6. Conclusion

It is clear from the study that in spite of having the third highest forest cover in West Bengal, the forest of district Bankura is under threat. Though large scale deforestation is not observed at present, a more severe form of threat is the conversion of forest species composition from natural indigenous to exotics. It is high time to check the trend. Otherwise it would leave a prolonged effect on biogeochemical cycle of this district and nearby areas with similar environmental condition and floristic composition.

The district Bankura comprises of 6871.24 sq. km which is situated in a connecting link between the plains of West Bengal and the plateau of Chhotanagpur.

Phytogeographically it is with the tropical climatic region. In regards to the forest composition, it is with 1482 sq. km forest cover being the forest cover percentage as 21.53%. The forest regions of Bankura district mainly present under three different zones- Bankura North Division, Bankura South Division and Panchet Soil Conservation Division.

Comparative quadrat survey has been done under these three divisions considering Pure Sal forest, Sal-major forest, Mixed forest and Hedge forest to estimate the diversity of forest species composition.

All total 602 plant species belonging to 403 genera under 98 families are now known from this study.

Interpretation of the data in terms of species wise information as habitat information, phonological information and ecological information as well as calculations have been done for the density of the species, relative density of the species, frequency of the species and abundance of the species.

Enumeration of all the species under genera and genera under family has been provided with key whenever required. Species are enlisted followed after the classification of Bentham and Hooker as families and genera giving presently accepted or corrected names, synonyms and basionyms if any, followed by short description, phonological information and distribution.
Interpretation of the data after Jost (2006) having the Gini-Simpson biodiversity indices for Sal forest and for hedge forest were done. Under Sal forest the indices are 0.948918196, 0.967245159 and 0.929368571 for Bankura North Division, Bankura South Division and Panchet Soil Conservation Division respectively. Under hedge forest the indices are 0.776247, 0.732275 and 0.653042 for Bankura North Division, Bankura South Division and Panchet Soil Conservation Division respectively.

From the above indices, it can be concluded that the index value is highest in case of Sal forest of Bankura South Division followed by Bankura North Division and Panchet Soil Conservation Division. So also for Hedge forest the highest value is for Bankura North Division followed by Bankura South Division and least for Panchet Soil Conservation Division.

In regards to floristic composition, forest of Bankura is rich in species concentration in respect to the district flora as reported by Sanyal (1994) having 938 species under 575 genera and 139 families. The phonological study reveals that the forest trees mainly flower during January to March and the shrubs and herbs flower once during post monsoon and then in winter season. The ecological study reveals that the life forms have diversity for annuals and perennials, herbs, shrubs and trees. Similarly there are good number of species under different habitats as terrestrial, epiphyte, liana, climber, creeper, parasite, saprophyte and finally the marsh-aquatics.

The plant wealth of Bankura forest region is significantly important for production of timber, availability of the medicinal plants, fiber yielding plants, fruit yielding plants, bamboos and plants of other economic importance. Thus the forest is significant for non-timber forest products (NTFPs) besides the timber products.

The forest of Bankura as estimated earlier in (Sanyal, 1994) was 1404 sq. km accounting to a percentage of 20.4 of the total geographical area of the district which successively gained its area to 1482 sq. km in 2011 (Anon, 2011) due to the aorestation programme by the exotic species of Eucalyptus tereticornis, E. maculata, E. globulus, etc. and Acacia auriculiformis. Thus increase of the forest area is not significant towards the productivity and plant diversity of Sal forest. The indigenous flora or the ground floor as floristic composition of the Sal forest is higher than that
of the plantation forest. The fragmented Sal forest is also providing that indices of floristic composition. On the other hand there the entry of many exotic species and some of them are invasive in nature replacing the indigenous flora of its own. Thus the floristic diversity is loosing day by day due to the plantation of exotic species in the fragmented forest area under aorestation programme.

The forest of Bankura is still prospecting if sustainable use is done by the forest department with judicial activities as well as conservation planning. The plant wealth of Bankura district will be retained for future uses with the supplementary supply of non-timber forest products.