INTRODUCTION TO JAPANESE MINERALS

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"INTRODUCTION TO JAPANESE MINERALS"

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1970

Specific gravity. 4.29 (calc.).

Chemical composition. Cu 37.2, Ag 0.1, Fe 12.5, Zn 1.2, Sn 16.5, S 31.2 = 98.7%.

Etching. HNO_3, stains brown and brings out mozaic texture, other ordinary reagents negative.

Occurrence. The mineral was first found in the dump of Konshō mine, Okayama Prefecture, Japan. The associated minerals were stannite, chalcopyrite, cassiterite, galena, tetrahedrite, quartz and siderite. The maximum grain size is about 1.5 mm in diameter. The mineral was found in copper-tin-sulfide ores from xenothermal ore deposits of four other mines, i.e. Akenobe, Ikuno and Tada mines, Hyogo Prefecture and Fukoku mine, Kyoto Prefecture, Japan (KATO & FUJIKI, 1969).

Name. The name was given in allusion to its similarity to stannite.

Remarks. This mineral was at first called brown stannite (YAMAGUCHI, 1939).

References. KATO, A. (1969); Stannoidite, $Cu_5(Fe,Zn)_2SnS_8$, a new stannite-like mineral from the Konjo mine, Okayama Prefecture, Japan. Bull. Nat. Sci. Mus. Tokyo, **12**, 165–172.

KATO, A., and FUJIKI Y. (1969); The occurrence of stannoidites from the xenothermal ore deposits of the Akenobe, Ikuno and Tada mines, Hyōgo Prefecture, and the Fukoku mine, Kyoto Prefecture, Japan. Mineral. Journ., **5**, 417–633.

26. Wakabayashilite $(As, Sb)_{11}S_{18}$

Crystal system. Monoclinic.

Possible Space group. $P2_1$–C_2^2 or $P2_1/m$–C_{2h}^2.

Unit cell. a_0 25.17±0.04Å, b_0 6.48±0.01Å, c_0 25.24±0.08Å, β 120°00′.

Z. 6.

Refractive indices. Could not be measured, but are close to those of orpiment.

δ. Very high.

Extinction. Parallel to b-axis.

Plecchroism. Very weak.

Colour. Golden to lemon-yellow; grayish white (parallel to fiber), purplish gray white (perpendicular to fiber) under reflected light.

Lustre. Silky (aggregate of fibers) or resinous (single crystal).

Streak. Orange yellow, turns orange by grinding.

Cleavage. (100); (010) and (101) perfect, flexible.

Hardness. About 1.5.

Specific gravity. 3.96 (meas., White Caps), 4.06 (calc., White Caps, using Sb-richer analysis), 4.05 (calc., White Caps, using Sb-poorer analysis).

Chemical composition. Electron microprobe analyses of inner and outer parts of one crystal (Nevada) gave As 52.3 · 54.5, Sb 8.3 · 5.7, S 39.0 · 39.5 = 99.6 · 99.7%, respectively.

Occurrence. The mineral occurs as minute fibers elongated along b-axis up to 0.5 cm long in druses of quartz, forming felt-like aggregates, at Nishinomaki mine, Gumma Prefecture, Japan.

The associated minerals are realgar, orpiment, stibnite and pyrite. The second occurrence was found in U.S.N.M. specimens from White Caps mine, Manhattan, Nevada. It occurs in fibers up to 2 cm long forming parallel aggregates or prisms embedded in calcite, in association with realgar and orpiment (Pl. 3b).

Name. The name is for the late Y. WAKABAYASHI (1874–1943), mineralogist of Mitsubishi Mining Company.

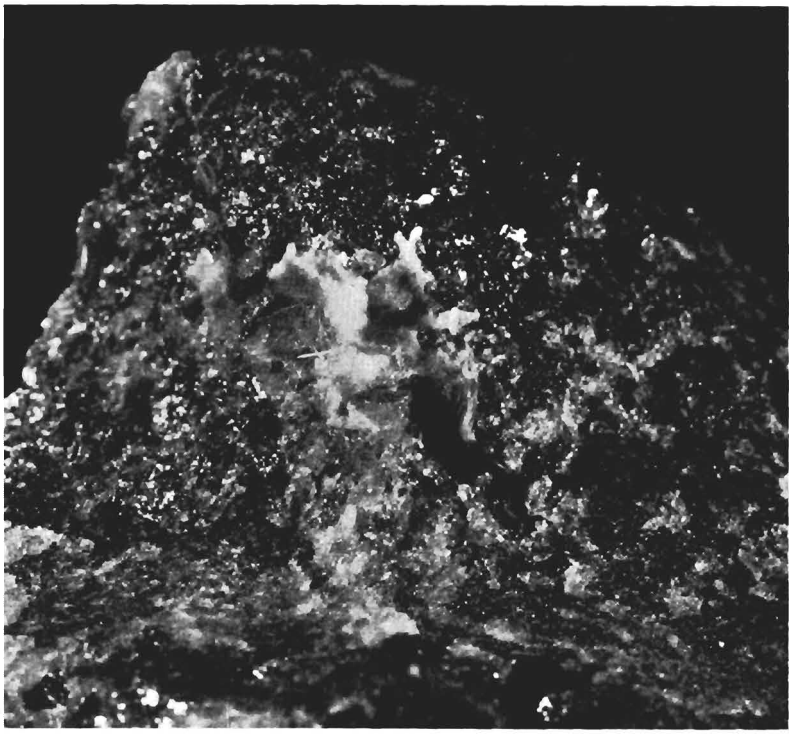

Fig. 30. Wakabayashilite, Nishinomaki mine, Gumma Prefecture(SAKURAI Collection) ×2.4.

Remarks. The wakabayashilite from Nishinomaki and White Caps mines were originally studied by A. KATO, K. SAKURAI and K. OHSUMI.

The mineral and the name were approved by the Commission on New Minerals and Mineral Names, IMA. But the full report of this mineral has not yet been published.

27. Imogolite $1.1SiO_2 \cdot Al_2O_3 \cdot 2.3\text{–}2.8H_2O$ or $(Al_8O_4 \cdot OH_{20} \cdot 4H_2O)_2(Si_8O_{10} \cdot OH_4)$

Crystallographic properties. Imogolite appears in a paracrystalline state forming threads with diameter of 100 to 300Å, which consist of the chain units with the repeat distance of 8.4Å and with the mean interchain separation of 17.7Å.

Refractive indices. 1.48–1.49.

δ. Very weak double refraction can partially be observed.

Colour. Colourless.

Specific gravity. 2.63–2.70 (meas.), 2.70 (calc.).

Occurrence. Imogolite occurs as a clay fraction of the soil "Imogo" formed by weathering of pumice and glassy volcanic ash at Hitoyoshi Basin, Kumamoto Prefecture, Japan, and in macroscopic gel films in the interstices of weathered pumice grains at Kitakami, Kanuma and Imaichi in northern to central Honshu, Japan.