

Memorial of Fredrik William Houlder Zachariassen¹
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PAUL B. MOORE

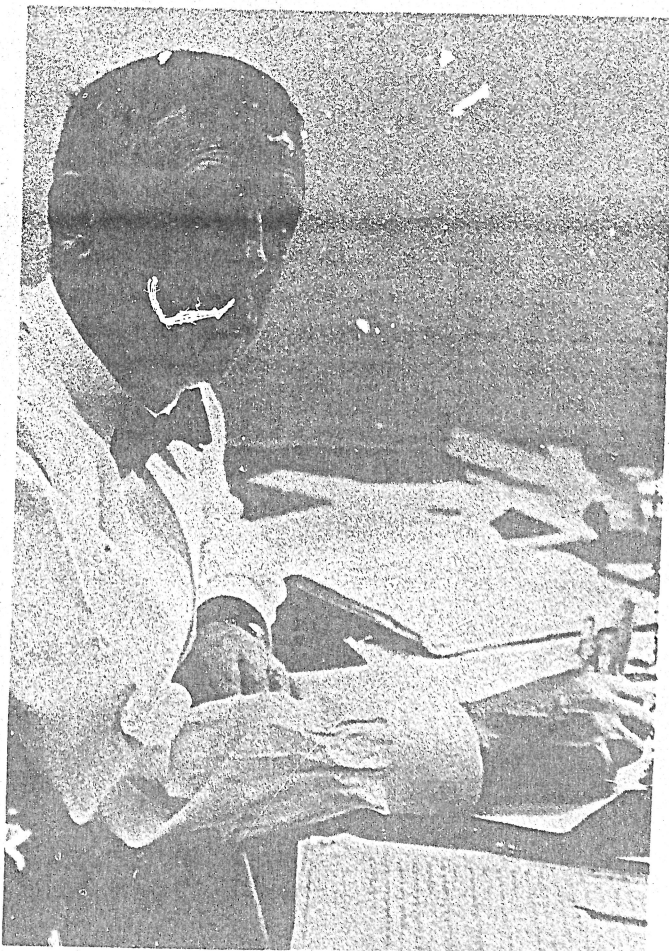
*Department of the Geophysical Sciences
 The University of Chicago
 Chicago, Illinois 60637*

Fredrik William Houlder Zachariassen was born in Langesund, Norway on February 5, 1906. As an American he was called by friends and colleagues "Willie" or "Zach". This created problems. A year before his death he dispelled this confusion while a lively host at a banquet: "those who have been to bed with me call me Willie, those who have not call me Zach." Such humor, never malicious but always piquant, marked his fine qualities as a human being.

What finer place to be born than at the mouth of the Langesundfjord, a byword among mineralogists of bygone years? Studying a Cappelen map of Norway (what better maps in this world exist, with all their detail, preciseness and topography) one sees that Langesund is a mere 15 kilometers from Brevik, that center of the classic nepheline syenites and foyaites which originally yielded over 30 new species of interesting minerals peculiar to such assemblages (probably the oddest being nordenskjöldine, $\text{CaSn}(\text{BO}_3)_2$, with the dolomite structure). One can picture the young inquisitive Zachariassen rowing from isle to isle, studying the rocks and minerals once described by the grandfather of his future bride, the famous W. C. Brøgger. Although Willie didn't name any Langesundfjord minerals (apparently that was too pedestrian an activity for him, or was it that Brøgger didn't leave a stone unturned?), he revealed the crystal structures of several of them: phenakite, eudidymite, epididymite, thortveitite, titanite, eudialite, hambergite. Of minerals from different soil we could add ten more, and of synthetic inorganic crystals increase that number by an order of magnitude (he didn't dabble with organics). This is very ambitious realizing that most of them were done on slide rule and with X-ray techniques before 1945! Only a genius could do that. One can imagine the

seeds of Zach's formative years nourished by Langesundfjord soil: the clefts of Helgeroa, the islets of Skudesundskjaer, Laaven, Stokø, Lille Arø, Mittel Arø, Store Arø. He delighted in amusing his American cognoscente of the Norwegian pronunciation of *rosenbuschite*, a Laaven mineral.

Yet he went much further than mere mineralogy and mineral chemistry. In 1932, a definitive publication on the structure of glass appeared. In 1945, the profound book, "Theory of X-ray Diffraction in Crystals". Then silence for several years. That was



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