number of single [SiO$_n$] polyhedra, rings, chains and layers which are linked to a multiple anion of the same dimensionality (1,2,3,4,5,6,7,8,9,10,... for oligotetrahedra, 1,2,3,4,5,... for tetrahedral chains, 1,2,... for tetrahedral rings and layers; 1 for frameworks)

P : chain periodicity, i. e. the number of [SiO$_n$] polyhedra per repeat unit in the linear part of the fundamental chain of a silicate anion (1,2,3,4,5,6,7,8,9,10,11, 12,...,24,... for tetrahedral single chains; 1,2,3,4,5,6,... for tetrahedral double chains; 1,2,3,4,5,6,7,8,9,... for tetrahedral layers; 1,2,3,4,5,6,7,8,9,... for tetrahedral frameworks)

P^c : ring periodicity, i. e. the number of [SiO$_n$] polyhedra in the non-branched part of the fundamental ring (3,4,5,6,7, 8,9,10,11,12,... for tetrahedral single rings; 3,4,5,6,... for tetrahedral double rings).

Since all these parameters have a crystallochemical basis the classification reflects the chemical, structural and stability relations between silicates.

The classification of the silicates containing [SiO$_4$] tetrahedra (CN = 4) is presented in tabular form. As far as structures are known, a model of the silicate anion of one example of each family of silicates with a given set of parameter values is shown. The models are built by connecting solid tetrahedra of 1cm edge length.

19.2–13 A NEW DIRECT METHOD FOR THE INTERPRETATION OF SINGLE CRYSTAL ROTATION PHOTOGRAPHS.

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It is generally held that the direct method of the interpretation of X-ray rotation photographs is not recommendable, and that the interpretation of such photographs is only possible through the use of reciprocal lattice cylindrical coordinates. In previous papers 1 and 2 (1. Ahmed and Georgeoura, Z. Kristallogr. (1963) 118, 273, 2. Ahmed and Georgeoura, Z. Kristallogr. (1963) 118, 434), we have shown that the direct method gives an efficient means of indexing Laue photographs of all kinds. The method is extended, in the present work, to the case of rotation photographs and is found to be equally successful: in flat-film rotation photographs, the unit cell dimension can be determined directly from the coordinates, relative to axes in the film itself, of any spot on the hyperbolae obtained (instead of first determining the nose of the hyperbola). In cylindrical film rotation photographs, the unit cell dimension can be determined from the position of the layer lines, as is usually done. In all cases, whether flat or cylindrical films, there is no need for charts or tables. Moreover, if the rotation zone axis [pqr] , which is vertical, is not known; it can be determined together with the unit cell dimension and at the same time, the photograph can be indexed. This is helpful in determining crystal orientation.

We have dealt with cubic crystals throughout, but other crystal systems may be treated, using the transformations of paper 1.