REVERSAL OF CHEMICAL CHANGES.

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Form of oxide, EsO2.

Sp. gr., 4.7.

- Easily obtained by reduction with carbon or sodium.
- Dirty gray metal, fuses with difficulty, forming the oxide when heated in the air.
- Will form a chloride, EsCl₄, which will boil near 100°, probably lower,
- Its sulphide will be insoluble in water, but probably soluble in ammonium sulphide.
- Will be searcely acted on by acids,

GEEMANIUM, GE*. Combining wt. 72:32 and 72:28. Density, 5:69.

Combining vol., 13.25.

Forms an oxide, GeO2.

Sp. gr., 4.703.

- Easily obtained by reduction with carbon or hydrogen.
- A gray-white metal, fusing at 900°C, and forming the oxide when heated in air.
- Forms the chloride, $GeCl_4$, boiling at 86°C.
- The sulphide is moderately soluble in water, more readily in ammonium sulphide. Not acted on by acids.

7. Reversal of Chemical Changes.—Chemical change is influenced by various conditions, such as temperature, pressure, etc.; and changes which go on under certain conditions may be recersed when the conditions are changed. Such reversals of chemical change are quite commonly brought about by change of temperature. If mercury be heatel to near its boiling point in air or oxygen it slowly combines with oxygen and forms the red oxide. If now the temperature be raised, the oxide is decomposed again into its elements. When barium monoxide (BaO) is heated to about 300° in a current of air, it combines with the oxygen of the

31

^{*} Discovered in 1886 by Dr. Clemens Winkler of Freiberg, † See p. 25.