ley. This process is due to the presence of an ice-cemented layer close to the surface (usually less than 40 cm) and to frequent (although light) summer snow falls coupled with high humidity.

Particular attention is being paid to soil-profile samples with respect to physical and chemical weathering and to ionic translocations. A map is being prepared to correlate and define the soils, the surficial geology, and the glacial history of Wright Valley.

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Volcanic Rocks of the Ross Island Area

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During the 1969–1970 austral summer, the geology of the summit areas of Mounts Terra Nova, Erebus, Discovery, Bird, Terror, and Morning were investigated. Additional work was done in the McMurdo area; on the flanks of Mounts Discovery, Terra Nova, and Erebus; and on Minna Bluff. The preliminary results of this work are as follows:

Mount Terra Nova: The summit is covered by snow and ice. Outcrop areas immediately below the summit consist of basalt, olivine basalt, and scoria. Glacial rubble consisting of basalt, trachyte, and scoria blankets most outcrops. The lower flanks of Terra Nova exhibit a few partially dissected vents and some flows that consist of olivine basalt, basalt, scoria, and pyroclastics. Hornblende basalt constitutes one of the flows of this area.

Mount Erebus: The highest outcrops investigated are just below the summit, between the summit and Fang Ridge. They consist of flows of anorthoclase trachyte porphyry (Kenyte or Antarctic Kenyte) like those that occur at Capes Royds and Evans (Treves, 1962). Outcrop surfaces show abundant evidence of wind polishing, grooving, and planation. Sulphur blebs and crusts occur on some rocks, and mirabilite (?) is present on buried surfaces of most rocks. Anorthoclase crystals, many of which are longer than two inches, are abundant. Field observations indicate that they are lag materials that weathering has freed from the fine-grained matrix of the anorthoclase trachyte porphyry flows. On the lower flanks of Mount Erebus, in the saddle between Mounts Terra Nova and Erebus, flows of black-glassy-scoriaceous-porphyritic-anorthoclase trachyte (Kenyte) occur. They resemble the glassy anorthoclase trachyte of the Cape Royds area (Treves, 1962). Locally, the black trachyte porphyry overlies a grey, massive trachyte. Loose anorthoclase crystals that weathering has released from the trachyte are also abundant.

Mount Discovery: The top of the mountain is covered by snow and ice. There are, however, numerous outcrops near the summit. Some of these were found to consist of trachyte, basalt, and basalt porphyry. In general, the trachyte is younger than the basalt. Basalt younger than the trachyte occurs on the lower slopes.

Mount Bird: A number of small outcrops occur on the broad summit, consisting either of hornblende trachyte porphyry or of olivine basalt porphyry. The hornblende trachyte is like the rocks that occur at Cape Bird (Treves, 1967).

Mount Terror: Only the broad outcrop areas to the east of the steep summit peaks were investigated. These areas were deeply covered with rubble that consisted of trachyte, basalt, and red and black scoria. Outcrops are rare and consist of basalt. Visual examination indicated that the summit areas consist of trachyte and basalt.

Mount Morning: The summit consists of small vents and flows of olivine basalt and scoria that resemble the younger basalts of the lower flanks of Mount Discovery.

The work done at McMurdo and Minna Bluff tends to confirm the results of earlier work on these and other areas (Treves, 1962, 1965, 1967, 1968, 1969). A suite of nodules from a flow in the McMurdo area was collected and will be studied.

The close support given by the helicopter pilots and men of *Burton Island* is acknowledged. These helicopters carried the writer to summit areas of all of the mountains and stood by while specimens were collected and the geology investigated.

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