

He shows by these experiments that the spores of this fungus may be dried up with calcium sulphate and calcium carbonate (which principally constitute the dust of the atmosphere) for a period of eight months in a dry warm oven ( $35^{\circ}$  C or  $95^{\circ}$  F), without destroying a vitality. He next points out the action of a solution of iron sulphate upon certain parasitic fungi. An aqueous solution containing as little as one-tenth grain of iron sulphate in one hundred grains, of water was found to have the power of destroying the *Peronospora Infestans*. A crop of this blight was cultivated by Dr. Griffith on the cut surface of diseased potatoes, in a warm damp atmosphere under a bell glass. Also the leaves of the potato (*solanum tuberosum*) were placed under the same bell glass. The spores of the fungus threw out hyphæ which penetrated the tissues of the leaves. By taking a portion of the fungus and its spores (conidia) by the point of a needle, and placing them upon a microscopic slide, mounting them in a drop of water, then running in between the slide and the cover slip, the above solution of iron sulphate, it was observed that the cellulose wall of the hyphæ, and of the spores of the potato blight (*Peronospora Infestans*) were perforated in all directions.

Further experiments have shown that iron sulphate does not attack the cellulose wall of the higher forms of plant life, not even when we get so low as the fresh water algal. Then again iodine and sulphuric acid do not color the cellulose walls of the fungus of the potato disease a blue color, whereas it is well known that the cellulose walls of the higher plants are colored by iodine and sulphuric acid. Then it is reasonable to conclude that Dr. Griffith's conjecture is correct. He says, "It is probable that the cellulose of parasitic fungi is different in its atomic structure from the cellulose of the higher plants. It is most likely an isomeric modification of ordinary cellulose." This agrees with the statement of Dr. Grew, F. R. S., which he made some two hundred years ago.

Then from the nature of plants, and the action of iron sulphate upon them, the following most important truth has been disclosed to the agriculturist, viz. : That while iron sulphate to a limited extent is valuable as a fertilizer for agricultural plants, it is a remedy against those fungi which cause so much loss to the farmer through disease ; and it is none the less pleasing that practical experience, so far as applied, has proven the principles which science has set up.