vantage. It is readily soluble in cold water, but it must not be allowed to stand, as it loses strength rapidly. It may be applied in the proper proportion of $2\frac{1}{2}$ lbs. to 100 gallons of water; a little soft soap mixed with it tends to keep it upon the leaves.

Liver of sulpur is also a remedy. It is so soluble that it might be put in with some soft soap and quasia chips or any other insectioides.

GERMINATION.

Germination is an operation full of the most intense interest to the student of vegetable physiology, and an intelligent knowledge of it is essential in the successful practice of horticulture.

The term germination was formerly use to indicate the evolution of one growing part of a tree or plant from another, as a twig or shoot, from an embryo bud ; from the mulplication of bulbs ; from the buds or eyes of tubers, as the potato ; or reproduction, or rather perpetuation of its kind by means of layers, grafts. or cuttings. It is also employed by some to signify every kind of vegetable propagation. But by modern scientific usage it now bears only a more restricted meaning, and is only applied in relation to the "ovary" a term derived from the latin ovum, an egg, which is used to express, that part of the pistil, or central organ of the flower containing the rudimentary seeds or ovules in all seed bearing plants, and which are the true germens. In the non-seed-bearing species these germens are situated on different parts of the plant ; the germens of ferns are called sporules, and are borne on the backs of the fronds or leaves, those of the mosses are found in little capsules or urns, and those of the lichens, sea weeds, and fungi, of which latter the mushroom is a familiar type, are held in tubes or cells within their substance; in some of the fungi these germens are so minute as to be only discornable by the aid of a powerful microscope, and se numerous that their number cannot be expressed by any intelligible arithmetic; and yet each one is perfect in itself, and the embryo of a new individual of the same species. These minute particles are careering though space with every current of air, attacking themselves to every place, and availing themselves of every circumstance fayourable to their germination ; reproduction from them is now well understood and completely upsets the old idea of equivocal or spontaneous generation.

A seed, when placed in the condition of moisture and temperature necessary to its development, commences to form the different organs of the plant; it cannot to be said to be beginning a new existence, because its vital germ was already within it, but to be perpetuating its species by entering a new phase of life, and reproducing a perfect set of organs similar to the parent that produced it. What it termed "generation" in animals may be likened to germination in plants.

The birth of organized beings, whether in the animal or vegetable kingdoms, is the crowning mystery of nature and of organic arrangement.

Organic bodies *develop*, but never form themselves; on the contrary, in all those cases where they can be traced to their source, they have been found to derive their origin from a being of similar structure which had itself been previously developed, that is to say, a "parent."

The offspring of plant or animal is termed a germ as long as it participates in the life of the parent, and before it has any independent existence. In various species there is a difference in this respect, in some the germ is attached to the parent until it commences its independent existence; in others, such as birds, insects, and animals which lay eggs, and in plants which bear seeds, the germ is contained in these eggs or seeds, but remains in a suspended state of animation until exposed to the proper condition of temperature to cause germination.

The ancients had an idea that certain organized creatures could be produced without parent and Virgil attempts to

> The great discovery of the Arcadian Swain, How he creates, and can at will restore, Swarms, from the s'aughtered bulls' corrupted gore

Some people cannot, even, now, be convinced that the Hair worm (*Gordius aquaticus*) is not formed, artificially, by placing a horse hair, and allowing it to remain for sometime, in water.

Kirchner who lived in the seventeenth century gave a receipt for making snakes !

It is very interesting to watch how a seed, when placed in the right conditions to induce germination, sends down first a radicle to form a root, and then a plumule to form a stem and leaves, feeding both with the vegetable albumen stored up⁺wi⁺hin it for that purpose. So power-