# DESCRIPTION AND ANALYSIS OF A NEW SPECIES OF MINERAL, PETTERDITE, A NEW OXYCHLORIDE OF LEAD.

By W. H. Twelvetrees.

This apparently absolutely new chemical combination occurs in attached crystal groups in a quartz gangue containing disseminated pyrites, in the form of somewhat thin hexagonal plates, which are usually minute in size (about 5 millemetres in diameter), but occasionally reach 9 mm. dia., and, still more rarely, a larger size.

Macles are not rare, irregularly attached and implanted on each other, and on the matrix.

*Fracture :*—Rather irregular, brittle and dull.

*Colour :*—White, passing to pale grey on the surface.

*Streak :*—White.

*Lustre :*—Dull, inclined to rough, waxy, opaque, shining on the edges of the crystals.

*Hardness :*—1·5 to 2.

*Gravity :*—7·16, determined by Mr. W. F. Ward, Government Analyst.

*Before blowpipe :*— On coal OF. forms white to yellow mass. RF. a bead of metallic lead is easily produced without fluxes.

*Heated in forceps*, strongly decrepitates.

*Flame :*—With OCu distinctly azure blue. In powder with $H_2SO_4$ dull greenish blue.

*In cold $HNO_3$* dissolves quietly and very slowly ; in hot acid dissolves slowly, giving with $AqNO_3$ a thick, curdy precipitate.

The powder heated before blowpipe gives slight odour of $As_2O_5$.

Analysis, kindly made by Mr. O. E. White, of Hobart :—

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| PbO | = 74·04 |
| $As_2O_5$ | = 2·60 |
| $P_2O_7$ | = 2·10 |
| $Sb_2O_5$ | = ·50 |
| $Cl^-$ | = 20· |

Locality.—In the superficial workings of the Britannia Mine, Zeehan.

It is evidently rare, and, so far as known, confined to the locality mentioned. One remarkably fine specimen contains about 200 perfectly formed implanted crystals. The accompanying illustration fairly represents this specimen. It is an attractive mineral when in large groups, as shown, and is easily distinguishable from the more abundant sulphate and carbonate of lead. It is occasionally associated with fine groups of campylite.