along three lines in general not at right angles, or (2) linear dilatations along equiangular triads followed by a rotation of the system as a rigid body.

It would appear that the term thermic axes, if applied at all, ought really to be devoted to those which have been here called atropic.

The following problems may be suggested for solution:—

(1) What is the relation between these atropic lines and the directions of the edges of an elementary parallelepiped?

(2) Are the same lines atropic for all temperatures?

XVII. *Examination of two new Amalgams, and a Specimen of Native Gold.* *By* WALTER FLIGHT, *D.Sc., of the Mineral Department of the British Museum.*

A SPECIMEN of "native silver" from Kongsberg proved, on analysis, to be an amalgam, and, as it appears to me, to be an amalgam new to science. The composition of the specimen in question was found to be:—

Silver . .	75·900	$\frac{75·900}{108}=0·70.$
Mercury .	23·065	
Insol. part .	0·490	$\frac{23·065}{100}=0·23.$
	99·455	

These numbers indicate the formula Ag_3Hg as that of the amalgam, or a composition the converse of that of the amalgam from Moschellandsberg, $AgHg_3$. It is worth recording how firmly and tenaciously mercury is retained by silver in the molten state. In one experiment, a fragment of the above amalgam was fused in a glass tube and kept at a bright red heat for more than ten minutes. The bead of silver, when cold, was beaten flat, cut into strips, and again heated, when what proved to be almost an additional one per cent. of mercury came off.

Another specimen of supposed "native silver" from Kongsberg was found to possess a somewhat different composition. The analysis gave the following numbers:—

		I.	II.	Mean.
Silver . . .	=	92·454		
Mercury . .	=	7·022	7·369	7·195
Iron oxide . .	=	0·033		
Lime . . .	=	0·055		
Silver chloride	=	0·088		
Insol. part . .	=	1·328		
		100·980		

Calculated.

$Ag_{12}Hg$.		
Silver	=	92·84
Mercury	=	7·16
		100·00

This is an amalgam having the formula $Ag_{12}Hg$, and is new to science. These two amalgams are the only ones which I have examined; and they both yield ratios which appear to indicate the existence of actual chemical compounds.

Travellers journeying through the Straits of Magellan stop at Punta Arenas. At this station the natives offer for sale washed gold in laminated grains and scales against its weight in sovereigns. A specimen of this gold, presented to the Mineral Department by my friend Mr. C. L. Claude, of Valparaiso, proved to have the following composition:—

Gold	=	91·760
Silver	=	7·466
Copper	=	0·248
Iron oxide . . .	=	1·224
		100·698

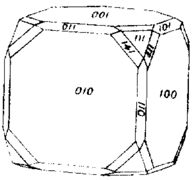
XVIII. *Crystallographic Notes.* *By* L. Fletcher, *M.A.*, *Fellow of University College, Oxford, Assistant in the Mineralogical Department, British Museum.*

[Plate V.]

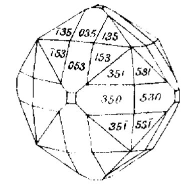
I. *Copper.*

The following forms have already been described as occurring on native copper:—

(100) (110) (111) (210) (520) (310)
(311) (412) (18 10 5).



1.



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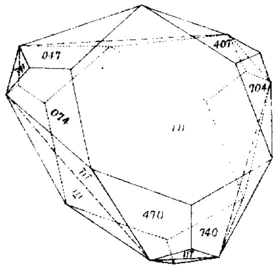

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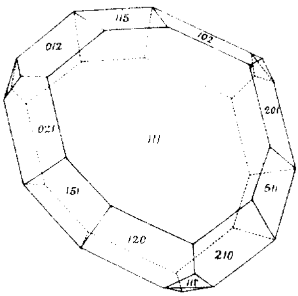

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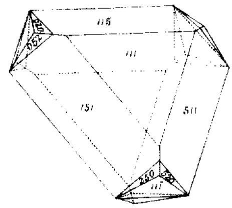
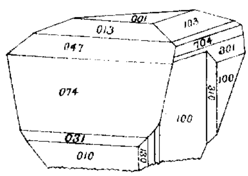


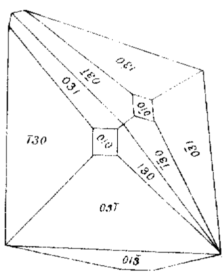
5.

Copper.



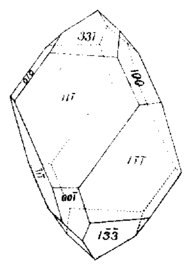
6.

Silver.



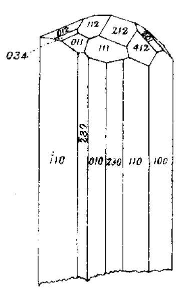
7.

Gold.

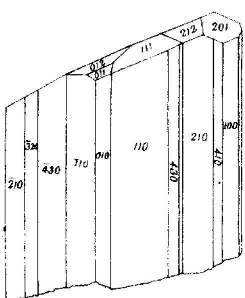


8.

Bismuth.

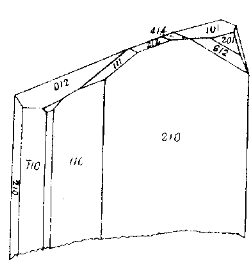


9.



10.

Realgar.



11.

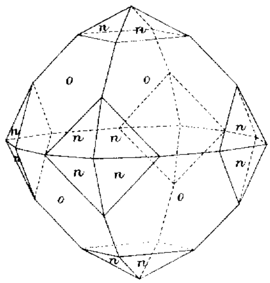


Fig: 1.

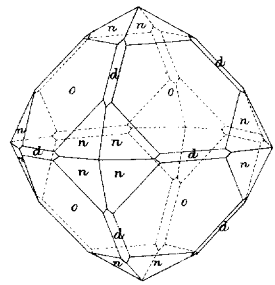


Fig: 2.

o (111)
d (110)
a (100)
n (211)
f π(310)
s π(312)

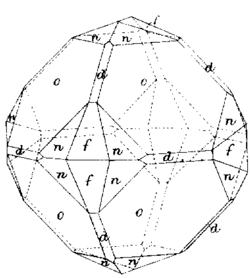


Fig: 3.

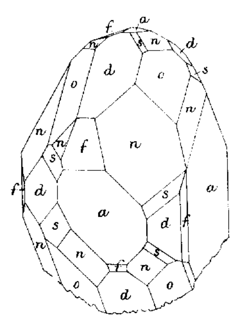


Fig: 4.

Skutterudite.

Mintern Bros. lith.