CONCLUDING REMARKS

With the foregoing background, an overview of the study prompted us to arrive at the following clusters of conclusions. The present investigation revealed that the total soil fauna reduced to nearly 5 times in the jhum (1-2 years fallow) as compared with the untouched forest stand. However, there was about 50% reduction when only the soil layers were taken into consideration. There was also clear reduction in soil faunal level with increasing depths, recording even total absence of the dominant groups at lower layer beyond 20-30 cm profile.

The two dominant soil faunal groups, Collembola and Acarina, recorded nearly the same abundance values in the forest soils. However, there was about ten fold decrease of Collembola and five fold decrease of Acarina in the jhum soils, though the acari accounted more than 1.5 times of the collembolans. The family Isotomidae and sub-order Cryptostigmata were the dominant group among the Collembola and Acarina, respectively. Among the "Other Arthropods", there was nearly threefold reduction in the jhum as compared to the forest and the insects as a whole were the largest group. In general, the forest occupied nearly 94% of the soil fauna in the surface layer, inclusive of the litter regime, while only about 79% in the jhum.

With regards to the population dynamics, it was seen that there was a mid-monsoonic increase and decline in winter, irrespective of the faunal groups, the soil profiles or the two
systems under consideration, except Acarina. This latter had two population peaks, a smaller spring peak and a larger autumn peak with, however, a winter fall. Temperature and moisture (including humidity and rainfall) were the factors seen to play major role as revealed by their significant relationship, directly with the soil fauna. The duration of sunshine was one significant factor which showed negative relationship. Moreover, most abiotic factors were much better related to the forest soil fauna rather than the jhum. In both systems, however, the edaphic factors played very little role.

Community analysis and ecosystem similarity studies revealed the largest variety of species in the litter or the top surface (0-10 cm) soil layer. Of the 17 species of Collembola at the litter layer, 6 species seemed to be confined only in this layer as revealed by the presence of only 11 and 10 species in the forest and jhum, respectively, in the 0-10 cm soil layer. A drastic reduction in the subsequent layers to 3 species and even to only one species was observed. Diversity indices values were always much higher in the forest than in the jhum system, understandably.

On the other hand, the oribatid community recorded 11 species in the forest and 9 species in the jhum upto 10 cm soil layer. Unlike Collembola, no species occupied the litter layer alone (except Uropodidae). The subsequent soil layers, however, recorded drastic reduction to about 3 species in the forest and 2 species in the jhum system.
The similarity values showed only 50-70% between the two systems though, however, at the surface layer of the soil (0-10 cm), the similarity increases to about 85% and sometimes even 100%. A clear cut uniform distribution was seen with very little aggregation or clumpiness.

The present investigation sought to extend the analytical insights from population levels to community and the ecosystems. On the one hand, community dynamics have been interpreted as species-population phenomena, while on the other, population dynamics was studied only within the community concept.