EXPERIMENTAL WORK CARRIED ON BY THE TOBACCO DIVISION IN 1908.

PART I.

PRELIMINARY EXPERIMENTS IN GROWING SEED PLANTS.

(By F. Charlan.)

While visiting tobacco districts in Canada and the United States, the writer was struck with the great variety in the methods of growing seed plants.

A general practice is to strip the seed plants bare of the leaves remaining on them at harvest time, when other plants, grown for the production of tobacco, are cut to be stored and cured.

The object of this practice, according to the majority of the growers who follow it, is to hasten the ripening of the seeds. We always considered that it was faulty, as the plant, deprived of its breathing apparatus, cannot, under normal conditions, complete the formation of its seeds.

Another practice, advocated for some years by American experts, is to cover the floral cluster with a paper bag in order to prevent cross-fertilization, of which the various insects of our district, and particularly bees and bumble-bees, are very active agents, as they may carry the pollen for considerable distances. This method allows of a perfect selection of the plants, but we wanted to satisfy ourselves that the paper cover, which is rather opaque and does not allow for free renewal of the air, does not interfere with the ripening of the seeds.

It was also desired to ascertain the best time for harvesting ripe seeds in our climate, whether during the hot spell at the end of August, or at the beginning of September or later.

A field of Comstock Spanish, grown at the Ottawa Experimental Farm in 1908, was chosen for these experiments.

The seed plants were carefully selected and divided into three lots, as follows:—

Lot X, including only those plants the seeds of which were entirely grown (fertilized and ripened) under cover of light paper bags.

Lot XX, including plants the seeds of which were produced entirely in the open air.

Lot XXX. In this lot the flowers were fertilized under bags, which were removed later to allow the capsules to ripen in the open air.

A distinction was made in lots XX and XXX between ripe capsules and half ripe capsules. The ripe capsules were harvested when the whole capsule, sepals included, was brown coloured. The half ripe capsules were harvested when the sepals were still green, but the capsule itself was already brown.

There was another special lot composed of two seed plants, the seeds of which were harvested, one capsule at a time, as each reached maturity. The ripe capsules were removed every four days.