



STUDIES ON WOOD BORING INSECTS OF MALABAR REGION OF KERALA

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Author's contribution

GK complied all the results and performed the experiments, SMS designed the study and wrote the paper.

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ABSTRACT

The present study of wood boring insect was carried out during the period from February 2019 to January 2020. A Field survey was conducted in different areas -Thaliparamba, Kannadiparamba, Thottada, Aralam Wildlife Sanctuary (Pookkund, Thullal, Valayamchal) and Elayavoor of Kannur District. This short-term study recorded 38 species of wood borers. The collected specimens were under 7 Families named Cerambycidae, Curculionidae, Brentidae, Bostrychidae, Platypodidae, Buprestidae and Lyctidae. Cerambycidae was the dominant family followed by Bostrychidae and least was Brentidae. The collected specimens were pinned, dried and stored in insect cabinets and kept in Forest Entomology and GIS Research Laboratory.

1. INTRODUCTION

In Kerala about 53 species of beetles were recorded as pest of one or more of 46 species of stored timber (Mathew, 1982). Studies on the timber beetles found in the Indian subcontinent were primarily made by Stebbing (1914). Beeson (1941) summarized subsequent works on timber beetles. Further works include studies by Beaver and Browne (1975, 1978). Gnanaharan *et al.*, (1985) and Mathew (1982) studied timber beetles associated with commercially important stored timber in Kerala and their control. No intensive studies have been carried out on wood boring insects of Kerala. So this study is significant in filling the gap that exists in terms of wood boring insects.

2. MATERIALS AND METHODS

The present study of wood boring insect was carried out during the period from February 2019 to January 2020. Different locations in Malabar region were selected for the investigation. Sampling of insects was done by walking along diagonal transect and extracting the insect from infested logs lying on the forest floor using a field knife or chisel. The data on borers infesting trees were recorded in the data sheet. Intensity of damages were recorded based on qualitative estimation of damage into low (up to 15% damage), moderate (up to 50% damage) and high (above 50% damage) (Mathew, 2004).The insect collected were later sorted out, pinned, labeled and stored in insect boxes. Identification of wood boring insect was done by referring to literature.

3. RESULTS AND DISCUSSION

The collected individual specimens (501) were sorted out under 7 Families namely, Lyctidae

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Cerambycidae, Curculionidae, Brentidae, Bostrichidae and Platypodidae. Majority of the species collected belongs to Cerambycidae and least number of species belongs to Brentidae. A major portion of dead wood observed in the study area showed signs of varying intensity of borer attack. Data gathered on the incidence pattern of various wood inhabiting organisms indicated higher incidence of timber beetles in dead wood compared to live tree. As far as the infestation intensity of affected logs was concerned, majority of the logs (62.35%) showed only mild infestation although a small proportion (5.88%) was with medium or high (4.56%) infestation intensity

4. CONCLUSION

The collected specimens were under 7 families and Cerambycidae was the dominant family followed by Bostrychidae and least was Brentidae.

5. ACKNOWLEDGEMENTS

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6. CONFLICT OF INTEREST

All authors have declared that there is no conflict of interests regarding the publication of this article.

REFERENCES

- [1] R. A. Beaver and F.G. Browne, "The Scolytidae and Platypodidae (Coleoptera) of Thailand, a checklist with biological and zoogeographical notes", *Oriental Insects*, vol. 9, 1975, pp. 283-311.
- [2] R. A. Beaver and F.G. Browne, "The Scolytidae and Platypodidae of Penang, Malaysia" *Oriental Insects* vol. 12, 1978, pp. 575-624.
- [3] C. F. C. Beeson, "The Ecology and Control of the Forest Insects of India and the Neighboring Countries", Govt. of India, 1941, pp. 767.
- [4] R. Gnanaharan, V. V. Sudheendrakumar, and K. S. S. Nair, "Protection of cashew wood in storage against insect borers", *Material and Organismen* vol. 20, 1985, pp. 65-74.
- [5] G. Mathew, "A survey of beetles damaging commercially important stored timber in Kerala", KFRI Research Report 10, 1982, pp. 92.
- [6] G. Mathew, "A study of wood boring beetles in the Kerala part of Nilgiri Biosphere Reserve", KFRI Research Report No. 260. 2004, pp. 18.
- [7] E.P. Stebbing, "Indian Forest Insects of Economic Importance- Coleoptera", Government of India, 1914, pp. 648.

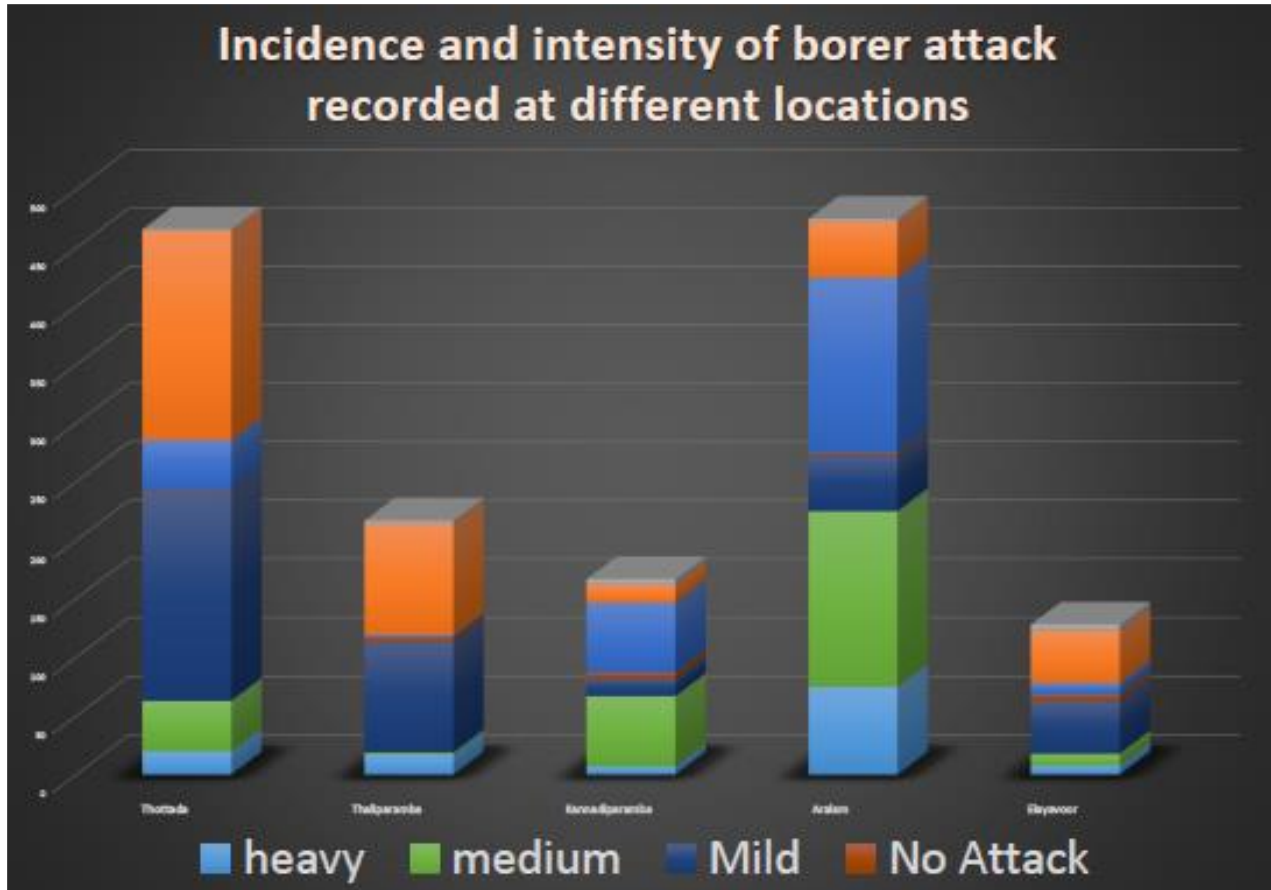


Fig.1 Intensity of borer attack



Fig.2 Incidence pattern of timber inhabiting organism

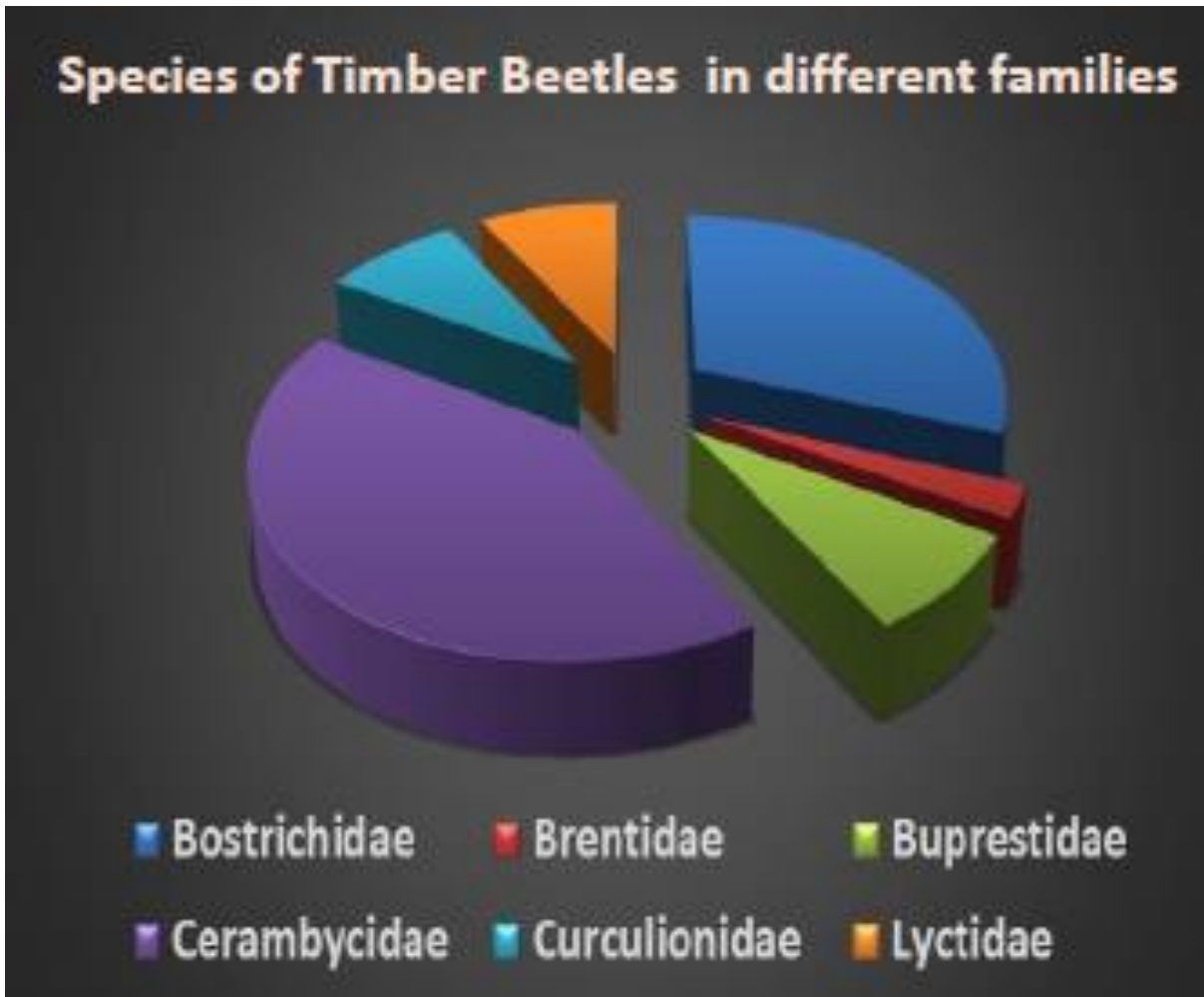


Fig. 3. Species assemblage

TABLE.1 INCIDENCE AND INTENSITY OF BORER ATTACK

S. No.	Name of the species	Family	Place of collection	Host	Damage
1	<i>Apate terebrans</i> Pallas	Bostrichidae	Thottada, Thaliparamba, Aralam	<i>Anacardium occidentale</i>	45%
2	<i>Dinoderus bifoveolatus</i> Woll.		Thottada	<i>Albizia procera, Bombax ceiba, Ficus hispida</i>	40%
3	<i>Dinoderus brevis</i> Horn.		Kannadiparamba		-
4	<i>Dinoderus minutus</i> Fb.		Aralam	<i>Ochlandra</i> sp., <i>Bambusa</i> sp., <i>Paraserianthes falcataria</i>	45%
5	<i>Dinoderus ocellaris</i> Stephens		Kannadiparamba	<i>Ochlandra travancorica, Bambusa</i> sp.	-
6	<i>Heterobostrychus aequalis</i> Wat		Aralam	<i>Bombax ceiba, Bambusa</i> sp., <i>Ochlandra</i> sp.	50%
7	<i>Sinoxylon anale</i> Les.		Thottada, Thaliparamba, Aralam	<i>Paraserianthes falcataria, A.odoratissima</i>	40%
8	<i>Sinoxylon atratum</i> Les.		Thottada, Thaliparamba, Aralam	<i>Paraserianthes falcataria, Bombax ceiba</i>	20%
9	<i>Sinoxylon crassum</i> Les.		Thottada, Thaliparamba	<i>Albizia odoratissima</i>	20%
10	<i>Sinoxylon pygmaeum</i> Les.		Aralam	<i>Grewia tiliaefolia</i>	20%
11	<i>Xylothrips flavipes</i> Illiger		Kannadiparamba, Thottada	<i>Albizia odoratissima</i>	-
12	<i>Hormocerus reticulatus</i> (Fb.)	Brentidae	Aralam	<i>Artocarpus heterophyllus</i>	40%
13	<i>Belionota prasina</i> Thunberg.	Buprestidae	Kannadiparamba	<i>Anacardium occidentale</i>	-
14	<i>Lampetis fastuosa</i> Fb.		Aralam	<i>Anacardium occidentale</i>	30%
15	<i>Sphenoptera indica</i> Lap. et Gory		Kannadiparamba	<i>Pteocarpus marsupium</i>	-
16	<i>Acalolepta rusticatrix</i> Fb.	Cerambycidae	Thottada	<i>Gmelina arborea</i>	-
17	<i>Acanthophorus serraticornis</i> Oliv.		Aralam	<i>Erythrina indica, Ficus hispida, Ficus indica</i>	30%
18	<i>Batocera rufomaculata</i> De Geer		Kannadiparamba	<i>Anacardium occidentale, Bombax ceiba</i>	-
19	<i>Batocera rubus</i> Lin.		Aralam	<i>Careya arborea</i>	20%
20	<i>Celosterna scabrator</i> (Fb.)		Kannadiparamba	<i>Accacia Arabica, A.catechu, Cassia siamea</i>	-
21	<i>Coptops aedificator</i> Fb.		Aralam	<i>Anacardium occidentale</i>	30%
22	<i>Dihammus cervinus</i> Hope.		Kannadiparamba	<i>Acacia</i> sp., <i>Clerodendron</i> sp., <i>Anthocephalus</i>	-

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				<i>chinensis</i>	
23	<i>Epepeotes uncinatus</i> var. <i>salvazai</i>		Aralam	<i>Ficus religiosa</i> , <i>Ficus elastica</i>	30%
24	<i>Glenea multiguttata</i> Guer.		Kannadiparamba		-
25	<i>Mesosa rosa</i> Karsch		Thaliparamba	<i>Mallotus philippinensis</i>	-
26	<i>Morimus inaequalis</i> Waterh.		Aralam	<i>Ficus</i> sp.	25%
27	<i>Olenecamptus bilobus</i> Fb.		Aralam	<i>Artocarpus hirsutus</i> <i>A. incisus</i> , <i>A. lachoocha</i>	30%
28	<i>Sthenias grisator</i> Fb.		Thaliparamba	<i>Anacardium occidentale</i>	-
29	<i>Xystrocera festiva</i> J. Thoms.		Thottada, Aralam	<i>Albizia odoratissima</i>	40%
30	<i>Xystrocera globosa</i> Oliv.		Aralam	<i>Albizia odoratissima</i>	40%
31	<i>Cossonus canarensis</i> Fst.	Curculionidae	Thottada, Elayavoor	<i>Paraserianthes falcataria</i>	-
32	<i>Acicnemis</i> sp.		Elayavoor, Thottada		-
33	<i>Rhynchophorus ferrugineus</i> Mishra		Aralam	<i>Cocos nucifera</i>	40%
34	<i>Lyctus africanus</i> Les.	Lyctidae	Aralam		50%
35	<i>Lyctus brunneus</i> Steph.		Thaliparamba	<i>Hevea brasiliensis</i>	60%
36	<i>Minthea rugicollis</i> Wlk.		Aralam, Elayavoor	<i>Albizia odoratissima</i>	40%
37	<i>Platypus cupulatus</i> Chap.	Platypodidae	Thottada, Elayavoor	<i>Bischofia javanica</i>	60%
38	<i>Platypus cylindrus</i> Fb.		Thottada, Aralam	<i>Palaquium ellipticum</i>	60%