

plated on Potato dextrose agar medium. It is identified as *Alternaria alternata*, (Fr.) Keissler (= *Alternaria tenuis*, Nees) by comparing their characteristics with the stock culture maintained at the Department and also comparing with the type description¹⁻³.

The mycelium from the host tissue was hyaline, septate and branched. The Conidiophores are usually unbranched, emerge through the stomata and similar to mycelium in colour. In culture, mycelium is abundant and forms distinct concentric rings. Hyphae hyaline, septate, 4-6 microns wide. Conidiophores are distributed over the colony. They were unbranched, erect, brown, septate and measured 3-6 microns wide and 30.0 to 80.2 microns in length. The conidia were brown to dark brown, black at maturity, smooth-walled with 3-4 transverse septa. The terminal cell of the conidia was beakless or having a very short beak in few cases. The conidia were borne in chains and 23-30 × 9.2-12.7 microns in size.

A perusal of the literature^{2,4,5} shows that *Lepidium sativum*, Linn., is a new host record for the fungus. The disease is principally seed-borne but the infected plant debris may provide inocula for the recurrence of the disease.

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DISTRIBUTION PATTERN OF ONION THRIPS (THRIPS TABACI LIND.)

Introduction

THE distribution pattern of insect populations gives an insight to formulate management strategies for control measures as well as to study the biological nature of insects. The dispersion pattern of insects

may be random, clumping or regular. If the insect populations are dispersed in a random manner, the distribution pattern of insect counts shall approximate to Poisson distribution. The equality of mean and variance is an important characteristic of Poisson distribution. Generally under natural conditions, insect populations are not independent of each other as pointed out by Taylor¹. It may be due to response to physical factors like light or temperature, reproduction behaviour of insect populations and interaction with other species. For such populations, random distribution shall not give adequate representation of insect population. The departure from random to clumping of insects is called contagion, where the presence of an insect in a unit increases the probability of occurrence of other insects on that unit. The negative binomial distribution may give adequate representation of such populations²⁻⁶. The variance greater than mean is an important characteristic of the negative binomial distribution. If dispersion of insect population is regular, the data will approximate to binomial distribution.

For the present study, distribution behaviour of the onion thrips (*Thrips tabaci* Lind.) has been investigated. These minute insects lacerate plant tissues and suck the sap from leaves. In the case of severe infestation, the entire crop gives whitish appearance with dry tips and thin leaves.

Materials and Methods

Onion crop was planted on December 6, 1978 in forty plots of size 5 × 3 sq. m. at Indian Institute of Horticultural Research, Hessaraghatta. A random sample of 10 plants was selected from each plot and observations were recorded after two months of transplantation. Morisita's⁷⁻⁸ index of dispersion was used to predict aggregation nature of population. The negative binomial distribution was fitted to the data, which is explained by two parameters, i.e., the mean (m) and exponent (k) called dispersion parameter and the expected frequency of zero count is given as

$$P(0) = \left(1 + \frac{m}{k}\right)^{-k}$$

and chance of observing any positive count 'x' is given by

$$P(x) = P(0) \left(\frac{k+x-1}{x}\right) \left(\frac{m}{m+k}\right)^x$$

The dispersion parameter k is estimated by the formula

$$k = \frac{\bar{x}^2}{s^2 - \bar{x}}$$

where, \bar{x} and s^2 are sample mean and variance respectively.

The cause of aggregation of insect population was worked by Arbous and Kerrich's⁹ criteria and is given as follows:

$$h = \frac{\bar{x}}{2k} v$$

where \bar{x} = the mean, v is function of chi-square with $2k$ degree of freedom and h is the number of individuals in aggregation for the probability level attached to v .

Results and Discussions

The value of Morisita's index of dispersion 1.2558 which is greater than one, as well as a higher value of variance 1.6701 which is greater than the mean 0.8925 showed aggregation nature of thrips population. The value of dispersion parameter k was found to be 1.0243. The calculation of chi-square between the observed and expected frequencies is shown in the last column of Table I.

TABLE I

Fitting the negative binomial distribution to counts of onion thrips (*Thrips tabaci* Lind.)

No. of thrips per plant (x)	Observed frequencies (fi)	Expected frequencies ϕ_i	$(f - \phi)^2 / \phi$
0	210	210.52	0.0012
1	103	99.21	0.1448
2	47	46.56	0.0042
3	18	21.82	0.6683
4	11	10.21	0.0611
5	6	4.77	0.0396
6	3	2.23	
7	2	1.04	
8+	0	3.64	
Total	400	400	$\chi^2 = 0.9197$

The resulting chi-square and P between 0.9 and 0.8 indicated good agreement with the negative binomial distribution.

Arbous and Kerrich's⁹ criteria with value of $h = 0.6246$ less than two, concluded that the aggregation nature of the onion thrips is entirely due to environmental factors like temperature, light, humidity and is not due to active process of thrips population.

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GONYTRICHUM STATE OF MELANOPSAMMELLA INAEQUALIS: A NEW RECORD TO INDIAN MYCOFLORA

The genus *Gonytrichum* is characterised by slimy phaco-amerospores produced endogenously in subulate phialides. So far, two species have been reported from India¹⁻². During the studies on hyphomycetes of Warangal (A.P.) the authors collected another *Gonytrichum*, viz., *G. caesium* Nees ex Pers [= *Melanopsammella inaequalis* (Grove) Hohnel], the type species of the genus (Fig. 1). Perusal of the literature revealed that this species has not been reported earlier from India.

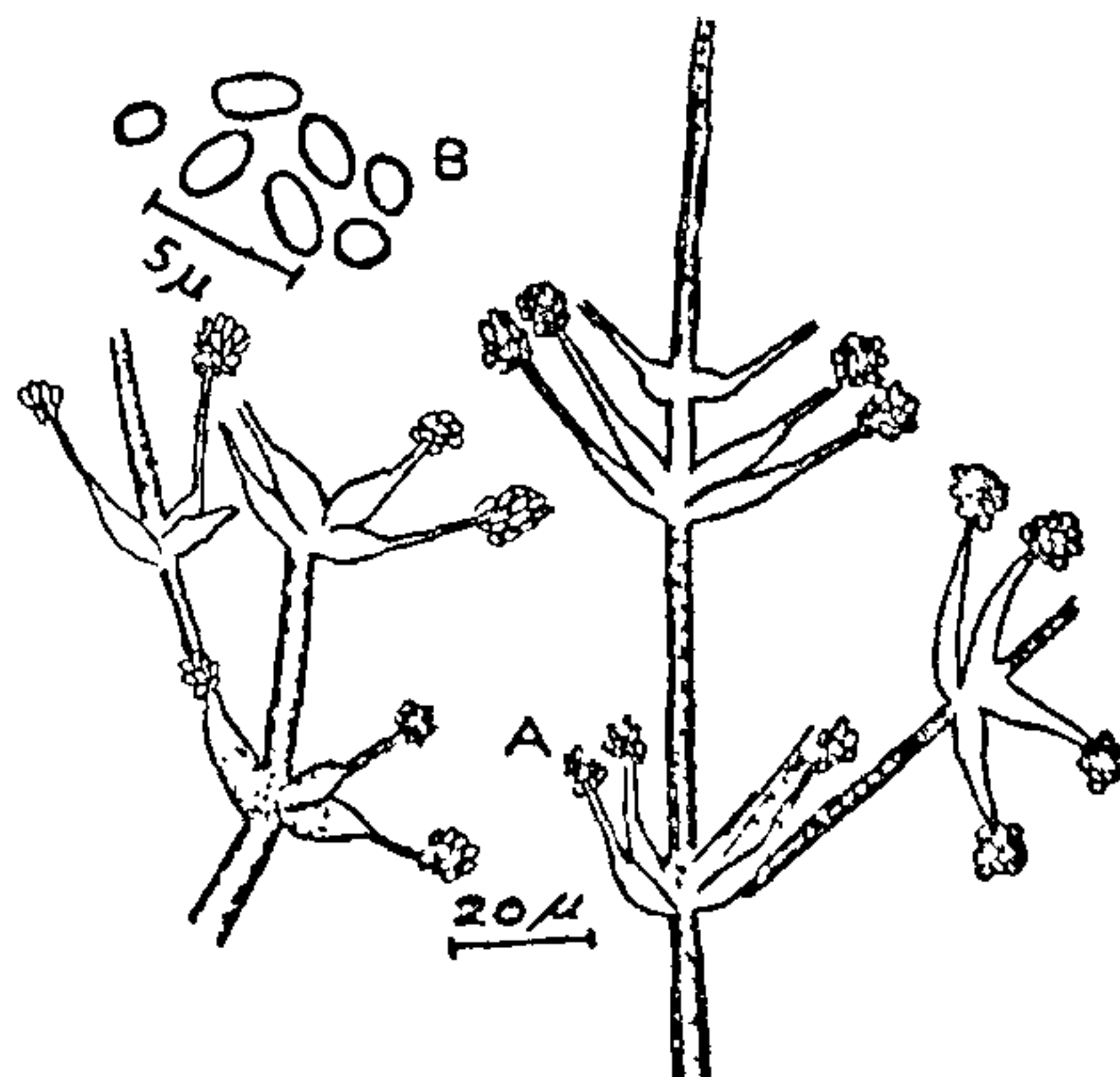


FIG. 1. (A) Conidiophores with phialides, (B) Subglobose conidia.

Colonies on PDA effuso, pulvinate, white turning to greyish-green, pluffy. Mycelium superficial and immersed, threads branched, septate, 1.8-3.3 μ m thick. Conidiophores macronematous, mononematous, simple or branched, erect, straight or flexuous,