

was then sprayed a second time, the foliage in the interim not having been watered. Patches of small brown spots now appeared on the leaves a short time after drying, the leaf of the sprayed was not, however, visibly affected.

**ABUTILON**, sprayed with solution A. Small brown patches appeared after second spraying, but the vitality of the leaves appeared to be unimpaired. With solution B. no injury could be detected until about one week after second spraying (ten days after first application,) when a few brown film-like spots appeared, otherwise the leaves to be healthy and vigorous.

**COLEUS**, sprayed with solution A. The leaves soon showed signs of scorching the injury extending to the destruction of all the cell substance. Death of the treated leaves and their falling off soon followed. With solution B, the leaf was injured by the first application though not seriously. After the second spraying at an interval of three days the injurious effect of the corrosive sublimate was more apparent and finally the sprayed parts died.

**GERANIUM**, with solution A. Almost immediately on drying, the foliage became brown as if the leaves had been badly scorched. The leaf shrivelled, died and dropped in the course of a week. With solution B very little injury appeared at first, but after the second application the injury was most marked. The sprayed foliage eventually died and dropped.

**FUCHSIA**, Sprayed with solution A. Very slight injury if any could be detected, even after several sprayings. With solution B, the leaves appeared perfectly healthy and normal after repeated applications.

#### SECOND SERIES OF EXPERIMENTS.

The effect of the trial solutions was then ascertained on the foliage of certain fruit trees as follows, apple, pear, plum and cherry. These were all young trees from 4 to 6 feet high and were in nursery rows. They were all sprayed twice with both solutions (A and B,) an interval of three days intervening. No injury to the foliage resulted in any case.

#### THIRD SERIES OF EXPERIMENTS—AS AN INSECTICIDE.

A clover plant infested with aphides was sprayed with solution A. The aphides dropped to the ground, in a short time, however, it was noticed that most of them were re-ascending, apparently none the worse for the spraying. Unfortunately the plant at this juncture met with an accident that terminated the experiment. As the thin film of poison would lie on the surface of the leaves we should expect it to be most efficacious in the case of those insects that eat away the substance of the leaf. To those like the plant lice just cited, that pierce the epidermis and suck the juice it could only act as irritant (perhaps to the extent of destroying) at the time of spraying. A colony of mealy bugs was sprayed several times but only succumbed after prolonged treatment. No experiments have as yet been made to test the efficacy of corrosive sublimate directly as a fungicide, a suitable opportunity not having offered itself.

**CONCLUSIONS.** With the limited data at our command it is not advisable to speak too definitely as to the future usefulness of this compound as an insecticide and fungicide. Some inferences however, may, I think, safely be drawn. The foliage of different plants evidently varies widely in its ability to withstand the corrosive action of this compound. A solution which is very injurious to one plant is often quite harmless to another. The greenhouse plants with one exception, were all affected by solution B (though some not disastrously so,) while the fruit-tree foliage was uninjured. From the properties of this salt (corrosive sublimate) and the result of work here given, I am not hopeful for its success as an insecticide. I do not think it can safely be applied in solutions sufficiently strong to act in this role. I am more sanguine for its usefulness as a fungicide, and future experiments may show that solutions even more dilute than B. may be used to advantage in checking or destroying fungus life.