

sensibility, and possibly, too, with auxiliary apparatus attached for taking the readings automatically in place of taking them visually, but time has not permitted and the further investigation of this point has been of necessity deferred.

VI.—SUMMARY.

In summarising the results of the investigation the following are the chief points which have been noted :

a With an open receiver.

1. No daily regular maxima or minima conductivities were observed.

2. Changes in conductivity occurred from day to day which seemed to be directly connected with concurrent barometric changes.

3. The conductivity was found to be slightly less when the ground was frozen and covered with snow, than when it was bare and the temperature was above freezing point.

b With a closed receiver.

1. Larger variations in the conductivity were observed but no regular diurnal maxima or minima values were noted. The larger variations in the conductivity were attributed to a lack in the sensitiveness of the measuring electroscopes.

2. Different metals which were used in the construction of the receiver were found to possess different activities, zinc being very low.

3. Atmospheric air, even when well filtered through cotton wool, was found to contain many suspension particles.

As a general result of the investigation it would appear that the soil contributes by far the greater proportion of the penetrating radiation present at the earth's surface at Toronto, and by comparison any that may have its source in the atmosphere or in the sun may be considered to be negligible in amount.

In closing I wish to express my gratitude to Professor McLennan for his kindness throughout the research, for suggestions and for assistance in overcoming mechanical difficulties.

My best thanks are also due Mr. E. F. Burton for his kindness in taking a number of readings.