

leaf. On the Tomato leaf the spots lack the black rotting look which is so characteristic of the Potato disease. The Tomato leaf is larger and harder, so that instead of putrefying it rather dries up; the spots themselves look more like the sun-scalds one sees upon the leaves of plants grown under glass. After diseased Tomatos have been gathered a short time decomposition rapidly sets in, and they then harbor an incredible quantity of fungi. But as these fungi are, as a rule, only such as are found upon almost all decomposing vegetable matter, it is useless to enumerate them. One species, however, seems to me worthy of special note, as when it appeared upon a Tomato the latter underwent very rapid decomposition. The fungus is, I believe, an undescribed species of *Sphaeronema*; it may be thus described:—

*Sphaeronema lycopersici*, n. sp.—Perithecia minute, spherical, arranged somewhat concentrically upon the surface of diseased Tomatos. Each perithecium surmounted by a dirty flesh-colored globule of spores. Spores minute, cylindrical, or somewhat sausage-shaped, hyaline, either with or without nuclei. On outdoor Tomatos, Clenchwarton, King's Lynn, Oct., 1880. Perithecia about 150 mk. in diameter. Spores 10 by 2—3 mk.

The diseases of the Tomato to which I have given most attention, however have been those peculiar to fruit grown under glass. It is worthy of remark that the *Peronospora* disease does not occur under these conditions; at least if it ever does do so it is very uncommon.

The first and most important disease to which I would call attention is of frequent occurrence, and may be termed for distinction's sake the "black spot." It makes its appearance usually (but not invariably) upon the green Tomato as a circumscribed brownish spot of no great size upon the crown of the fruit, usually near the remains of the style. As the Tomato ripens the spot has a whitish hue from the semitransparent dead cuticle of the fruit, which is at this time unaffected with any fungus growth, being simply dead. Specimens of this disease have been submitted to more than one horticultural journal, and pronounced to be "sun-scalds." This, however, they cannot be, for the spots of disease are upon the crown of the fruit, which hangs downwards, so that any sun-scald would be upon the base of the fruit, which is uppermost. I have seen numerous specimens *in situ*, and can therefore speak positively upon this point, as it might be suggested that the primary lesion was due to a burn, and that the fungus afterwards attached itself to the injured spot. As the Tomato ripens and assumes the beautiful red color of maturity, the spot, which varies in size from 3 to 10 millimetres, acquires a jet-black color. If a section be now made through it, it will be found that this blackness extends inwards towards the centre of the fruit, to a much greater extent than is apparent from the exterior. It is distinctly defined and harder than the parenchyma of the fruit. If a portion of this black substance be examined microscopically, it is found to consist of an assemblage of black mycelium compacted pretty closely together, having the appearance of the mycelium of the *Demati* or black moulds. Upon the upper surface—the black spot—four fungi are found; one a true black mould, the other three polymorphic states of a *Phoma*. The black mould may be thus described:—