

*Note on the pleochroism of Adamite.*¹

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THE mineral adamite ($Zn_3(AsO_4)_2 \cdot Zn(OH)_2$), discovered by C. Friedel in 1866 on specimens from Chañarcillo, Chile, has since been found at only two other localities, namely Cape Garonne in France and Laurion in Greece.² At the original locality it would appear to be of rare occurrence, since in the literature mention is made of only two specimens.

It was therefore of interest to find in the British Museum collection a good specimen of adamite from Chañarcillo. This was found amongst the hornsillers, and the associated adamite had been thought to be fluorite, which indeed, at first glance, with its violet colour and good cleavage, it closely resembles in appearance. The crystals are remarkable by reason of their very strong pleochroism, and as this feature of adamite has previously received no mention it has been thought worthy of placing on record.

This specimen (B.M. No. 44459) was purchased for the museum in 1871, and, under iodembolite, has already been mentioned in this Magazine (1902, vol. xiii, p. 177). It consists of a matrix of ferruginous limestone with some large cleavage surfaces of calcite. A cavity is lined with small colourless crystals of quartz; colourless, amethystine, and brown crystals of adamite; two or three large, greenish-yellow cubo-octahedra of iodembolite; and a little native silver is also present.

The adamite crystals are brilliant and transparent; they average about 1 mm. across, the largest being 4 mm. Although the cleavage angle (dd') is not far from that of fluorite ($72^\circ 40'$ instead of $70^\circ 32'$) it was at once

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² Since the above was written, adamite has been found also at Monte Valerio in Tuscany (P. Aloisi, 1907), the island of Thasos, Turkey (V. Rosický, 1909), Ain-Achour in Algeria (— Dussert, 1910), and Reichenbach in Baden (V. Dürfeld, 1912). Pleochroism in the French crystals has been noted by A. Lacroix (Minéralogie de la France, 1910, vol. iv, p. 425).—L. J. S. May 1914.

seen that the symmetry of the crystals was not that of fluorite. Goniometric measurement of two crystals gave angles agreeing with the determinations of Des Cloizeaux. The forms¹ present on a brown crystal were, in order of prominence: $d\{101\}$, $m\{110\}$, $t\{120\}$, $b\{010\}$, $h\{210\}$; and on a violet crystal, d t m b .

The colour of the crystals is irregular in distribution; a few crystals are quite colourless, while others are colourless with bands and zones of colour. In the brown crystal mentioned above, the colour is collected near the surface in the prism-zone; and in the violet crystal there are bands and streaks of colour parallel to t (120). The pleochroism is strong enough to be observed by the unaided eye; the brown crystal appears purplish when viewed through the face b (010), and yellowish-brown in the other two directions at right angles. The axial colours for vibrations parallel to the crystallographic axes a , b , and c are:—

Axis.	Brown crystal.		Violet crystal.	
a [100]	...	Rose-red	...	Rich magenta.
b [010]	...	Yellow	...	Rose-red with yellowish tinge.
c [001]	...	Yellowish-brown	...	Deep purple.

¹ Letters and indices as in Dana's 'System of Mineralogy,' 6th edit., 1892.