The customary reliability index for *hk*0-refinement (314 observed independent reflections) was 9·99 %, for 0*kl*-refinement 6·48 % (173 refl.) and for *h*0*l*-refinement 13·33 % (145 refl.).

As seen from the schematical representation of the structure (fig. 1) the silicate framework is formed of spiral-like chains. This represents a new variety among the chain silicates having six tetrahedra in a period unit of tetrahedral structure. The chains are bound together by Sn ions (coordinated by six oxygen atoms belonging to the chains) and by Ca ions (coordinated by four oxygen atoms belonging to the chains and by two oxygen atoms belonging to the water molecules).

A detailed description of the structure of stokesite will be given in the near future in *Bull. Comm. géol. Finlande*. This will include the structure factor tables, electron density maps, difference maps, and Patterson projection on (001) as well as the most important interatomic distances and angles.

Acknowledgements. It is a great pleasure to the author to thank Dr. P. Gay under whose supervision this work was done. His thanks are also due to Dr. C. Kelsey, Dr. M. Bown, and Mr. K. Rickson for much helpful advice during the work, to Dr. M. V. Wilkes, who kindly gave permission to have the calculations performed in EDSAC II (in the Mathematical Laboratory of the University of Cambridge) and to Mr. M. Wells, who wrote the programmes. The author is greatly indebted to Prof. P. Eskola and Dr. V. Marmo, the director of the Geological Survey of Finland, without whose help he would not have had opportunity to become acquainted with the methods in crystal structure analysis. This work has been financially supported by the Tekniikan Edistämissäätiö-Foundation (Helsinki, Finland) and by the Geological Survey of Finland to whom the author is very grateful.

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The cleavage of periclase

MANY standard mineralogical texts state that there is an octahedral cleavage in periclase, in addition to the perfect cubic cleavage. Thus Winchell (1931, 1951) and Larsen and Berman (1934) refer to perfect {100} and poor {111} cleavages. Dana, in the 6th edition of the *System of mineralogy* (1892), described the octahedral cleavage as 'less distinct'.[1] Palache *et al.*, in the 7th edition (1944), describe it as 'imperfect' (a description used also in Deer, Howie, and Zussman, 1962), and state that periclase sometimes exhibits a parting {110} on glide faces. Of isomorphous oxides, an octahedral cleavage is very doubtfully recorded for CdO (Wittich and Neumann, 1901); manganosite sometimes exhibits a parting in {111} directions due to zincite inclusions (Frondel, 1940).

The NaCl-structure of these minerals is unlikely to impart an octahedral cleavage. Most petrographers encounter periclase only as small crystals, often partly altered to brucite, in thermally metamorphosed magnesian limestones. Recently P. M. Llewellyn, working in the H. H. Wills Physics Laboratory at the University of Bristol, has prepared large batches of crystalline magnesium oxide, using the arc melt method. This has afforded an opportunity to break up quantities of material and has revealed the presence of a dodecahedral parting, as recorded by Seifert (1926), in addition to the perfect cubic cleavage. No traces of octahedral planes have been found on the cleavage fragments, nor any angular relationships suggesting the development of the spinel twinning described by Seifert. Wachtman and Maxwell (1957) have recently recorded slip on octahedral planes, in addition to those of the cube and dodecahedron, but it would seem that reference to an octahedral *cleavage* should be expunged from a statement of the properties of periclase, which shows a cubic cleavage and dodecahedral parting as stated, for example, by Moorhouse (1959).

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[1] An octahedral cleavage is not mentioned in the 5th edition (1868).