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Reporting of butterflies which are pests to food plants, from Uploan, Kalaburagi district, Karnataka

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Abstract
We always consider butterflies are useful insects. Yes, they are but there are few butterflies which are pests to few food plants. In India there are 15 species of butterflies which are recorded as pests. In this paper an attempt was made to list the butterflies which are pests to food plants from Uploan nature camp, Kalaburagi district, Karnataka, India. A total of nine species are recorded from research station, Uploan; belonging to five families of order Lepidoptera.

Keywords: pest, butterfly, food plants, Uploan, Kalaburagi

1. Introduction
Both moths and butterflies are belonging to the same order Lepidoptera of class Insecta, while studying the economic importance of this order the harmful insect we generally consider only moths not butterflies, we consider them only under the category of harmless insect but butterfly too harmful and they are pests of some food pants, Varshney (1978) [1] listed 15 species of butterflies which are pests of food plants they are

i) Family- Papilionidae
- Lime Butterfly – *Papilio demoleus* (L.)

ii) Family- Pieridae
- The Mottled Emigrant – *Catopsilia pyranthe* (L.)
- The Common grass yellow – *Eurema hecabe* (L.)
- The Cabbage butterfly – *Pieris brassicae* (L.)

iii) Family – Nymphalidae
- The Common evening brown- *Melanitis ismene* (Cramer)
- The Common castor – *Ergolis merione* (Cramer)
- The Peacock pansy – *Precis almanac* (L.),syn. *Junonia atmana* (L.)

iv) Family – Lycaenidae
- The Gram blue – *Euchrysops cnejus* (Fabr.),syn *Catochrysops cnejus* (Fabr.)
- The Pea blue – *Lampides boeticus* (L.), syn *Polyommatus boeticus* (L.); *Cosmolyce boeticus* (L.)
- The Common Guava blue – *Virachola isocrates* (Fabr.), syn *Deudoryx isocrates* (Fabr.)

v) Family Hesperiidae
- The Small branded swift – *Pelopidas mathias* (Fabr.); *Parnara mathias* (F.), *Baoris mathias* (F.)
- The Giant red eye – *Gangara thyrsis* (Fabr.)
- The Indian Palm bob – *Suastus gremius* (Fabr.)
- The Pale Palm dart – *Telicota augias* (L.)
- The Grass demon- *Udaspes folus* (Cramer)

Butterflies are not serous pests; still for some extinct they damage leaf, flower and fruits. Out of 15 species recorded by Varshney (1978) [1], I have recorded 10 species during my research period in my research station, Uplaon nature camp, Kalaburagi District, Karnataka.

2. Material and methods
2.1 Methodology
Field observation was made 4 days in a week (From Sunday to Wednesday) from April 2015 to July 2017. Observations were made between 8 am to 4 pm. (8:00h and 12:00h). The butterflies were recorded by direct visual observations and photographic evidence. (Dayanada, 2014) [2], the key characters used for identification were color pattern and wing spots (Evan, 1932; Wyntes-Blyth, 1957) [3, 4] and also by using field guides. (Gay*et al.*,1992; Antram,2002; Sharma *et al.*,2005; Gunathilagaraj*et al.*,2015; Kishandas, 2013; BNHS Field Guide by Kehimkar,2016) [5, 6, 8, 9, 10, 12]. The line transect method developed by institution of Terrestrial Ecology was followed to monitor the diversity (Pollard, 1979) [11].

2.2 Study area
Kalaburagi is located in the Northeast of Karnataka. The district is spread across 7 Talukas – Afzalpur, Aland, Chincholi, Chittapur, Kalaburagi, Jewargi and Sedum. Uploan Nature Camp lies on the geographical coordinates of 17^0 23'40.5''N and 76^0 52' 28.8"E situated about 13 km away from Kalaburagi Central bus stand, of survey number 16, with a geographical area 18.88 Hectare. Kalaburagi district has a semi-arid type of climate. During peak summer maximum temperature reaches 45^0C and December is the coldest month with minimum temperature 20 to 10^0C Average rain fall 1-839mm.
(Reference – Kalaburagi District Profile Government of Karnataka: the knowledge hub Asia)

3. Result and Discussion
There are nine species of butterflies which are pests of food plants observed in Uplaon belonging to five families, they are:

i) Family- Papilionidae
- Lime Butterfly – *Papilio demoleus* (L.)

ii) Family- Pieridae
- The Mottled Emigrant – *Catopsilia pyranthe* (L.)
- The Common grass yellow – *Eurema hecabe* (L.)

iii) Family – Nymphalidae

- The Common evening brown- *Melanitis ismene* (Cramer)
- The Common castor – *Ergolis merione* (Cramer)
- The Peacock pansy – *Precis almanac* (L.),

iv) Family - Lycaenidae

- The Gram blue – *Euchrysops cnejus* (Fabr.),syn *Catochrysops cnejus* (Fabr.)
- The Pea blue – *Lampides boeticus* (L.), syn *Polyommatus boeticus* (L.); *Cosmolyce boeticus* (L.)

v) Family Hesperiidae

- The Small branded swift – *Pelopidas mathias* (Fabr.); *Parnara mathias* (F.), *Baoris mathias* (F.)

Distribution, classification and morphological features of each species are discussed below.

1) Lime Butterfly, Linnaeus, 1758

Classification

Kingdom - Animalia
Phylum - Arthropoda
Class - Insecta
Order - Lepidoptera
Super family - Papilionoidea
Family - Papilionidae
Genus - *Papilio*
Species - *demoleus*

Lime Butterfly

Distribution in India

Maharashtra, West Bengal, Kerala, Karnataka, Odisha, Nagaland, Telangana, Andhra Pradesh, Assam, Tamil Nadu, Uttar Pradesh, Chhattisgarh, Gujarat, Manipur, Tripura, Madhya Pradesh, Dadra and Nagar Haveli, Haryana.

The caterpillar of lime butterfly feed on different species of Citrus like Oranges, bel, curry, ber (*zizyphus mauritiana*) leaf plants, sometimes the caterpillar eat up all the leaves of the host plant.

Young larva- dark brown with white markings resembling bird droppings. Grown up larva -pale yellowish green with dull yellowish brown head having a pink Y-shaped osmeterium, body with white, brown and grey lateral markings. (Gunathilagaraj *et al*., 2015, P.No- 278) [9].

2) Mottled Emigrant, Linnaeus, 1758

Classification

Kingdom - Animalia
Phylum - Arthropoda
Class - Insecta
Super family - Papilionoidea
Order - Lepidoptera
Family - Pieridae
Genus - *Catopsilia*
Species - *pyranthe*

Mottled Emigrant

Distribution in India

Kerala, Karnataka, Telangana, Andhra Pradesh, Maharashtra, Arunchal Pradesh, Tamil Nadu, Assam, Gujarat, West Bengal, Uttarakhand, Jharkhand, Punjab, Madhya Pradesh.

The caterpillar feeds on Chakaur (*Cassia occidentalis*), laburnum (*Cassia fistula*) and also feeds on other Leguminosae plants, the closely related species *Catopsillia crocale* larva is also a pest of Cassia.

Deep rich glossy green. Body wrinkled with thicky raised black spots and lateral yellowish white band bordered above with black dotted line. (Gunathilagaraj *et al*., 2015, P.No-298) [9].

3) Common Grass Yellow, Linnaeus, 1758

Classification

Kingdom - Animalia
Phylum - Arthropoda
Class - Insecta
Order - Lepidoptera
Super family - Papilionoidea
Family - Pieridae
Genus - *Eurema*
Species - *hecabe*

Common Grass Yellow

Distribution in India

Kerala, Madhya Pradesh, Karanataka, Telangana, Andhra Pradesh, Maharashtra, West Bengal, Tamil Nadu, Nagaland, Uttarakhand, Assam, Uttar Pradesh, Tripura, Meghalaya, Gujarat.

The larvae of this species feed on Agathi, Daincha, Sesbania, Acacia, Caesalpinia and Albizzia plants.

Larva is green in color, body rough, hairless with yellowish white lateral streak. (Gunathilagaraj *et al*., 2015, P.No- 295) [9].

4) Common Evening Brown, Linnaeus, 1758

Classification

Kingdom - Animalia
Phylum - Arthropoda
Class - Insecta
Order - Lepidoptera
Super family - Papilionoidea
Family - Nymphalidae
Genus - *Melanitia*
Species - *leda*

Common Evening Brown

Distribution in India

Karnataka, Goa, Telangana, Maharashtra, Kerala, Madhya Pradesh, Meghalaya, Sikkim, Uttarakhand, Punjab, Arunchal Pradesh, West Bengal, Assam, Uttar Pradesh, Delhi, Tripura, Chhattisgarh.

The larva mainly feeds on grasses; it is also a pest of paddy.

Bright parrot green. Head with two dark purplish horns hving black hairs. Body wrinkled with dark blue green dorsal stripe edged with a line of minute yellow dots. (Gunathilagaraj *et al*., 2015, P.No- 192) [9].

5) Common Castor, Cramer, 1777

Classification

Kingdom - Animalia
Phylum - Arthropoda
Class - Insecta
Order - Lepidoptera
Super family - Papilionoidea
Family - Nymphalidae
Genus - *Ergolis*
Species - *merione*

(Image courtesy of Common castor – Kishan Das K.R.)

Common Castor

Distribution in India

Kerala, Karanataka, Uttarakhand, Telangana, Andhra Pradesh, Punjab, Mizoram, Arunachal Pradesh, Maharashtra, West Bengal, Assam, Uttar Pradesh, Tamil Nadu, Chhattisgarh, Manipur, Tripura.

The caterpillar feed on leaf of castor, Tragia cannabina,Tragia involuvrata, Ricinus communis and other euphorbiaceae.

Larva is dark green. Head dark brown with a pair of straight reddish brown spines and the body with dorsal longitudinal brown stripe and 4 rows of short branched brown spines in each segment.(Gunathilagaraj *et al*., 2015, P.No- 260) [9].

6) Gram Blue, Fabricus, 1798

Classification

Kingdom - Animalia
Phylum - Arthropoda
Class - Insecta
Order - Lepidoptera
Super family - Papilionoidea
Family - Lycaenidae
Genus - *Euchrysops*
Species - *cnejus*

Gram Blue

Distribution in India

Maharashtra, Madhya Pradesh, Karnataka, Kerala, Punjab, Telangana, Andhra Pradesh, West Bengal, Odisha, Uttarakhand, Gujarat, Uttar Pradesh, Tripura, Assam, Tamil Nadu.

The larva is green in colour, humpbacked, hairy with dark brown head, dorsal purple line and pale diagonal stripes on the side of each segment.
It is the pest of lab-lab, Red gram; if they are in large numbers they empty most of the pods of the host plant. (Gunathilagaraj *et al*., 2015, P.No- 162) [9].

7) Pea Blue, Linnaeus, 1767
Classification

Kingdom	-	Animalia
Phylum	-	Arthropoda
Class	-	Insecta
Order	-	Lepidoptera
Super family	-	Papilionoidea
Family	-	Lycaenidae
Genus	-	*Lampides*
Species	-	*boeticus*

Pea Blue

Distribution in India
Maharashtra, Karnataka, Kerala, Arunachal Pradesh, West Bengal, Telangana, Andhra Pradesh, Uttarakhand, Assam, Manipur, Uttar Pradesh.
The larvae feed on various species of Pea, Arhar and on most of the pulses.
The larva is dark green or yellowish green or pearly white with brown head, dark dorsal stripe and reddish lateral streaks. (Gunathilagaraj *et al*., 2015, P.No- 149) [9].

8) Peacock Pansy, Linnaeus, 1758
Classification

Kingdom	-	Animalia
Phylum	-	Arthropoda
Class	-	Insecta
Order	-	Lepidoptera
Super family	-	Papilionoidea
Family	-	Nymphalidae
Genus	-	*Junonia*
Species	-	*almana*

(Image courtesy of Peacock pansy - Dr. Renuka K, Gulbarga University, Kalaburagi)

Peacock Pansy

Distribution in India
Maharashtra, Madhya Pradesh, west Bengal, Kerala, Karnataka, Meghalaya, Punjab, Mizoram, Telangana, Gujarat, Andhra Pradesh, Himachal Pradesh, Assam, Uttarakhand, Uttar Pradesh, Odisha, Rajasthan, Manipur, Tripura, Chhattisgarh, Dadra and Nagar Haveli.
The larvae of his butterfly destroy the rice fields on a large scale.
Larva is smoky black with orange neck and four rows of black-tipped light orange spines and minute hairs covering the body. (Gunathilagaraj *et al*., 2015, P.No- 228) [9].

9) Small Branded Swift, Fabricius, 1798
Classification

Kingdom	-	Animalia
Phylum	-	Arthropoda
Class	-	Insecta
Order	-	Lepidoptera
Super family	-	Hesperioidea
Family	-	Hesperiidae
Genus	-	*Pelopidas*
Species	-	*mathias*

Small Branded Swift

Distribution in India
Maharashtra, Madhya Pradesh, Karnataka, Kerala.
It is a pest of Paddy, Cholam and various kinds of grasses, it is not serious pest.

Larva is green in color, body elongate and smooth with red V-marks on the head, constricted neck, yellowish white lines across the body and white lateral lines. Dorsal surface often appears greenish-white, as if dusted with white powder. (Gunathilagaraj *et al*., 2015, P.No- 75) [9].

(Reference for distribution of all butterfly species - http;//www.ifoundbutterflies.org)

Table 1: Butterflies species which are pests of food plants recorded from the Uplaon Nature Camp, Kalaburagi

Butterfly Species	Species recorded
i) Family- Papilionidae	
1. Lime Butterfly – *Papilio demoleus* (L.)	1
ii) Family- Pieridae	
1. The Mottled Emigrant – *Catopsilia pyranthe* (L.) 2. The Common grass yellow – *Eurema hecabe* (L.)	2
iii) Family - Nymphalidae	
1. The Common evening brown- *Melanitis ismene* (Cramer) 2. The Common castor – *Ergolis merione* (Cramer) 3. The Peacock pansy – *Precis almanac* (L.),	3
iv) Family - Lycaenidae	
1. The Gram blue – *Euchrysops cnejus* (Fabr.),syn *Catochrysops cnejus* (Fabr.) 2. The Pea blue – *Lampides boeticus* (L.), syn *Polyommatus boeticus* (L.); *Cosmolyce boeticus* (L.)	2
v) Family Hesperiidae	
1. The Small branded swift – *Pelopidas mathias* (Fabr.); *Parnara mathias* (F.), *Baoris mathias* (F.)	1

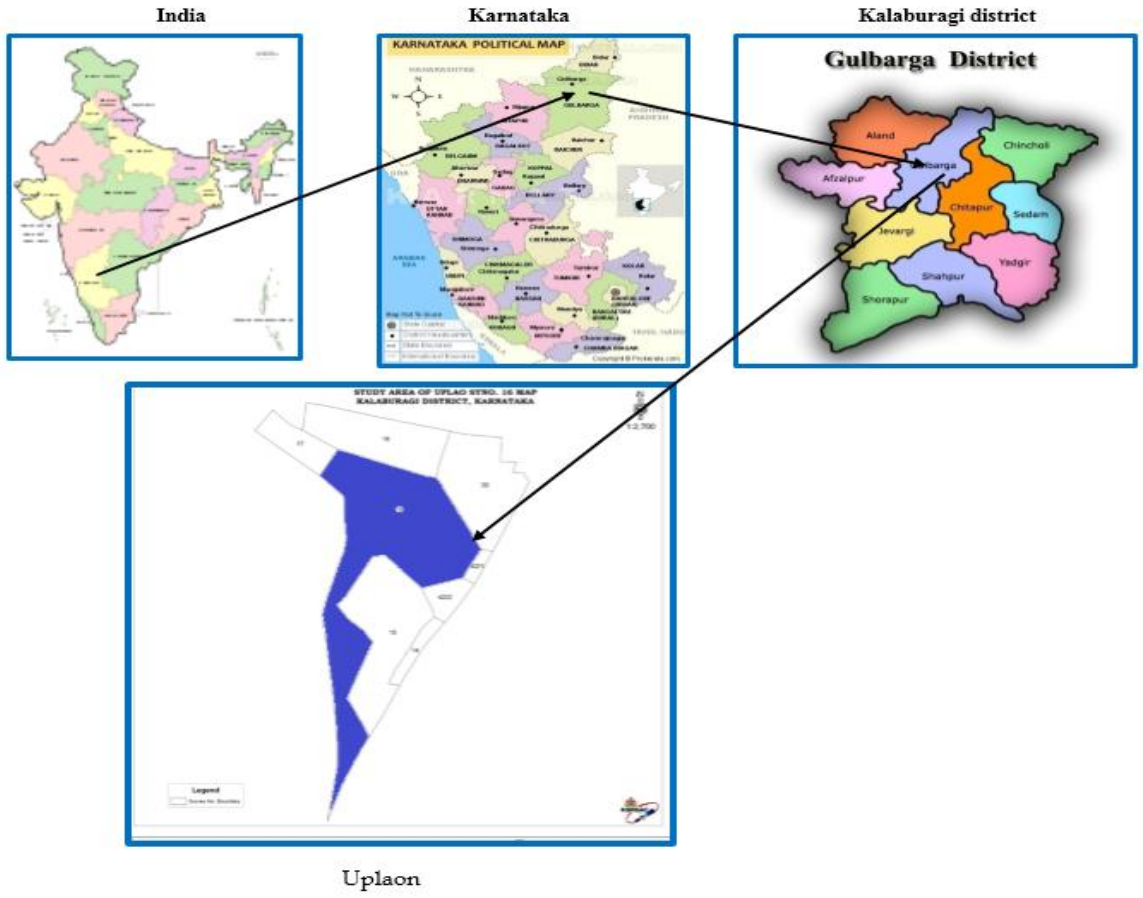

Fig 1: Study Area Map - Uplaon Nature Camp; Survey Number 16
(Image Courtesy, Remote Sensing Department, Gulbarga University, Kalaburagi)

4. Conclusion

Insects are economically very important group in Invertebrates, they are very much important to maintain the ecological balance. When compared to disadvantages or loss from insects to uses, they are very much fits into the latter category especially it is true for butterflies. There is a need to study advantages and disadvantages of butterflies scientifically to implement the ecological practices wisely and to get maximum benefit from them without disturbing or harming the biodiversity. This is a report of butterflies which are pests to few food plants.

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6. References

1. Butterflies as pests of food-plants, R.K. Varshney, Zoological Survey of India, Calcutta,Zoologiania.Published by the controller of Publications, New Delhi. 1978; 1:68-73.
2. Dayananda GY. Diversity of butterfly fauna in and around Gudavi bird Sanctuary, Sorab, Karnataka. Journal of Entomology and Zoology Studies. 2014; 2(5):376-380.
3. Evan WH. The identification of Indian Butterflies. Bombay Natural History Society. Bombay and International Book Distributors, Dehradun, 1932.
4. Wynter-Blynth MA. Butterflies of the Indian Region, Bombay Natural History society, Bombay.1957; 523:72.
5. Gay TI, Kehimkar D, Punitha JC. Common butterflies of India Oxford University press, Oxford, 1992.
6. Antram CB. Butterflies of India. A Mittal publication, New Delhi. 2002; 226.
7. Kunte K. Butterflies of Peninsular India (India: A Life scape) Hyderabad: University Press India. 2000; 272.
8. Sharma RM, Radhakrishna C. Insect Rhopalocera and Grypocera Fauna of Melghat Tiger Reserve Conservation Area series, 24. Zoological survey of India, Kolkata, 2005; 377-400.
9. Gunnathilagaraj K, Perumal TNA, Jayaram K, Ganesh M Kumar. Field Guide: South Indian Butterflies, first edition, published by Krab Media and Marketing Bangalore India. 2015; 359.
10. Kishandas KR. Chittegalu. First edition, Published by Arivu education and cultural trust Mysore, India. 2009; 136.
11. Pollard E. A National scheme for monitoring the Abundance of butterflies. The first three years British Entomological and Natural History Society. Proceedings and Transactions. 1979; (12):77-99.
12. Kehimkar Isaac; Butterflies of India. Bombay Natural History Society, Mumbai, 2016; xii:528.
13. Reference – Kalaburagi District Profile Government of Karnataka: the knowledge hub Asia)
14. Web link - http;//www.ifoundbutterflies.org/sp602/ Papilio-demoleus, Accessed on on30/4/2017, at 11:47 AM
15. Web link - http;//www.ifoundbutterflies.org/sp/809/ Catopsilia-pyranthe, Accessed on 30/4/2017, at 11:37 AM
16. Web link - http;//www.ifoundbutterflies.org/sp/767/ Eurema-hecabe, Accessed on 30/4/2017, at 11:39 AM.
17. Web link - http;//www.ifoundbutterflies.org/sp/979/ Pieris-brassicae, Accessed on 30/4/2017, At 11:43 AM
18. Web link -http;//www.ifoundbutterflies.org/sp/503/ Melanitis-leda, Accessed on 30/4/2017, at 12:02 PM.
19. Web link - http;//www.ifoundbutterflies.org/sp/765/ Ariadne-mrione, Accessed on 30/4/2017, at 12:06 PM.
20. Web link - http;//www.ifoundbutterflies.org/sp/585/ Euchrysops-cnejus, Accessed on 30/4/2017, at 11:58 AM.
21. Web link - http;//www.ifoundbutterflies.org/sp/596/ Lampides-boeticus, Accessed on 30/4/2017, at 11:54 AM.
22. Web link - http;//www.ifoundbutterflies.org/sp527/ Junonia-almana, Accessed on 30/4/2017, at 1:35PM.
23. Web link - http;//www.ifoundbutterflies.org/sp/821/ Pelopidas-mathias, Accessed on 30/4/2017, at 11; 49 AM.