THE IMPORTANCE OF ROTATIONS IN TOBACCO CULTURE.

When we consider the present position of tobacco culture in Canada, one fact immediately strikes us. How is it that in spite of the judicious selection of varieties and of careful attention to details of cultivation, planters are unable to exceed certain yields greatly below those which they are entitled to expect. It appears to me that it will be interesting and useful to look into the reasons for this state of things, and, if possible, to ascertain the practical remedies.

In the first place, notwithstanding the improvements lately effected in tobacco culture, we find that the yields are diminishing every year. This is easily explained by the fact that the majority of planters grow tobacco regularly every year on the same land. It is this successive cultivation of the same plant on the same soil that is one of the reasons for the constantly decreasing yield.

We are aware that tobacco, owing to its short season of growth, is one of those plants that require the greatest amount of fertilizing elements. Indeed a tobacco plant in full growth removes daily from the soil:—

Nitrogen	0·287
Potash	0·289
Phosphoric acid	0·601
Carbon	2·513

Considering also how slow planters have been to make use of manures, whether farm yard or chemical, and that the waste products of tobacco, stalks and stemmed fibres,were frequently thrown away, we see that with a plant which consumes everything and when practically nothing is returned to the soil, the land will speedily become impoverished.

Hardly more than two kinds of soil were chosen for tobacco culture: Virgin soil and alluvial soil, both exceedingly rich in humus.

A tobacco plantation will never succeed without humus. The absence of a rotation and the failure to restore ingredients removed, are the principal causes of diminished yields.

It will not be amiss perhaps if we dwell for a few moments upon the important rôle which humus plays in vegetation. This rôle is in agriculture a leading one. We can discuss it from two points of view: (1) as a means of disaggregation, and (2) as an agent of mechanical change. These two special properties are due to the considerable quantities which it contains of nitrogen and carbonic acid. Moreover, these two processes go on simultaneously. Two alternatives may present themselves: (1) Where the soil is rendered sterile from the lack of humus, and the consequent absence of nitrogen and carbonic acid. (2) Where a small quantity of humus produces disaggregation but causes no mechanical improvement; so that