On chiolite—A new mineral

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ON CHIOLITE—A NEW MINERAL. BY M. HERMANN.

There is found in the granite of the district of Miask in Russia a white mineral, which has much resemblance to cryolite, but the composition is different.

This new mineral occurs in compact and granular masses, and sometimes spathose or leafy. The lamellar portions are somewhat translucent, and give an appearance to the mineral of its being impregnated with moisture or with fatty matter. The cleavage faces form an angle of 66° .

Its hardness is that of fluor spar; its lustre is between vitreous and greasy. Its density is 2.72. It fuses below the melting-point of glass, without yielding a trace of water. Heated in an open tube, it evinces the action of hydrofluoric acid. It fuses readily with borax and a phosphate, giving colourless glasses. When mixed with sulphuric acid, the powdered mineral disengages much hydrofluoric acid. Carbonate of ammonia precipitates pure alumina from the solution; the liquor separated from the precipitate contains pure sulphate of soda, unmixed with potash or lithia.

M. Hermann found it to consist of—

Sodium	23.78
Aluminium	18.69
Fluorine	57.33
	<hr/>
	100.00

Cryolite contains, for the same quantity of fluoride of sodium, only half the quantity of fluoride of aluminium contained in chiolite.—*Ibid.*

PURIFICATION OF MERCURY. BY M. MILLON.

Mercury may be perfectly purified by agitating it for a considerable time with weak nitric acid. With two pounds of the metal, about an ounce and a half of the acid diluted with twice its volume of water may be employed. The mercury freed from the nitrate thus formed is to be boiled with pure nitric acid sufficient to dissolve about nine-tenths of the metal; the resulting nitrate of mercury is to be reduced to red oxide by heat, and this is to be calcined in a porcelain retort to reduce it.

By the action of the first portion of nitric acid the more oxidable metals are acted upon; the second portion of acid leaves the metals less oxidable than mercury in the undissolved portion.

As the mercury reduced by this process dissolves a notable quantity of oxide, this last is to be separated by agitation with sulphuric acid; it is afterwards to be washed with a very large quantity of water, and dried in the receiver of the air-pump over sulphuric acid. Mercury thus purified was employed by M. Regnault in his third determination of its density.

M. Millon states that when a saline solution, such as chloride of