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ORIGINAL RESEARCH ARTICLE

Studies on the Identification of Insects in Thanjavur District

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ABSTRACT

Entomology is an important branch of science. Insects impact our lives greatly, and the more we know about them, the more we can control the negative impact and enhance the positive impact that they have on our lives. Properly identifying and classifying insects increases our knowledge of them. The more you learn about insects, the easier it will become to identify them. The present investigation deals with the samples were collected from Thanjavur district. This is useful for find out harmful and beneficial insects in Thanjavur district. By this work there are harmful and beneficial insects in this area. But, when compared with beneficial, the harmful insects are more. The harmful insects lead economic loss also. In this work 39 Species belonging to 12 Orders were recorded. Among them order Coleoptera and Lepidoptera were predominant.

Key words: Harmful-dangerous, beneficial-useful, Coleoptera- Beetle, coleopteran, sheath and *pteron*.

1. INTRODUCTION

Insects influence our daily lives and play an important role in our environment. Entomology is the study of insects. It is a unique scientific field because it includes the biology of insects, their habits and habitats, medical effects, and economic impact.

An insect is an organism of the animal kingdom that belongs to the class of organisms known as Hexapoda. You may have noticed that preserved specimens look just like they did when they were alive. This is because of the exoskeleton, or external skeleton.

The most obvious characteristics of insects are exoskeleton ,three distinct body regions (head, thorax and abdomen) ,three pairs of legs, one pair of antennae, one pair of compound eyes ,two pairs of wings.

Insects have been with us for a very long time. Fossils provide evidence of insects existence as far back as 350 million years ago. More than two hundred species may be found in a typical city lot and about one million species may be found on one acre of land.

Harmful insects destroy our food, fiber crops, and timber. They also transmit diseases to humans. Annually, insects destroy enough timber to build 100,000 homes. This is more than is destroyed by forest fires. They destroy enough stored grain every year to feed 100 million people.

2. MATERIALS AND METHODS

Collection of sample

Collecting and trapping insects to find out what species are present is a basic and necessary part of virtually any sort of field study.

Identifying Insects

When trying to identify an unknown insect we first try to determine its correct Order. This can be done with the help of a key.

Class Insecta is divided into two subclasses, namely, Apterygota and Pterygota.

(i) Apterygota (= Ametabola) The subclass has 4 orders.

(ii)Pterygota (=Metabola) This subclass is divided into two superorders namely, *Exopterygota* and *Endopterygota.*

Division Exopterygota (=Hemimetabola) - has 16 orders in this group.

Division Endopterygota (=Holometabola) - has 9 orders in this group.

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Hand Searching Techniques

Hand searching is useful was where Insects have to be sampled from surfaces particularly in Thanjavur district.

Butterfly and Aerial Nets

Aerial or hand nets were lightweight nets designed for catching flying insects. The net was based on a commercially available telescopic handle fixed to a rim of plastic piping. The net bag was standard fine terylene sewn to a cloth strengthening rim The fully extended handle allows a reach of 1.5 meters.

Sweep Nets

Sweep nets were made from strong, close-woven material and are designed for thrashing through vegetation. The depth of the bag is important. Some designs are too shallow which allows active insects to escape easily. The bag should be deep enough to allow you to trap the catch by gathering the material together in one hand below the frame.

3. RESULTS AND DISCUSSION

Table 1: The table showing the distribution of Insect groups in Thanjavur District, Tamil Nadu, India

S. No	Insect Name
	Thysanura
1	Silverfish- Lespismasacchrina
	Odonata
2	Dragonflies- *Petaluridae Petaltails*
	Orthoptera
3	Cricket (insect)- *Grylloidea Gryllidae*
4	Handsome Meadow Katydid- *Orchelimum pulchellu*
5	Mole cricket- *Gryllotalpa brachyptera,*
	Dictyoptera
6	Cockroach- *Periplaneta americana*
7	Brown-banded Cockroach- *Blattellidae Supella longipalpa*
	Phasmadae
8	Stick Insects- *Leptynia hispanica*
	Coleoptera
9	Drugstore beetle- *Stegobium Paniceum*
10	Scarab beetles-*Scarabaeus sacer*
11	Darkling beetles- *Tenebrionoidea*
12	Red flour beetle - *Tribolium castaneum*
13	Confused flour beetle- *Tribolium confusum*
14	Cowpea weevil-*Callosobruchus maculates*
15	Longhorn Beetle- *Acanthocinus obsoletus*
16	Rice weevil- *Sitophilus Oryzae*
17	Bean weevil- *Acanthoscelides obtectus*
18	Soldier beetle- *Chauliognathus lugubris*
19	Maize weevil- *Sitophilus Zeamais*
20	Ladybug- *Hippodamia Convergens*
21	Ladybird(Coccinellidae)- *Coccinella magnifica*
	Hemiptera
22	Green Vegetable bug- *Nezara Viridula*
	Lepidoptera
23	Butterfly- *Charaxes brutus natalensis*
24	Papilionidae-*Papilio machaon*
25	Nymphalidae-*Nymphalis*
26	Pieridae- *Pieris rapae*
27	Baronet- *Euthalia Nais*
28	Pansy Precis lemonia- *Junonia Lemonias*
29	GreatEggfly- *Hypolimnas Bolina*
30	Tawny Coster- *Theretra Silhetensis*
31	Moths -Theretra silhetensis- Theretra silhetensis
32	Indianmeal Moth- *Plodia*
33	Angoumois Grain Moth -*Sitotroga cerealella*
	Diptera
34	Housefly- *Musca*
	Araneae
35	Spider- *disambiguation*
	Hymenoptera
36	Ant- *Oecophylla*
37	Honey bee- *Apis*
38	Sweat Bees- *Apis cerana cerana,*
	Phthiraptera
39	Head louse- *Pediculus humanus capitis*

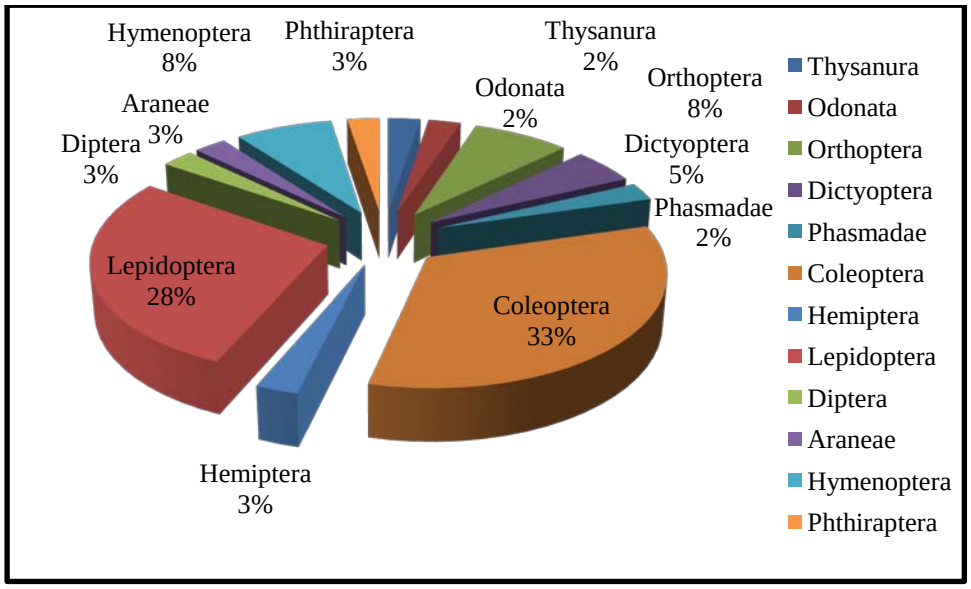

Fig 1: The Diagram showing the distribution of percentage of Insect groups in Thanjavur District

CONCLUSION

Entomology is an important branch of science. Insects impact our lives greatly, and the more we know about them, the more we can control the negative impact and enhance the positive impact that they have on our lives. Properly identifying and classifying insects increases our knowledge of them. The more you learn about insects, the easier it will become to identify them. The pervasive ecological importance of this great variety of insects makes them valuable to assess disturbance or environmental impacts of various kinds (Lehmkuhl *et al.*, 1984 and Rosenberg et al. 1986) through assessments of mortality, sublethal effects, population changes, and modifications in community structure. Knowledge of arthropods also is essential to conserve or manage ecosystems, because a skewed focus only on large and conspicuous organisms misrepresents ecosystem dynamics (Kremen *et al.*, 1993 and Finnamore 1996).

The samples were collected from Thanjavur district. This is useful for find out harmful and beneficial insects in Thanjavur district. By this work It concluded that there is harmful and beneficial insects in this area. But when compared with beneficial, the harmful insects are more. The harmful insects lead economic loss also.

Orders were recorded. Among them order Coleoptera and Lepidoptera were predominant. The order Coleoptera includes more species than any other order, constituting almost 25% of all known life-forms. About 40% of all described insect species are beetles, about 400,000 species (Hammond 1992), and new species are discovered frequently. Some estimates put the total number of species, described and undescribed, at as high as 100 million, but a figure of 1 million is more widely accepted (Arthur and Chapman 2009).

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