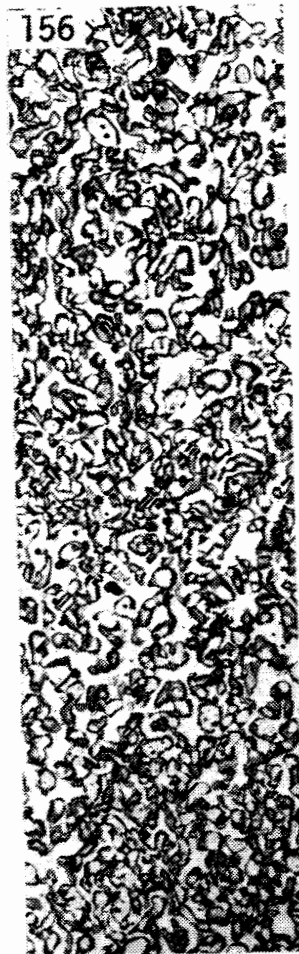
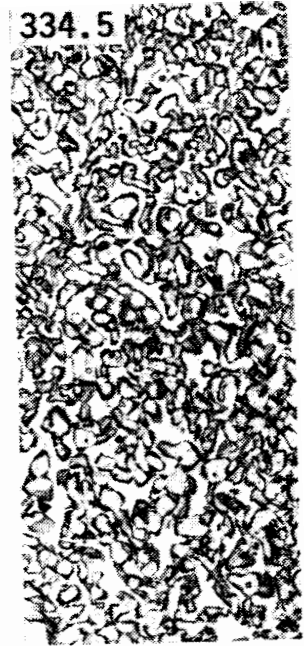
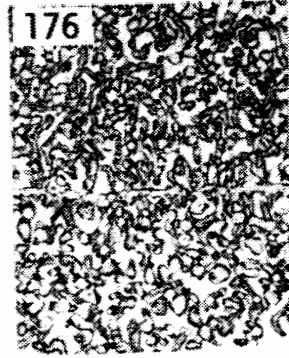
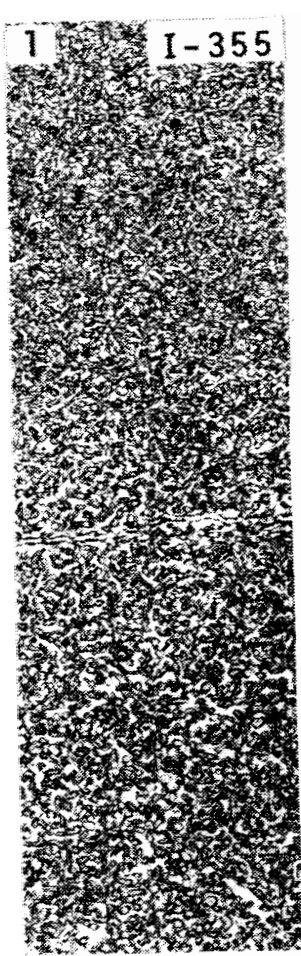
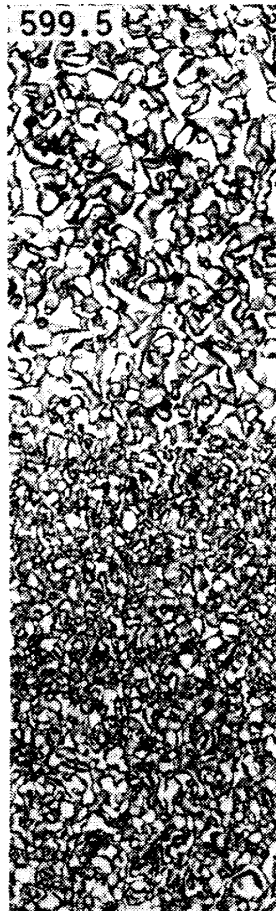
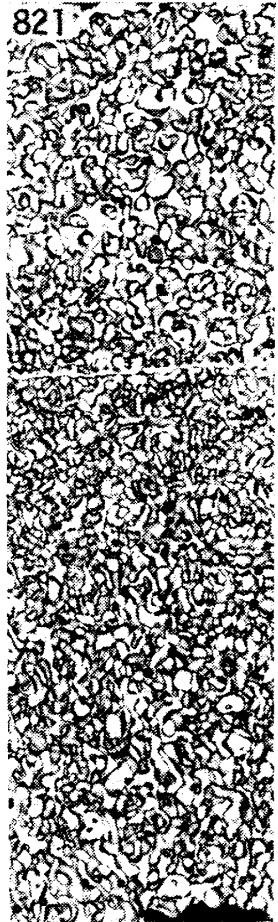
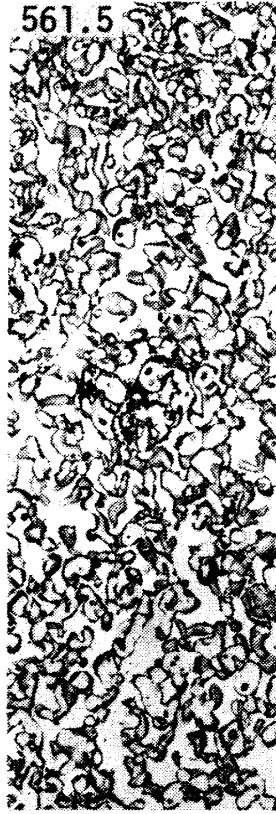


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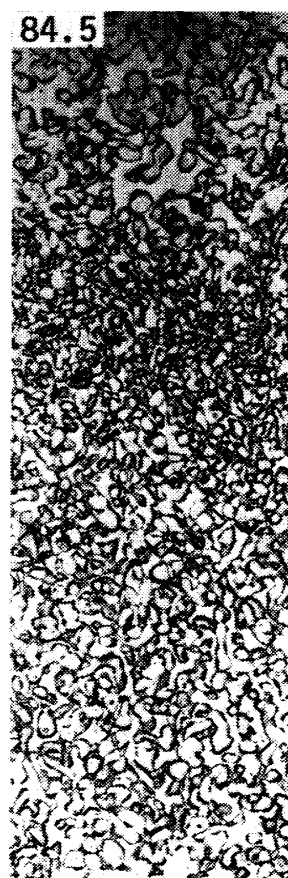
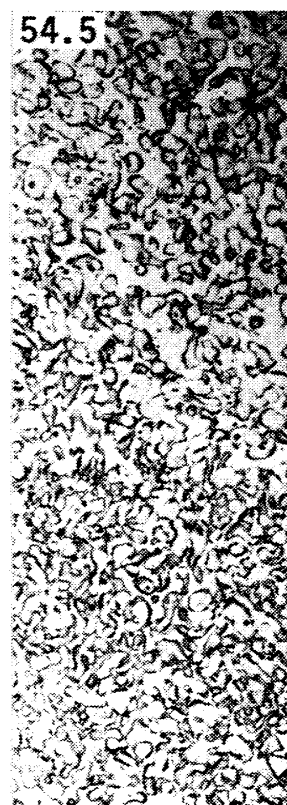
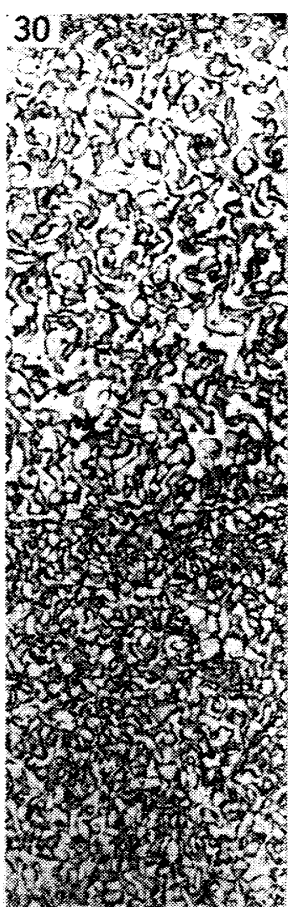
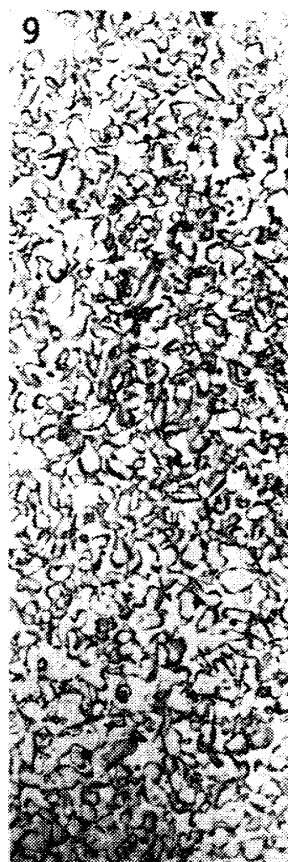
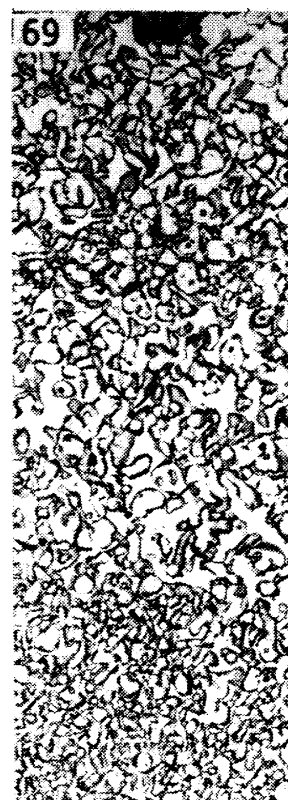
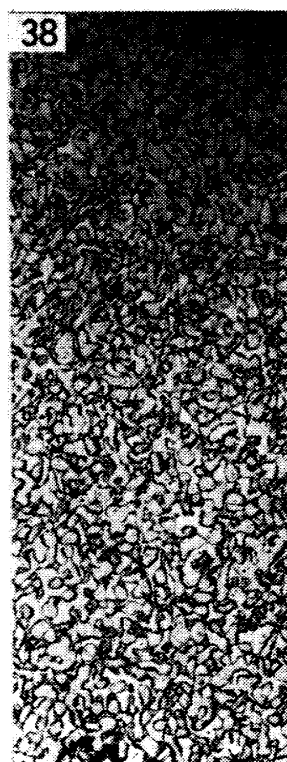
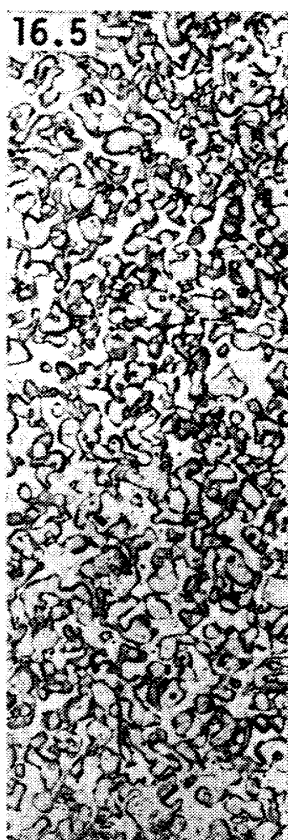
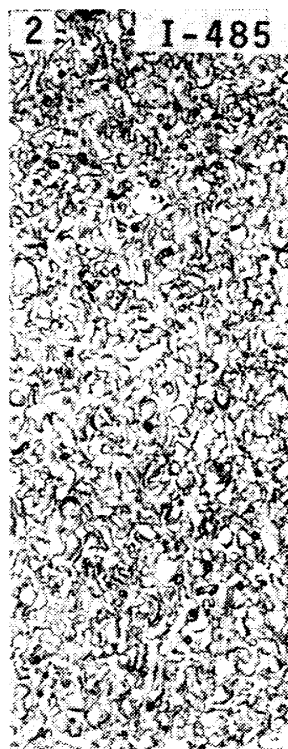


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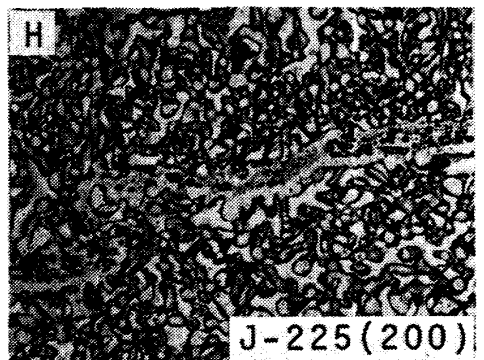
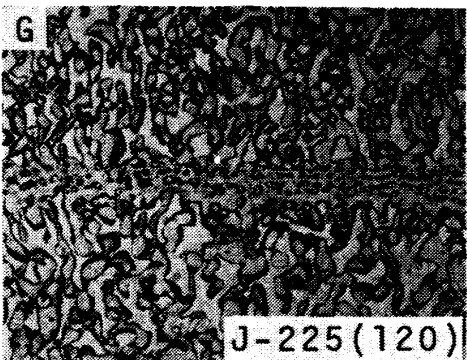
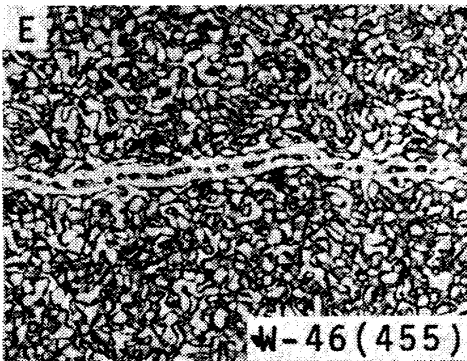
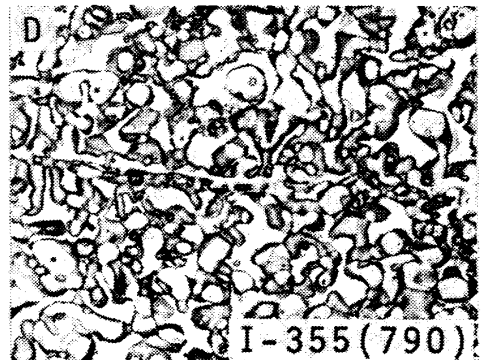
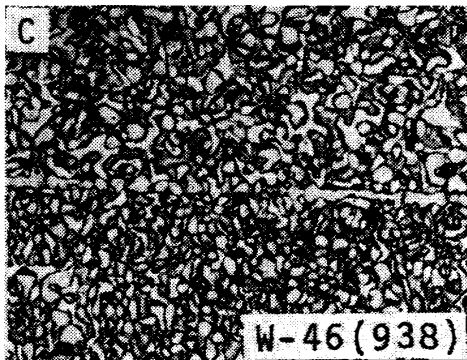
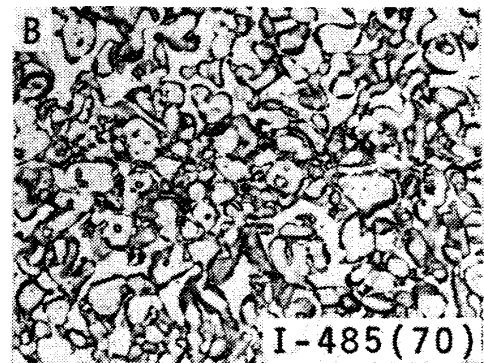


Plate 2. Various sheet structure of firm.
A, B : Sheet structure without ice layers.
C, D : Sheet structure of one ice layer.
E - H : Sheet structure of multiple ice layer.
Station number and depth (in cm) at bottom right.