in the Superior Province of the Canadian Shield. The township and adjoining areas were originally mapped by Satterly (1949, 1951, 1952) and Satterly & Armstrong (1947). The Abitibi belt has been studied by Goodwin (1968, 1973), Goodwin & Ridler (1969), Jolly (1974), 1975), and Pyke & Jensen (1976), and rocks in the area have been dated by Krogh & Davis (1971). Brief reviews of the geology are found in MacRae (1969) and Pyke *et al.* (1973).

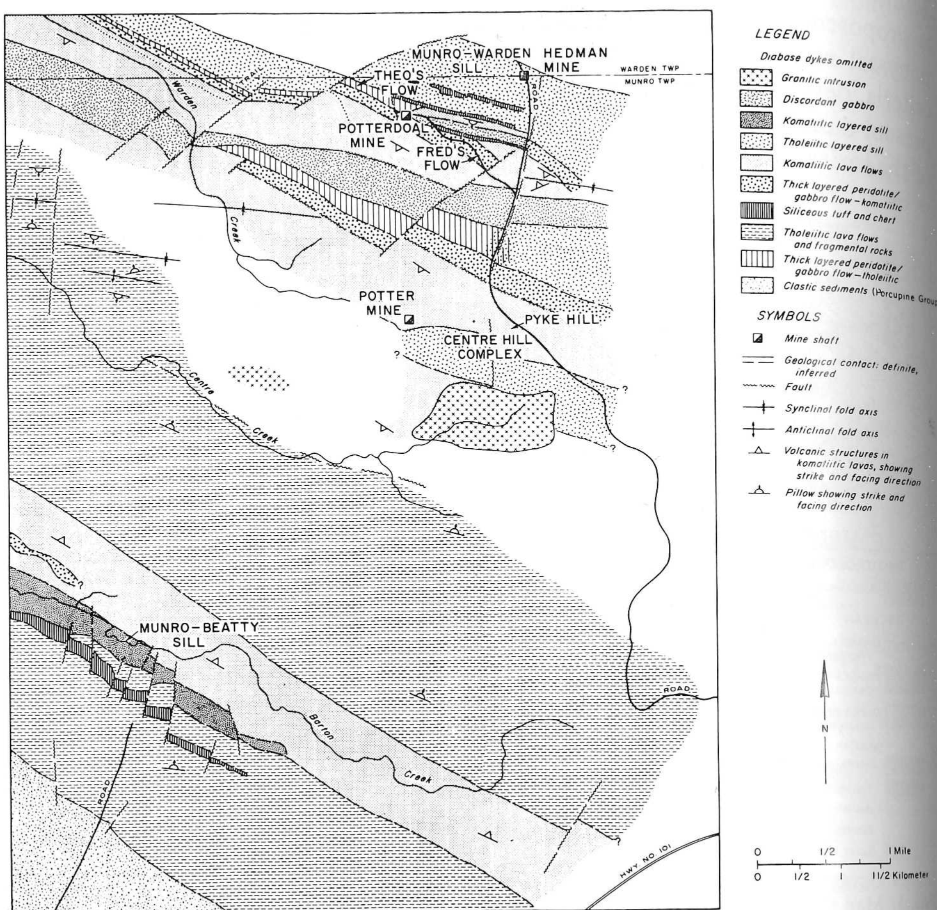

FIG. 2. Geology of Munro Township (modified from Satterly, 1951).

The predominant rocks in Munro Township (Figs. 2 and 3) are komatiitic ultramafic and mafic lavas, and tholeiitic volcanic rocks. Most abundant are thin (2 m to 20 m thick) pillowed and massive flows with relatively uniform compositions, which are interlayered with much thicker (100 m to 300 m thick) flows that are differentiated from peridotite at the base to gabbro near the top. The volcanic rocks are intercalated with thin, but persistent, bands of siliceous tuff and chert, and are intruded by (a) small peridotite sills and dikes, (b) large

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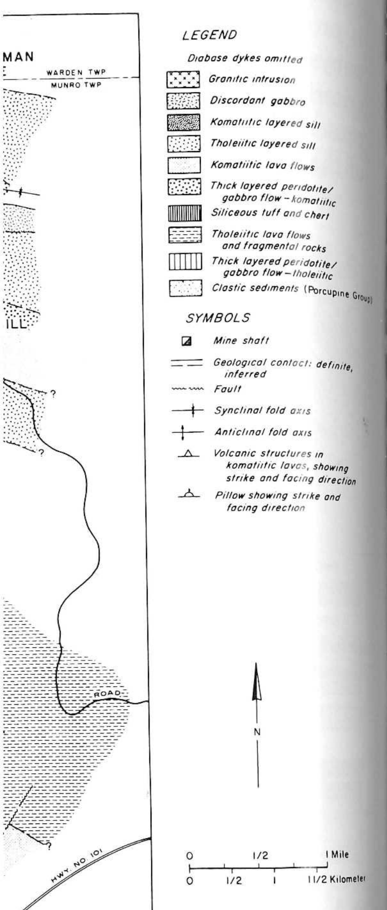

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layered peridotite–gabbro sills, (c) large discordant gabbroic intrusions, and (d) much younger (Proterozoic) diabase dikes.

All rocks except the discordant gabbros and diabase dikes are folded and disrupted by faulting. A major east-southeast fault in the northern part of the township has repeated much of the volcanic sequence. Metamorphic grade in the intensively studied parts of the township is prehnite–pumpellyite facies.

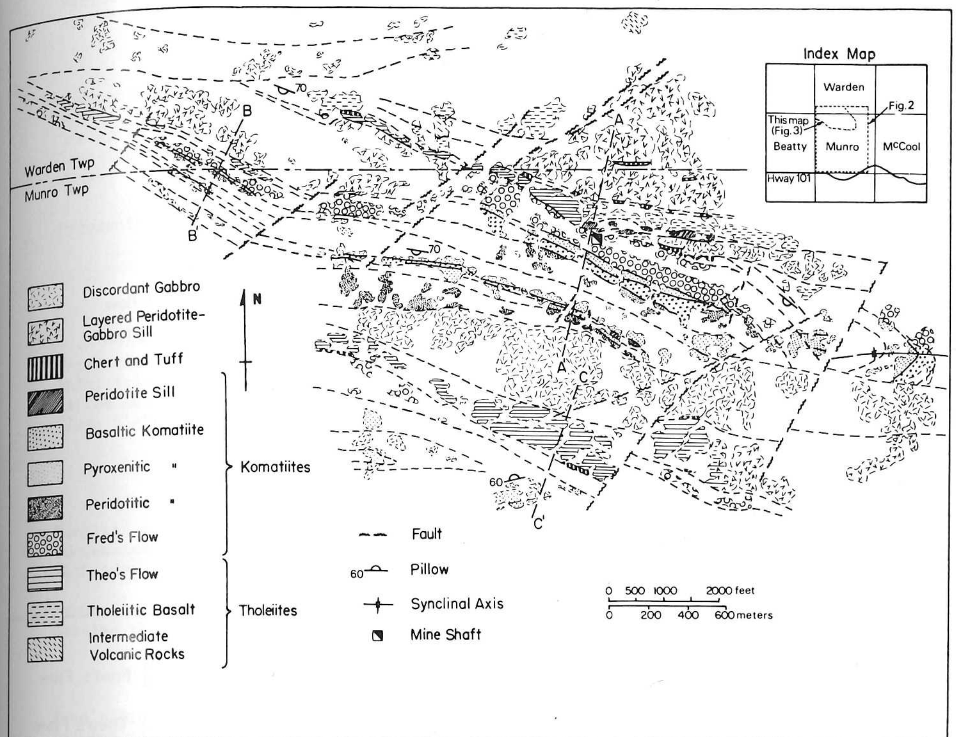

FIG. 3. Simplified geological map of the northern part of Munro Township and the southern part of Warden Township. Diabase dykes omitted.

Stratigraphy

Figure 4 shows three generalized stratigraphic sections through the volcanic pile in northern Munro Township. The central section illustrates the thickest and most complete part of the pile; the section to the west demonstrates thinning of most units and increasing abundance of mafic komatiites in that direction; and the southern section contains the same units repeated by the major east-southeast fault.

The thick basal section of basaltic and andesitic tholeiitic lava flows and fragmental rocks is overlain by komatiites of peridotitic to basaltic composition. In the southern part of the township a second sequence of tholeiites overlies the komatiites. Although a few komatiites of andesitic composition are interlayered with the upper tholeiites in the north of the township, generally there is little

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nitic komatiites form about
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s common than other types.

ES

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3) concentrated primarily on
and massive lower portions.
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end to be thicker, but shorter

zone (Flow A, Fig. 7) has a
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oriented, equant skeletal or
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may be present. The cap-rock
o 20 cm in maximum dimen-
esembles a breccia, but that
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developed at Pyke Hill, but in
p, zones of ultramafic rubble

wnwards from aphanitic cap-
(Plate 1B). The orientation of
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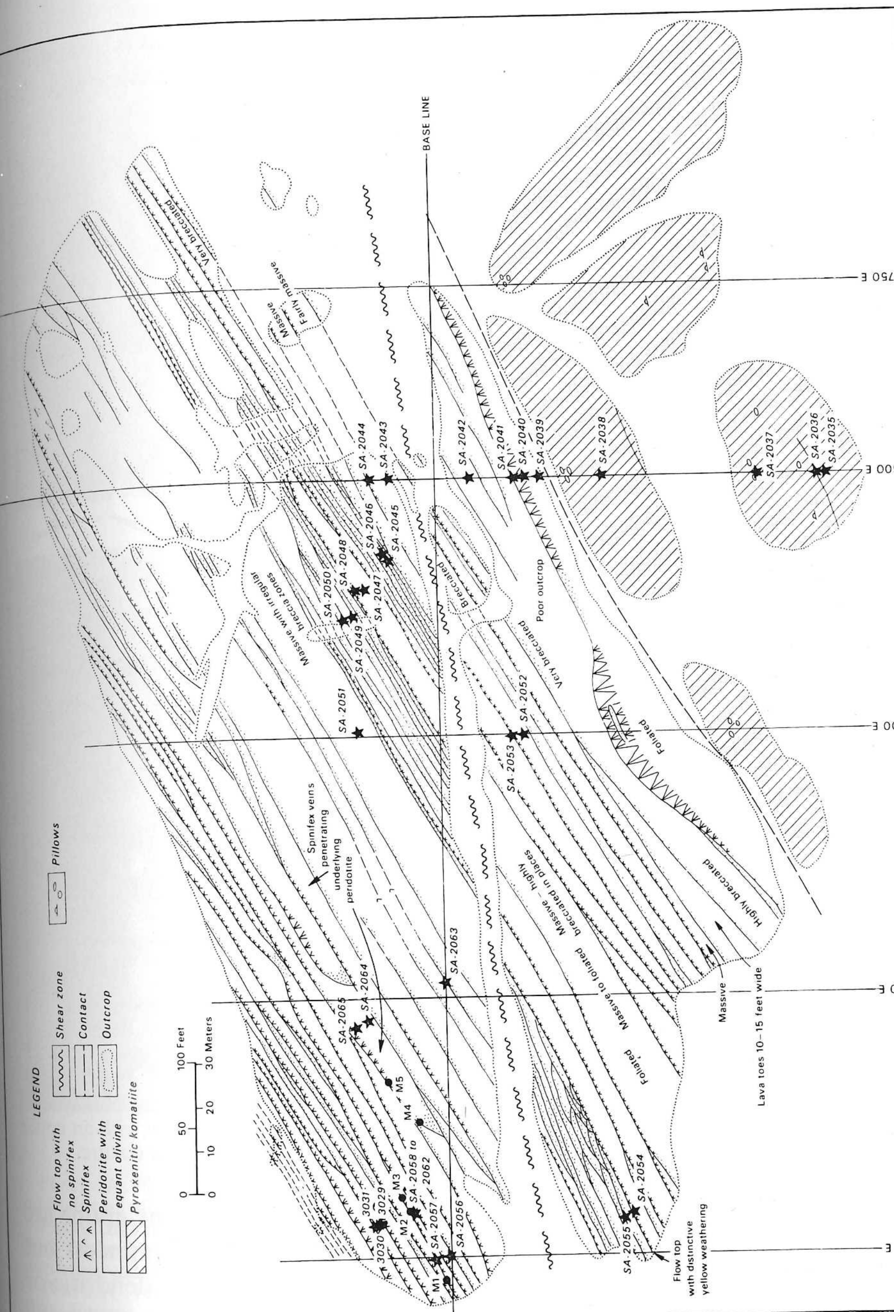

FIG. 6. Geological map of Pyke Hill, showing peridotitic komatiite lava flows, hand sample locations (*stars*), and drill hole locations (M1 to M4). (Modified from Pyke *et al.* 1973.)

The A_2 zone is in sharp contact with the underlying B_1 zone, which consists of tabular olivine grains of a more obviously skeletal habit than those of the A_2 zone, oriented parallel to the plane of the flow. The B_1 zone has a maximum thickness of about 30 cm, but may change rapidly along strike and is sometimes absent. The elongate, hollow, skeletal needles of the B_1 zone give way downwards

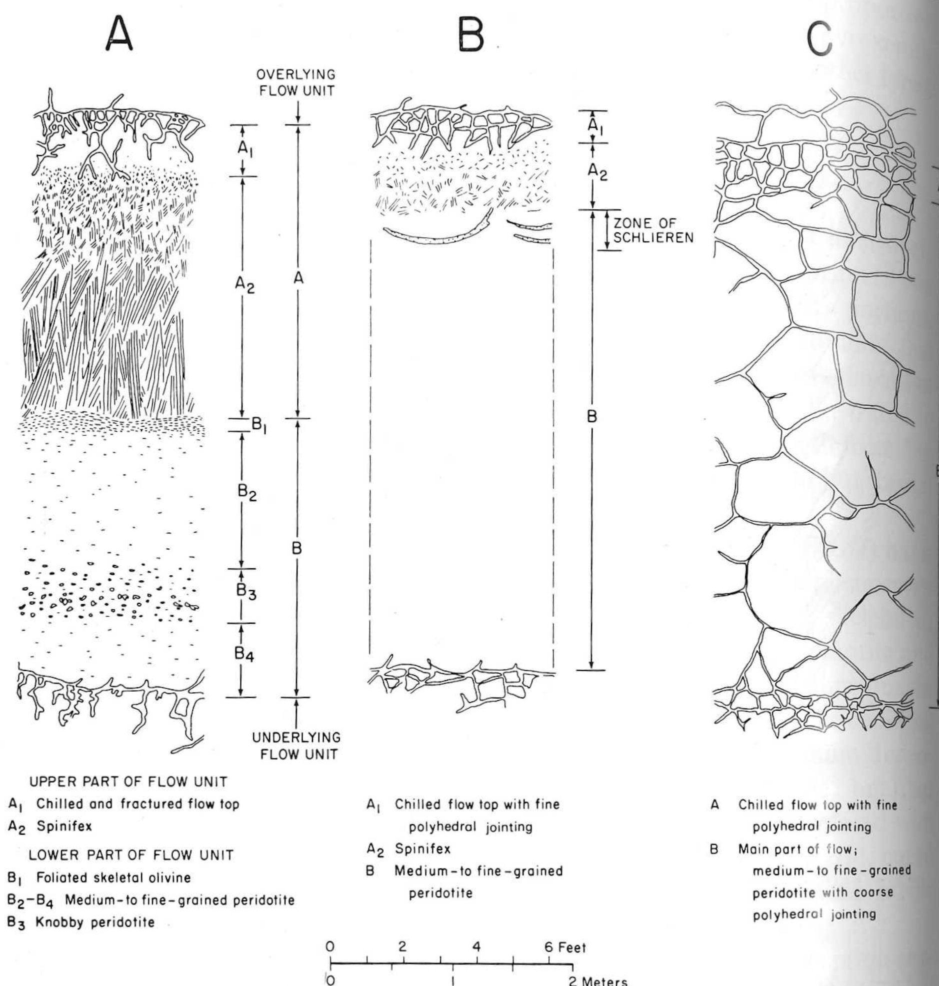

FIG. 7. Diagrammatic sections through three types of peridotitic lava flows: A, a flow with an upper spinifex zone; B, a flow with limited spinifex texture; C, a flow without spinifex texture.

to solid, more equant grains of the B_2 zone (Plate 1C). The equant grains are similar to cumulus olivine crystals in peridotites from many environments but are set in a matrix of skeletal subcalcic clinopyroxene, cruciform, dendritic or euhedral chromite, and hydrous alteration after glass. Highly elongate, partially skeletal olivine grains also are present in minor amounts. The long dimensions of these grains define a rough foliation parallel to the plane of the flow. A progres-