c.—THERAPEUTICS OF THE NERVOUS SYSTEM AND MIND.

THE PHYSIOLOGICAL ACTION OF THE SULPHATE OF GUANIDIN. F. Putzeys and Aug. Swæn *Pfluegers Archiv*. XII., 11 and 12 Hft., May, 1876, publish the results of a series of experiments performed by them on the physiological action of guanidin.

The preparation they used in these experiments was synthetically prepared, by heating in a soldered tube chlorate of picrin for some hours in alkaline solution of ammonia; the chlorate was changed into the sulphate by means of silver sulphate; a watery solution of 4—10 was employed, and the animals for the most part were frogs of the species *Rana temporaria*.

The following are the conclusions reached by these investigators:

Sulphate of guanidin acts as follows on the cord, the motor nerves, the smooth and striated muscular fibres, the heart and also the lymphatic heart:

On the cord, it diminishes its irritability and finally produces paralysis.

On the motor nerves, it first irritates their terminal peripheral extensions in the striated muscles, causing fibrillary, fascicular, and clonic contractions. Later and especially when large doses are used, it diminishes the irritability of the nerve fibres.

On the striated muscular fibres: After the clonic contraction of the last period of the poisoning has been brought about, guanidin diminishes the irritability of the muscular fibres. This diminution must be attributed in part to the muscular fatigue but partly to the action of the poison.

On the smooth muscular fibres of the iris it acts so far as to cause dilatation of the iris.

On the heart: Sulphate of guanidin causes first acceleration of the pulsations in that it irritates the intra-muscular or cardio-motor centres or the accelerating fibres of the vagus. The succeeding slowing of the heart stroke comes from the diminished action of the poison, musculo-motor, or quickening intra-cardial centres, as well as from probable diminution of the irritability of the accelerating fibres of the vagus.

On the lymph heart it acts just the same as on the central organ of the circulation.

All paralytic phenomena of the second period of the poisoning, would for the most part be ascribed to the direct action of the poison, although partly to the alteration of the blood, which becomes black. This depends apparently on the extraordinary consumption of oxygen during the clonic convulsions.