308. STICHTITE *(Carbonatohydrate of Magnesium, Chrome, and Iron).*

This is beyond doubt an unrecorded mineral species which has hitherto been known under the name of kammererite, and is referred to by the writer under that appel-

lation in the "Catalogue of the Minerals of Tasmania," 1896. A specimen was exhibited by Messrs. Stitt and Cullingsworth at the Tasmanian Exhibition held in Launceston in 1891, and named by these gentlemen kammererite, which term has been retained until the present time. This error was doubtless caused through its remarkable similarity to the mineral indicated, both as regards colour and general physical characters, a resemblance so close, in fact, as to be readily excusable, since the supposed identity was made out without a complete analysis. It has been aptly referred to by Mr. R. Sticht in a letter to the writer as "masquerading under the name of a massive form of kammererite." The writer has great pleasure in dedicating this new mineral species to Mr. Robert Sticht, the well known and able general manager of the Mt. Lyell Mining and Railway Company, who has rendered material assistance in the production of this Catalogue. At the same time it is necessary to state that its detection as a substance of special interest is due to Mr. A. S. Wesley, the chief chemist to the Mt. Lyell Company, who, by the analyses now published of a portion of a specimen contained in his mineral cabinet, and by subsequent research, established its specific distinction from any mineral species hitherto described.

It is related, and may be said to belong, to the genus pyroaurite (R_2''' O_3, 6Mg O, C O_2, A3 H_2 O), the greater portion of the Fe_2 O_3 being replaced by Cr_2 O_3, or otherwise a carbonato-hydrate of Mg, Cr, and Fe, developed from the alteration of the numberless minute chromite crystals and particles in the presence of serpentine.

An analysis gave the following result:—

		Per cent.
Cr_2 O_3	=	11·5
Fe_2 O_3	=	9·0
Mg O	=	36·0
C O_2	=	7·2
H_2 O	=	36·1
		99·8

(R. Sticht.)

Answering to the formula (Cr Fe_2) O_3, 6Mg O, Co_2 13 H_2 O, in which Cr_2 O_3 : Fe_2 O_3 = approximately 3 : 2. Hardness = 1·5. Specific gravity (determined by Mr. L. K. Ward) = 2·20; that of a second and almost pure example

(that is, with only two or three small specks of yellow-green serpentine) = 2·12.

At the same time the specific gravity is desirable of an absolutely clear and fresh specimen. The streak is a very pale lilac to almost white. Its wet chemical reactions are that it is soluble in HCl with effervescence, which is very brisk when the acid is heated. It affords an intensely bright-green solution with a limited flocculent turbidity as a precipitate. The pyrognostic characteristics are that it assumes a bronze colour when heated on coal, and then becomes perceptibly magnetic.

This new species of mineral is only known to occur in the amorphous condition. It may be foliated to compact, and is not rarely granular. Its colour is a most beautiful and intense lilac shade, and is thus of considerable attractiveness. In respect of colouration it stands alone amongst the minerals of this State. It weathers on exposed surfaces to a brown tint, and is considerably roughened by numerous slightly protruding fragments of partially decomposed chromite. The smaller samples of the stichtite often have as a nucleus one or more minute fragments of the chromite, which thus to an extent reveal its origin. In habit it forms irregularly-shaped masses, veins, and blebs in a pale yellowish-green serpentine, more rarely showing ill-defined bands of the new mineral. At times the serpentine is irregularly speckled with patches of lilac-coloured stichtite, which vary in size from extremely minute to 10 or 12 mm., and then form mineral specimens of a unique character and peculiar beauty, the green of the serpentine contrasting strongly and favourably with the lilac stichtite.

Mr. L. K. Ward, who recently visited the locality of this interesting discovery, has kindly supplied the following note:—

"This mineral forms irregularly-shaped masses, veins, and blebs in serpentine at Dundas, in the neighbourhood of the Adelaide Mine. Weathered surfaces are deep-brown, but the fresh mineral varies in colour from lilac or rose-pink to deep-purple. It is at this place usually associated with crystalline chromite. The chromite crystals appear to have in many cases served as nuclei, about which the stichtite has developed. Its distribution is sporadic. Microscopically it appears to be built up of radiating plates and tufts.

Optical Properties in Thin Section.

Colour—Pale-rose to brownish-rose.
Pleochroism—Absent.
Birefringence—Strong, giving 2nd to 3rd order colours, in section not exceeding 0·03 mm. in thickness.
Extinction of Fibres—Straight.
Optical Character (measured with respect to the elongation of the fibres)—Positive.
Structure—Fibres and tufts, sometimes curved, radially disposed about nuclei of chromite. The radiating aggregates are wrapped round with a mosaic of small scales and fibres.

"NOTE.—Optical properties require further investigation. Only one thin section available for examination."