

13. Sulphur Crystals from the Yakeyama Volcano.

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(Read December 16, 1952.—Received March 20, 1953.)

Sulphur ores of the Yaake-yama volcano were once mined near the top of the Jigokudani. The mining operation here seems to have been carried out many years ago on a very small scale, and the area is, therefore, entirely in ruins at present. In the beginning of August, 1949, some specimens of sulphur ores were obtained at this place by one of the writers (T. Ichimura) who had intended to carry out his field work together with H. Tsuya. These specimens were mineralogically investigated by the writers, and the occurrence of many crystals characterized by unusual parallel intergrowth was confirmed by H. Minato.

Sulphur ores collected at this place have generally a massive form with a characteristic yellow color and a somewhat resinous luster. When sulphur crystals occur in druses, they reveal a bellow-shaped parallel intergrowth which is repeated in the direction of *c*-axis.

The measurement of angles was carried out by using the B-type of V. Goldschmidt's two circle goniometer. The crystals selected for this purpose are generally 1-2 mm. long and 0.3-0.5 mm. across, having well reflecting faces.

(1) Simple crystals:—After the examination of several single crystals, two different kinds of form were found. Of these, two well-formed crystals were used for the measurement of angles.

(i) Type A:—It is bounded by eight $p(111)$ faces and belongs to the most simple form of sulphur crystals (Figs. 1, 4).

(ii) Type B:—The crystal is built up of two kinds of face, viz., $p(111)$ and $n(011)$ (Figs. 2, 4). In such a case, p is represented by well-grown pyramids and the edges between these faces are truncated by n . This is also a simple form common to sulphur crystals taken out from druses.

(2) Bellow-shaped crystals:—An abnormal form is frequently

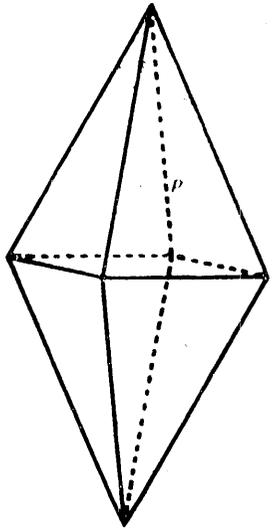
 $p(111)$.

Fig. 1. Native sulphur from the Yake-yama volcano.

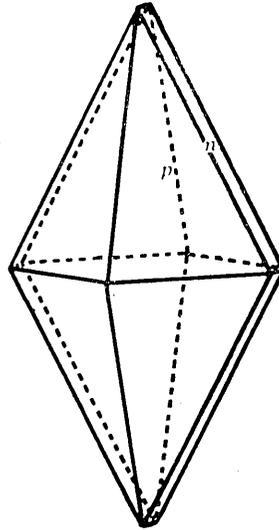
 $p(111), n(011)$

Fig. 2. Native sulphur from the Yake-yama volcano.

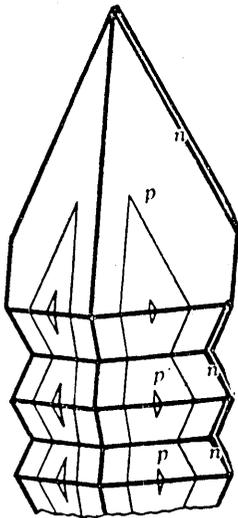
 $p(111), n(011)$.

Fig. 3. Native sulphur from the Yake-yama volcano.

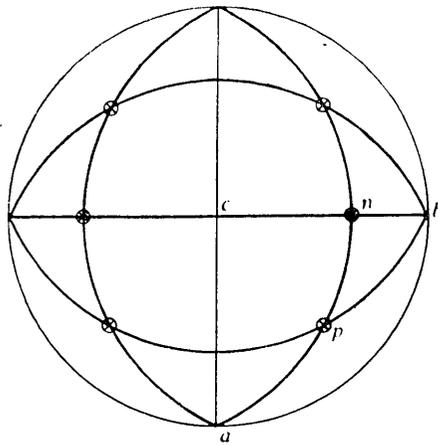
 $p(111), n(011)$.

Fig. 4. Native sulphur from the Yake-yama volcano.

shown by bellow-shaped crystals resulting from a parallel intergrowth. The sulphur crystals of this type is also a combination of $p(111)$ and $n(011)$, but it has a peculiar form which was generated by a bellow-shaped parallel intergrowth, exhibiting a prismatic habit and being elongated in the direction of c-axis (Figs. 3, 4). The crystal always bends to the front, because (111) and $(\bar{1}\bar{1}\bar{1})$ or $(\bar{1}\bar{1}\bar{1})$ and $(\bar{1}\bar{1}\bar{1})$ are highly developed at its upper or lower part respectively as compared with the imperfectness of $(\bar{1}11)$ and $(\bar{1}11)$ or $(11\bar{1})$ and $(11\bar{1})$.

The occurrence of such a type of crystal seems to be uncommon, and the presence of skeleton crystals yields remarkable striations on each face.

The result of goniometric measurement is shown in the following table. Angle table of the native sulphur from the Yake-yama volcano.

Faces	Obs. val.		Cal. val.*		N**
	ρ	φ	ρ	φ	
$p(111)$	71°35'	50°47'	71°40'	50°51'	16
$n(011)$	62 26	0 04	62 18	0 00	4

* After the Winkeltabelen.

** Numbers of the faces of measured.

13. 焼山火山産の硫黄結晶

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焼山火山産硫黄結晶の品洞内には、小さな硫黄結晶が沢山叢生している。それ等の硫黄結晶には3通りの型があり、(i) $p(111)$ よりなるもの、(ii) $p(111)$ と $n(011)$ とよりなるもの及 (iii) 蛇腹状の平行連晶をなすものが認められる。(iii) の場合は最も多く、 $p(111)$ と $n(011)$ との集合体であるが、 (111) と $(\bar{1}\bar{1}\bar{1})$ 又は $(\bar{1}\bar{1}\bar{1})$ と $(\bar{1}\bar{1}\bar{1})$ とが良く發育し、その代り、 $(\bar{1}11)$ と $(\bar{1}\bar{1}\bar{1})$ 又は $(11\bar{1})$ と $(11\bar{1})$ とが不完全で、此形が連晶をなし、主軸の方向に蛇腹状をなし延びている点に著しい特徴を有する。