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A geological section through the southern part of the Ilímaussaq intrusion

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Detailed mapping of the southern part of the Ilímaussaq intrusion was initiated in 1968 with preparation of a map of the kakortokite at a scale of approximately 1:10 000 (Bohse *et al.*, 1971). Other small areas south of Tunugdliarfik have been mapped and described in detail (Demin, 1971; Demina, 1979; Steenfelt, 1981), and at present these results, together with additional mapping by S. Andersen and H. Bohse (Andersen & Bohse, 1978; Bohse & Andersen, 1981) of the area between Tunugdliarfik and Kangerdluarssuk-Lakseelv, are being compiled at a scale of 1:5000.

The information obtained, along with the mapping, on the spatial relations of the involved rock units has allowed the authors to construct two generalised profiles through the upper and lower series of rocks, respectively (figs 1 & 2).

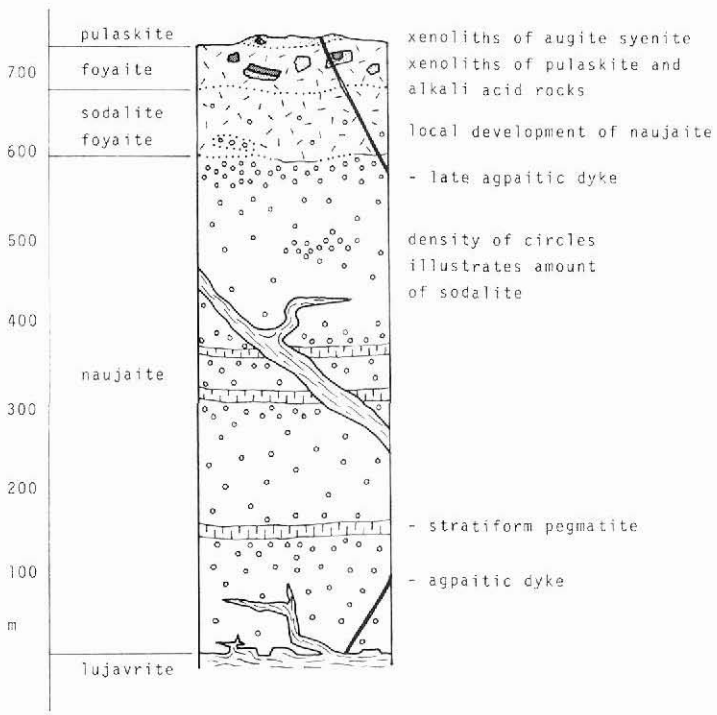


Fig. 1. Schematic profile of the upper series of the Ilímaussaq intrusion in the area between Tunugdliarfik and Kangerdluarssuk. Dotted lines indicate transitional boundaries.

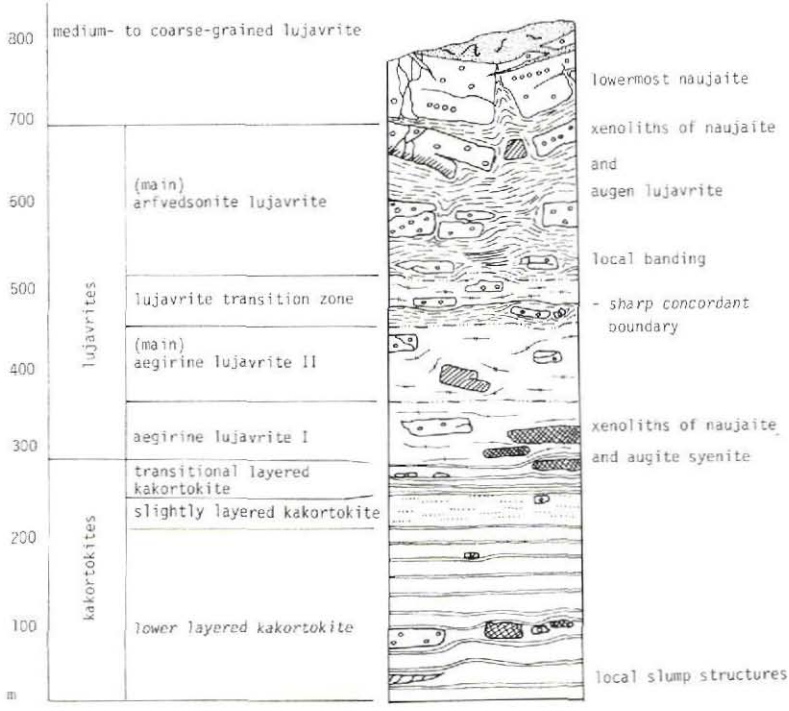


Fig. 2. Schematic profile of the lower series of the Ilímaussaq intrusion in the area from Agpat to Kringlerne.

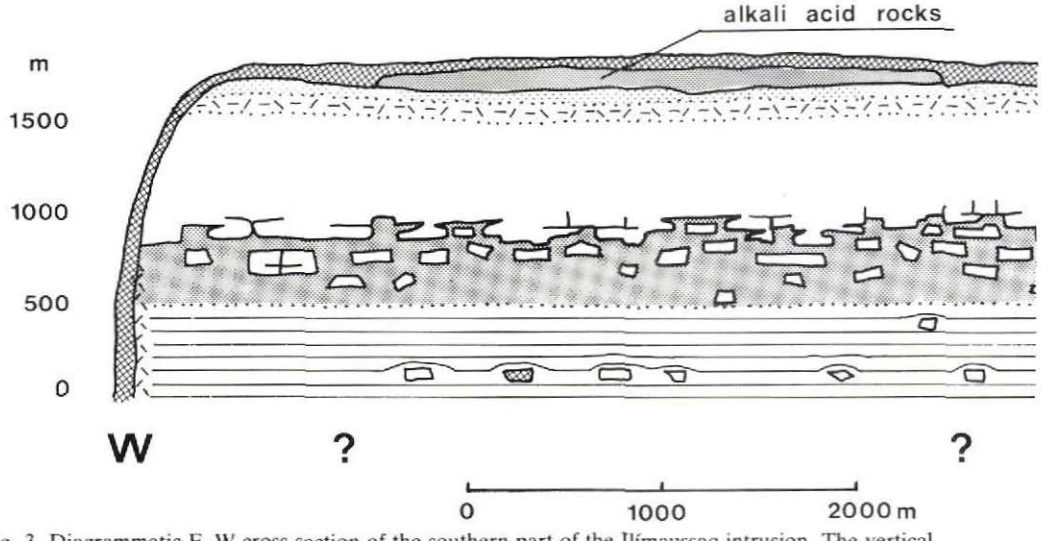


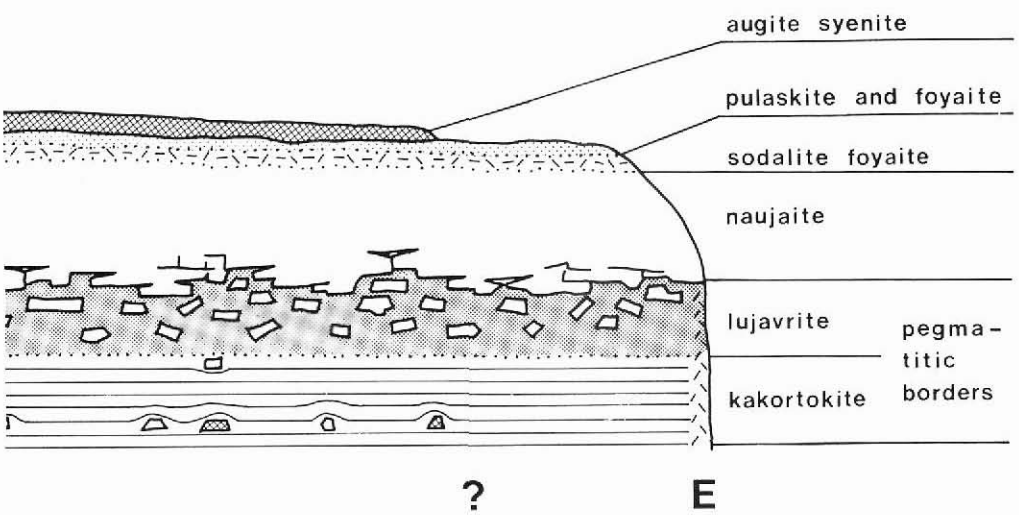
Fig. 3. Diagrammatic E–W cross-section of the southern part of the Ilímaussaq intrusion. The vertical

Table 1. Estimated thicknesses and volume percentages of the rock units of the southern part of the Ilímaussaq intrusion

	Thickness m			volume % of individual series	volume % of complete sequence
	Average this paper	Ussing (1912)	Ferguson (1970)		
Upper series					
alkali acid rocks	>50			not incorporated	
pulaskite	20	10-30		3	1
foyaite	60	0-10		8	4
sodalite foyaite	80	2-150	60	10	6
naujaite	600	200-600	600-800	79	42
	760			100	53
Lower series					
m-c lujavrite	50			not incorporated	
main arfvedsonite lujavrite	150			23	11
lujavrite transition zone	60		>200	9	4
upper aeg. lujavrite II 35 m lower arfv. lujavrite 25 m		>600			
main aegirine lujavrite II	85		150	13	6
aegirine lujavrite I	80			12	6
transitional layered kakortokite	40			6	3
slightly layered kakortokite	35		>400	5	2
lower layered kakortokite (exposed part)	210			32	15
	660			100	47

Further, a new and more accurate estimation of thicknesses and volumes of the rock sequence is presented in Table 1. Earlier estimates of this kind have been given by Ussing (1912) and Ferguson (1970). The rock units mentioned are described by the authors elsewhere in this volume (Bohse & Andersen; Steenfelt).

The alkali acid rocks and the M-C lujavrite are excluded from the estimates of Table 1, because their original dimensions have been much reduced by erosion.



and horizontal scales are equal.

The thicknesses and volumes estimated for the units of the lower series (Table 1) include varying amounts of naujaite and augite syenite xenoliths. Xenoliths of naujaite may constitute up to 20 per cent of the volume of the lujavrite (fig. 2).

The average thickness of the main arfvedsonite lujavrite is difficult to estimate because the real thickness varies from a few to 250–300 m, and the contact against the overlying naujaite is extremely irregular.

As an approximation in the volume calculation, the indicated thicknesses are assumed to remain constant throughout the southern part of the intrusion.

An almost complete cross section through the southern part of Ilímaussaq is visualised by combining the two profiles of figs 1 & 2. In the reconstruction (fig. 3), illustrating the vertical as well as the lateral extent of the main rock units, all structural disturbances caused by later magmatic or tectonic events are disregarded. The indicated extent of the augite syenite and of the alkali acid rocks of the roof is entirely arbitrary.

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