INTRODUCTION

Although some genera of plant parasitic nematodes viz., *Heterodera*, *Meloidogyne*, *Ditylenchus* and *Aphelenchoides* have been known to cause crop failures since long (Schmidt, 1871; Goeldi, 1892; Kühn, 1857 and Ritzema Bos, 1891) and outstanding work has been carried out by individual scientists belonging either to the field of Botany or Zoology, yet the progress in phytonematology has been slow. This has been partly due to the fact that majority of nematodes are minute, difficult to identify and to extract. Moreover, the symptoms which most of them cause are confined to the subterranean portion of plants and therefore, are not as conspicuous as those produced by other disease causing agents.

Despite the classical work of Barber (1901) on root-knot on tea and Bulter (1913) on ufra disease of rice, the progress of phytonematology in India was also far from satisfactory. One of the most important events that triggered the progress in the field of nematology in India was the visit of Mr. F.G.W. Jones who in 1961 during the course of his stay here reported the occurrence of potato root eelworm *Heterodera rostochiensis* from Nilgris. As *H. rostochiensis* caused complete failure of potato crop in Europe (Zimmermann, 1914) so the report about its occurrence in India caused a
great stir and it eventually attracted the attention of the scientists and the Government. Since then, the science of plant nematology has expanded at a rapid rate (Siddiqi, 1962; Khan and Basir, 1963; Prasad et al., 1964; Khan and Husain, 1965; Seshadri, 1966; Singh and Sitaramaiah, 1967 and Sethi and Swarup, 1968).

Plant parasitic nematodes have been classified into several categories on the basis of their mode of parasitism. The species belonging to the genus Tylenchorhynchus have been put in the so-called semi-endoparasitic category and several species belonging to this genus namely T. clavoni, T. dubius T. martini etc., cause heavy losses to a variety of crops (Steiner, 1937; Boyle, 1950; Nelson, 1956; Krusberg, 1959; Reynolds and Evans, 1953 and Brichfield and Martin, 1956).

In all, seventeen new species of Tylenchorhynchus have been described from India viz., T. coffeae from around the roots of coffee arabica; T. mashhoodi from Saccharum officinarum; T. dactylurus from Capsicum annuum; T. digitatus from Ricinus communis; T. divittatus from Citrus sinensis; T. brevilneatus (= T. indicus) from Citrus sinensis; T. elegans from Saccharum officinarum; T. brassicae from Brassic oleracea var. botrytis; T. rugosus from Salix babylonica; T. nilgricnsis from Brassica oleracea var. capitata; T. chona
from Syzygium cuminis; T. phaseoli from phaseolus aconitifoliu;
T. zeae from Zea mays; T. berberidis from Berberis aristata;
T. delhiensis from Annona squamosa; T. cacti from Cactus sp.
and T. hexincusus from citrus sp.

Besides these, T. capitatus from around the roots of
lily; T. brevidens from Solanum tuberosum; T. latus from
Nicotiana tabacum; T. nudus from Saccharum officinarum; T.
dubius from Rosa sinensis; T. acutus from Omuntia dilleni;
T. martini from Phaseolus mungo and T. swingi from Triticum
vulgare; T. acti from Triticum aestivum and T. curvus from
Capsicum sp. have also been recorded.

Since T. brassicae has invariably been found to be
associated with poor patches in cabbage and cauliflower in
Koil tehsil of Aligarh district and nothing is known about
its etiology, therefore, present investigations were under­
taken with a view to study the following:-

1. To survey cabbage and cauliflower fields in different
districts of Uttar Pradesh for determining the occurrence of
T. brassicae.

2. To study the host range and host parasite relation­
ship of T. brassicae on cabbage and cauliflower.
3. To determine the effect of soil temperature on multiplication of *T. brassicae* on cabbage and cauliflower.

4. To determine the effect of soil moisture on multiplication of *T. brassicae* on cabbage and cauliflower.

5. To determine the population changes of *T. brassicae* in two different fields for the period March, 1966 to February, 1968.

6. To study the growth of cabbage and cauliflower and nematode population when grown in soil inoculated with moderate population of *T. brassicae* and later treated with DD, Vapam, Nemaphos; Thimet 10G and Rogor G.

7. To grow the seedlings of cabbage and cauliflower in DD, Vapam, Nemaphos, Thimet 10G, Solvirex and Rogor G treated beds and later transferring them to infested field in order to explore the possibility for its controlling the nematode.

8. To determine the toxicity of different dilutions of DD, Vapam, Nemaphos, Thimet 10G, Solvirex and Rogor G on *T. brassicae*.

9. To study the growth of cabbage and cauliflower and population of *T. brassicae* in pot soil and beds treated with neem, castor, groundnut, mahua and mustard cakes.
10. To estimate the toxicity of water soluble fractions of oilcakes and deoiled cakes on *T. brassicae*. 