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A CHECKLIST OF THE LONG-HORNED BEETLES (COLEOPTERA: CERAMBYCIDAE) OF ARUNACHAL PRADESH, NORTHEASTERN INDIA WITH SEVERAL NEW REPORTS

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Abstract: Northeastern India is one of the hot spots of mega biodiversity of the world. The collections of cerambycid beetles were made from the forest region of Arunachal Pradesh, India during 2008–2013. A total of 49 species of cerambycids were collected during the survey, belonging to three subfamilies and a checklist of all the species is provided. Taxonomic synonyms, bibliography alongwith new distribution and list of host plants of the region are included. *Rhytidodera griseofasciata* is reported for the first time from India, besides seven other species, viz., *Nupserha nigriceps*, *Pterolophia (Hylobrotus) tuberculatrix*, *Neocerambyx grandis*, *Olenecamptus indianus*, *Obereopsis obscura obscura*, *Aristobia reticulator*, and *Sarothroceras lowii* are being reported from Arunachal Pradesh for the first time.

Keywords: Cerambycidae, Coleoptera, Long-horned Beetles, wood boring beetles.



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Authors Contribution: The survey works, collection of specimens and the information on host plants and biology are provided by MMK. The major parts of the manuscript are written by MMK. KMS contributed to the preparation of checklist and collection of literature for synonyms. VVR contributed significantly to species identification and formatting the checklist.

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INTRODUCTION

The state of Arunachal Pradesh situated in the northeastern region of India has six broad rich forest types. The location of the state is at the juncture of palaeartic, Indo–China and Indo–Myanmar bio–geographical regions. Longicorn beetles are forest insects that constitute one of the largest groups of wood boring beetles. Most are dead wood feeders while some contribute to regulating living forest and fruit trees including plantation crops, weeds, orchids etc. The family cerambycidae contains more than 35,000 species under 4,000 genera in 11 subfamilies (Lawrence 1982). A total 396 species of cerambycids were described by Gahan (1906) from the Indian subcontinent. About 1500 species of cerambycids were recorded from India (Beeson 1941; Breuning 1960–62, 1964, 1965, 1966). Sengupta & Sengupta 1981 recorded 16 cerambycids from Arunachal Pradesh. Later eight species of longicorns were reported in West Siang of Arunachal Pradesh by Singh et al. (2010). Several more species have been reported from India and adjacent countries (Holzschuh 1999, 2003; Ghate 2012; Agarwala & Bhattacharjee 2012).

Arunachal Pradesh covers an area of 83,743km² and lies between 26°28'–29°30'N & 91°20'–97°30'E. Owing to great altitudinal variation, from less than 100m to above 5,000m climate varies with elevation and receives heavy rainfall of 80–160 inches (2,000–4,100 mm) annually, most of it between May to September and humidity ranges from 70–98 % (Hegde 2003). The complex geography and numerous altitudinal gradients support a high biodiversity hot spot enabling the cerambycids for better survival. The present study was taken up as an initiative to identify and document the longicorn beetles of this region.

MATERIAL AND METHODS

The study was conducted from 2008 to 2013 in subtropical plain and hill zone (East Siang, West Siang, Upper Siang, Lower Siang, Lohit, Changlang, Ziro and Papumpare districts) of Arunachal Pradesh. The longicorn beetles were collected from ornamental plants, old and fresh wooden logs, trees, weeds of the forest and also with light traps. The individual specimens were picked up with forceps, placed in a killing jar containing benzene, and pinned (Chandra et al. 2015). The specimens were dried and transferred to insect boxes and kept at the Department of Plant Protection, College of Horticulture and Forestry, Pasighat. Collected specimens were identified to species level following key characters provided by Gahan (1906), Rondon & Breuning (1970), Mukhopadhyay & Biswas

(2000a), Mukhopadhyay & Halder (2004), Holzschuh (1999, 2003) and also compared with identified specimens present in the National Pusa Collection, Division of Entomology, Indian Agricultural Research Institute, New Delhi. The taxonomic synonyms were collected from various sources (Aurivillius 1912; Breuning 1957, 1964, 1965, 1966; Cherepanov 1979; Hayashi & Makihara 1981; Hayashi et al. 1988; Chemsak 1996; Holzschuh 1999, 2003; Makihara et al. 2002, 2008; Heffern 2005; Miguel 2005; Lobl & Smetana 2010) and compiled. The specimens discussed in this work were deposited in the National Pusa Collection, Division of Entomology, Indian Agricultural Research Institute, New Delhi.

RESULTS AND DISCUSSION

During the five year survey, 49 species of cerambycids belonging to three subfamilies were recorded. Subfamily Lamiinae was found to be dominant with 28 species followed by Cerambycinae with 11 species. Subfamily Prioninae included 10 species. *Rhytidodera griseofasciata* Pic reported from China earlier is being reported from India for the first time during the present study. However, the biology and host plants of *R. griseofasciata* remain unknown. Beside this, seven species, viz., *Nupserha nigriceps*, *Pterolophia (Hylobrotus) tuberculatrix*, *Neocerambyx grandis*, *Olenecamptus indianus*, *Obereopsis obscura obscura*, *Aristobia reticulator* and *Sarothrocera lowii* are being reported from Arunachal Pradesh, northeastern India for the first time. The status of the new reports of the present study were confirmed by reviewing previously published literature of Zoological Survey of India (Sengupta & Sengupta 1981; Mukhopadhyay & Biswas 2000a, 2002b; Mukhopadhyay & Halder 2004; Anonymous 2006; Ramakrishna & Alfred 2006; Singh et al. 2007), Gahan (1906), Singh et al. (2010), Agarwala & Bhattacharjee (2012), CAB abstracts, Catalogue of life and Zoological records. The known host plants and colour images of all the specimens have also been included in the present paper.

CHECKLIST OF COLLECTED SPECIMENS

Family Cerambycidae

Subfamily Prioninae

1. *Nepiodes costipennis costipennis* (White, 1853) (Image 1)

Megopis costipennis White, 1853 *Cat. Coleopt. Brit. Mus. Longicorn.* 1 (7): 28.

Aegosoma lacertosum Pascoe, 1867 *Ann. Mag. Nat. Hist.* 3(19) 114: 413.

Aegosoma costipenne Gahan, 1906 *Fauna Brit. India Col.* 1:49.

Megopis (Megopis) costipennis Lameere, 1909 *Ann. Soc. Ent. Belg.* 53 (4): 147.

Aegosoma costipenne Mukhopadhyay & Halder, 2004 *State Fauna Series ZSI* 10: 421–431.

Nepiodes costipennis Komiya & Drumont, 2010 *Elytra* 38 (2): 169–192.

Nepiodes costipennis subsp. *costipennis* Lobl & Smetana 2010, *Cat. Palaearctic Coleopt.*–6, *Apollo books*: 40.

Specimens examined: CHF/2015/202, female, 12.iv.2012, forest ground, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Kumawat; CHF/2015/203, male, 12.iv.2012, forest ground, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Kumawat.

Distribution: Arunachal Pradesh, Assam, Manipur, Sikkim, Bangladesh, Myanmar.

Biology: *N. costipennis* recorded as boring into teak tree in Assam, India (Lefroy 1909).

Host Plants: Teak *Tectona grandis*; Kuli teak plantation (Stebbing 1914).

2. *Nepiodes bowringi* (Gahan, 1894) (Image 2)

Aegosoma bowringi Gahan, 1894 *Ann. Mag. Nat. Hist.* 6 (14): 226.

Megopis (Megopis) bowringi Lameere, 1909

Megopis (Megopis) sulcipennis Hayashi, 1979 (nec White 1853)

Nepiodes bowringi Lobl & Smetana, 2010 *Cat. Palaearctic Coleopt.*–6, *Apollo books*: 86–87.

Nepiodes bowringi Komiya & Drumont, 2010 *Elytra* 38 (2): 169–192

Specimens examined: CHF/2015/206, male, 14.iii.2010, Light trap, Pasighat, (elevation 160m), Arunachal Pradesh, India, coll. Bilin Maying; CHF/2015/207, male, 26.v.2010, Banana field, Pasighat, (elevation 150–180 m), Arunachal Pradesh, India, coll. Kumawat; CHF/2015/208, female, 20.iv.2012, Forest floor, Pasighat (elevation 170m), Arunachal Pradesh, India, coll. Kumawat.

Distribution: India, Myanmar, Nepal

Biology: Unknown

Host Plants: Unknown

3. *Aegolipton marginale* (Fabricius, 1775) (Image 3)

Cerambyx marginalis Fabricius, 1775 *Officina Libraria Kortii*: 30 + 169.

Cerambyx marginalis Olivier, 1795 *Imprimerie de Lanneau* 4: 7.

Cerambyx marginalis Fabricius, 1801 *Bibliopoli Acad. Novi, Kiliae* 2: 1–280.

Aegosoma marginale White, 1853 *Proc. Zoo. Soc. Lond.* 21 (249): 27.

Aegosoma marginale White, 1853 *Cat. Coleopt. Brit. Mus. Lond.* (1)7: 31

Aegosoma javanicum Redtenbacher, 1868 *Zool. Theil. Zweiter Band: Coleopt.* 2: 202.

Aegosoma marginale Pascoe, 1869 *Trans. Ent. Soc. Lond.* 3 (3) 7: 679.

Aegosoma marginale Lansberge, 1884 *Notes Leyden Mus.* 6 (3): 156.

Aegosoma marginale Gahan, 1900 *Ann. Mag. Nat. Hist.* 5 (7) 28: 347.

Aegosoma marginale Gahan, 1906 *Fauna Brit. India Col.* 1: 45.

Megopis (Baraliopton) marginalis Lameere, 1909 *Ann. Soc. Ent. Belg.* 53 (4): 152.

Megopis (Baraliopton) marginalis Lameere, 1913 *Coleopt. Cat.* (52) 22:42.

Megopis (Baraliopton) marginalis Kano, 1933 *Kontyu* 6 (5–6): 260.

Megopis (Aegolipton) marginalis Gressitt, 1940 *Philippine J. Sci.*, 72 (1–2): 23.

Megopis (Aegolipton) marginalis Gressitt, 1951 *Longicornia* 2: 15.

Cerambyx marginalis Zimsen, 1964 *Copenhagen, Munksgaard* 166.

Megopis (Baraliopton) marginalis Duffy, 1968 *Brit. Mus (Nat. Hist.)*, London: 52.

Megopis (Aegolipton) marginalis Gressitt & Rondon, 1970 *Pacific Insects Mono.* 24: 18.

Megopis (Aegolipton) marginalis Hudepohl, 1990 *Ent. Zeitschrift fur Ent.* 11 (18): 286.

Megopis marginalis Hua 2002 *Zhongshan (Sun Yat-sen) Univ. Press, Guangzhou* 2: 214.

Aegolipton marginale Komiya, 2005 *Elytra* 33 (1): 152, 178.

Aegolipton yunnanensis Feng & Chen, 2007 *Acta Zootaxo. Sinica* 32 (3): 717–720.

Aegolipton marginale Feng & Chen, 2007 *Acta Zootaxo. Sinica* 32 (3): 717.

Aegolipton marginale Lobl & Smetana, 2010 *Cat. Palaearctic Coleopt.* - 6, *Apollo books*: 38.

Specimen examined: CHF/2015/209, male, 22.iii.2012, Forest floor, Pasighat, (elevation 150–180 m), Arunachal Pradesh, India, coll. Bhutia.

Distribution: Peninsula of southeastern Asia including China, Java, Sumatra, Banka, Borneo, Celebes, Amboina, India, Myanmar, Thailand, Vietnam, Laos, Taiwan, Formosa.

Biology: Unknown

Host Plants: Unknown

4. *Dorysthenes (Lophosternus) indicus* (Hope, 1831) (Image 4)

Prionus indicus Hope, 1831 *Gray's Zool. Misc.* 1: 27.

Lophosternus (Cyrtosternus) hopei Guerin, 1844 *Icon. Regne Anim. Ins.*: 210.

Cyrtognathus indicus White, 1853 *Cat. Coleopt. Brit. Mus.* 7: 1–6.

Cyrtognathus indicus Lameere, 1890 *Comptes–Rendus des Sea. de la Soc. Ento. Belg.* (4): 13.

Lophosternus indicus Gahan, 1906 *Fauna Brit. India Col.* 1: 10.

Lophosternus socius Gahan, 1906 *Fauna Brit. India, Col.* 1: 11.

Dorysthenes (Lophosternus) indicus Lameere, 1913 *Col. Cat.* 52: 68.

Dorysthenes (Lophosternus) indicus Villiers & Chujo, 1966 *J. College Arts Sci.* 4 (4): 550.

Dorysthenes indicus Hua, 2002 *Zhongshan (Sun Yat–sen) Univ. Press, Guangzhou*, 2: 1–205.

Lophosternus socius Mukhopadhyay & Halder, 2004 *State Fauna Series ZSI India*, 10: 424.

Dorysthenes indicus Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e.* 5: 497.

Specimen examined: CHF/2015/212, male, 2.x.2008, Pasighat (elevation 160m), Arunachal Pradesh, India, Coll. Madhu.

Distribution: Arunachal Pradesh, Bhutan, China, Nepal, Tibet.

Biology: Unknown

Host Plants: Unknown

5. *Dorysthenes (Lophosternus) huegelii* (Redtenbacher 1848) (Image 5)

Cyrtognathus huegelii Redtenbacher, 1848 *Hugel's Kaschmir* 4 (2): 550.

Cyrtognathus indicus huegelii White, 1853

Cyrtognathus falco Thomson, 1877 *Rev. Mag. Zool.* (3) 5 (40): 262.

Lophosternus falco Gahan, 1906 *Fauna Brit. India, Col.* 1: 11.

Lophosternus huegelii Gahan, 1906 *Fauna Brit. India Col.* 1: 12.

Lophosternus palpalis Gahan, 1906 *Fauna Brit. India Col.* 1: 12.

Dorysthenes (Lophosternus) hugeli Lameere, 1911 *Ann. Soc. Ent. Belg.* 55 (9): 330.

Dorysthenes (Lophosternus) hugeli var. *falco* Lameere, 1913 *Coleopt. Cat.* (52) 22:69.

Dorysthenes (Lophosternus) hugeli var. *palpalis*

Lameere, 1913 *Coleopt. Cat.* (52) 22:69.

Dorysthenes (Lophosternus) hugely Gressitt, 1950 *Indian For. Rec.* 8 (2): 9.

Dorysthenes huegelii Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e.* 5: 497.

Specimen examined: CHF/2015/214, male, 10.iv.2010, Forest ground, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. M.M. Kumawat.

Distribution: Arunachal Pradesh, Assam, Darjeeling, Kashmir, Sikkim, China, Nepal.

Biology: Adults start emerging with the onset of pre-monsoon rains during the second fortnight of June and the majority of the beetles (75–80 %) emerge by the first week of July but the emergence continues up to the second week of August depending upon the frequency of rainfall (Sharma & Khajuria 2005). The eggs are placed in an interstic in the bark (Stebbing 1914). The eggs are also laid 8–12 mm below the soil surface and after hatching the grubs initially feed on organic matter and then bore into the roots of the tree. It takes up to 3.5 years for them to mature (Atwal & Dhaliwal 1997).

Host Plants: It is a serious pest of apple trees. (Verma & Thapa 2005). The larvae also bore into the roots of oak trees, *Quercus* sp. (David & Ramamurthy 2012).

6. *Bandar pascoei pascoei* (Lansberge, 1884) (Image 6)

Macrotoma Pascoei Lansberge, 1884 *Notes Leyden Mus.* 6: 144.

Macrotoma luzonum Pascoe, 1869 *Trans. Ent. Soc. Lond.* (3)3: 666.

Macrotoma fisheri Waterhouse, 1884 *Ann. Mag. Nat. Hist.* (5)14: 382.

Macrotoma fisheri Gahan, 1906 *Fauna Brit. India Col.* 1: 35.

Macrotoma (Bander) Fisheri Lameere, 1912 *Mem. Soc. Ent. Belg.* 21: 144.

Macrotoma (Bander) Pascoei Lameere, 1912 *Mem. Soc. Ent. Belg.* 21: 144.

Macrotoma (Bander) fisheri Gressitt, 1951 *Longicornia* 2: 11.

Macrotoma (Bander) fisheri ssp. *khoi* Hayashi, 1975 *Bull. Osaka Jonan Women's Jr. Coll.* 10: 168.

Macrotoma fischeri Heyrovsky, 1976 *Kumbu Himal* 5: 125.

Bander pascoei pascoei Quentin & Villiers, 1981 *Ann. Soc. Ent. Fr.* 17(1): 363.

Specimens examined: CHF/2015/217, male, 01.iv.2010, light trap, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Jeebit; CHF/2015/218, female, 30.v.2011, light trap, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Bilin Maying.

Distribution: Sri Lanka, India, Tibet, Nepal, Myanmar, Thailand, Laos, Vietnam, Malay Peninsula, Sumatra, Java, Borneo, Billiton Island, Banga Island, southern China and Hainan Island.

Biology: Unknown.

Host Plants: *Castanea mollissima*, *Diospyros kaki*, *Malus pumila*, *Pistacia chinensis*, *Prunus armeniaca*, *P. persica*, *Pyrus serotina* and *Quercus variabilis* (Gressitt 1951).

7. *Anomophysis plagiata* (Waterhouse, 1884) (Image 7)

Macrotoma plagiata Waterhouse, 1884 *Ann. Mag. Nat. Hist.* (5) 14 (84): 381.

Macrotoma vidua Lameere, 1903 *Mem. Ent. Soc. Belg.* 11: 167, 199.

Macrotoma plagiata Gahan, 1906 *Fauna Brit. India Col.* 1: 37.

Macrotoma (*Zooblast*) *plagiata* Lameere, 1913 *Coleopt. Cat.* (52) 22: 28.

Macrotoma (*Zooblast*) *vidua* Lameere, 1913 *Coleopt. Cat.* (52) 22: 28

Macrotoma (*Zooblast*) *plagiata* Lameere, 1919 *Coleopt. Generate Insecto.* 172: 51.

Macrotoma (*Zooblast*) *crenata* Gressitt & Rondon, 1970 *Pacific Insects Mono.* 24: 13.

Anomophysis plagiata Quentin & Villiers, 1981 *Ann. Soc. Ent. Fr.* 17 (3): 361, 376, 383.

Specimens examined: CHF/2015/222, male, 20.iv.2010, light trap, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Bilin Maying. CHF/2015/223, female, 14.iii.2010, light trap, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Bilin Maying.

Distribution: Central Asia, Sri Lanka, India, Pakistan, Afghanistan, Burma, Laos.

Biology: Unknown

Host Plants: Unknown

8. *Prionomma atratum* (Gmelin, 1789) (Image 8)

Prionus atratum Gmelin, 1789 *Syst. Nat.* 1(4): 1818.

Prionus orientalis Olivier, 1795 *Ent.* 4 (66): 28.

Prionus tranquebaricus Fabricius, 1798 *Ent. Syst. Suppl.* 141.

Prionus buphtalmus Fabricius, 1801 *Bibliopoli Academici Novi Kiliae* 2: 1–687.

Armiger hussarus ceilonensis Voet, 1806 *La Haye Bakhuyzen* 2: 1–254.

Prionoma orientalis White, 1853 *Cat. Col. Brit. Mus. Longic.* 1 (7): 19.

Prionomma atratum Gahan, 1906 *Fauna Brit. India Col.* 1: 17.

Prionoma (*Prionomma*) *atratum* Lameere, 1910 *Ann. Soc. Ent. Belg.* 54: 279.

Prionomma atratum Quentin & Villiers, 1981 *Ann. Soc. Ent. Fr.* 17 (3): 361–383.

Specimens examined: CHF/2015/227, male, 05.v.2010, light trap, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Sanchi; CHF/2015/228, female, 08.iv.2008, forest logs, Pasighat (elevation 180m), Arunachal Pradesh, India, coll. Evoni.

Distribution: Sri Lanka, southern India, Arunachal Pradesh.

Biology: The adult appears in June–July. It is a borer of stumps and decaying logs making very large tunnels, the mature larva being over five inches long (Beeson 1941).

Host Plants: *Abies pindrow*, *A. webbiana*, *Juglans regia*, *Ficus excelsa*, *Boswellia serrata* (Beeson 1941; Duffy 1968).

9. *Rhaphipodus subopacus* Gahan, 1890 (Image 9)

Rhaphipodus subopacus Gahan, 1890 *Ann. Mag. Nat. Hist.* 6: 48.

Rhaphipodus (*Rhaphipodus*) *subopacus* Lameere, 1903 *Mem. Ent. Soc. Belg.* 11: 73

Rhaphipodus subopacus Gahan, 1906 *Fauna Brit. India Col.* 1: 32

Rhaphipodus subopacus Lameere, 1912 *Mem. Ent. Soc. Belg.* 21: 138

Specimen examined: CHF/2015/231, female, 13.iv.2008, forest logs, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Pooja.

Distribution: Arunachal Pradesh, Mumbai, Tamilnadu, Uttar Pradesh, West Bengal

Biology: Larvae bores into the dead wood (Duffy 1968; Mathur & Singh 1961).

Host Plants: *Sapium sebiferum*, *Salmaalina malabarica* (Duffy 1968); *Ailanthus triphysa* (Verma 1986).

10. *Baralipion maculosum* Thomson, 1857 (Image 10)

Baralipion maculosum Thomson, 1857 *Arch. Ent.* 1: 341–344.

Megopsis maculosa Lameere, 1909 *Ann. Soc. Ent. Belg.* 53(4): 135–170.

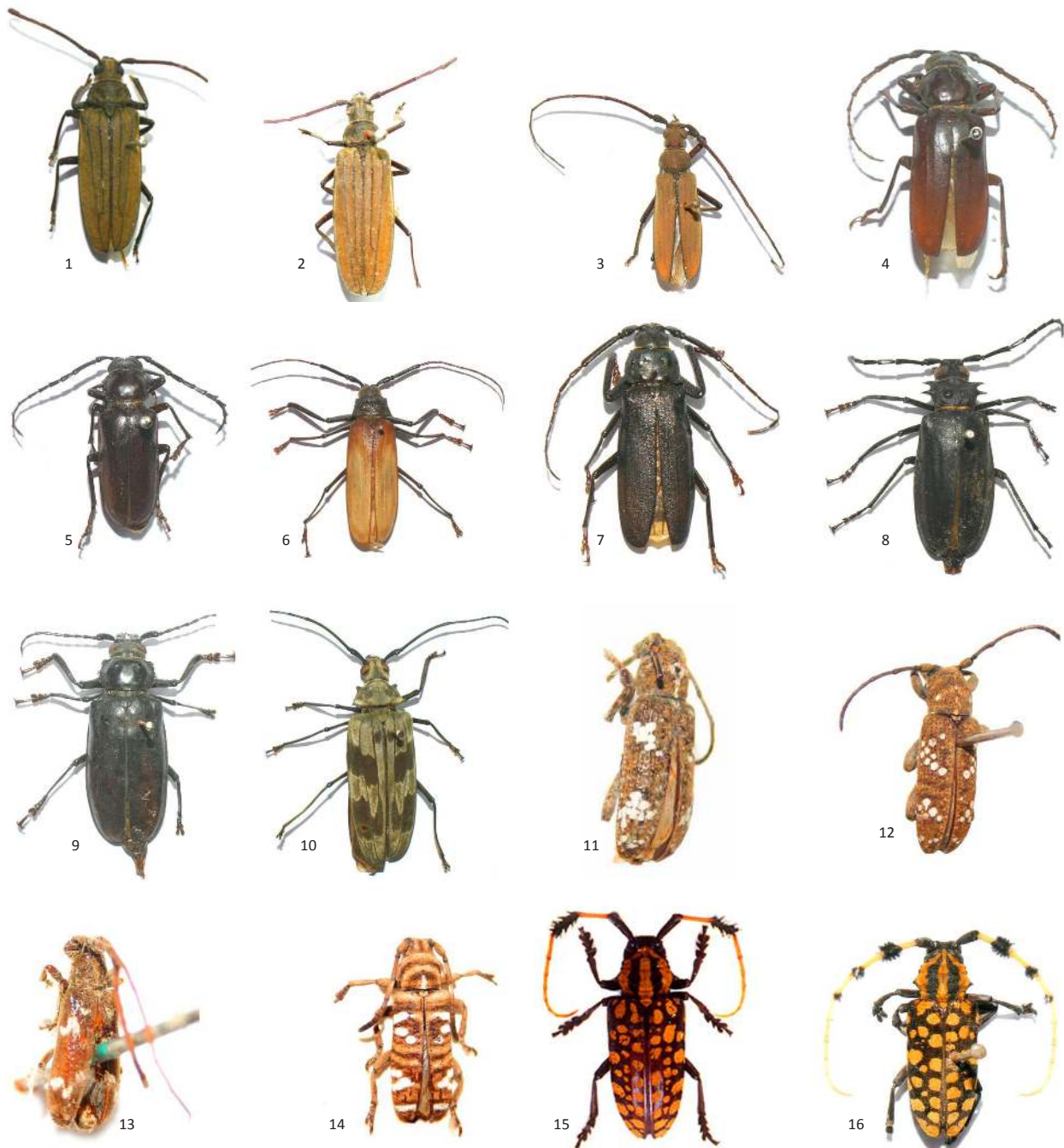
Megopsis maculosa Gressitt 1940 *Philippine J. Sci.* 72 (1–2): 1–239.

Baralipion maculosum Lepesme & Breuning, 1952 *Trans. IXth Inter. Cong. Ent.*, Amsterdam 11: 139–142.

Megopsis maculosa Gressitt & Rondon, 1970 *Pacific Insects Mono.* 24: 1–314.

Baralipion maculosum Komiya, 2003 *Elytra* 31 (1): 43–54.

Specimens examined: CHF/2015/233, male, 19.iv.2009, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Herojit; CHF/2015/234, female, 23.v.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India,



Images 1–16. 1 - *Nepiodes costipennis costipennis*; 2 - *Nepiodes bowringi*; 3 - *Aegolipton marginale*; 4 - *Dorysthenes (Lophosternus) indicus*; 5 - *Dorysthenes (Lophosternus) huegellii*; 6 - *Bandar pascoei pascoei*; 7 - *Anomophysis plagiata*; 8 - *Prionomma atratum*; 9 - *Rhaphipodus subopacus*; 10 - *Baraliphton maculosum*; 11 - *Apomecyna saltator*; 12 - *Apomecyna cretacea*; 13 - *Apomecyna histrio histrio*; 14 - *Apomecyna tigrina indica*; 15 - *Aristobia approximator*; 16 - *Aristobia reticulator*. © M.M. Kumawat.

coll. Sanchi.

Distribution: Arunachal Pradesh, Myanmar, Thailand

Biology: Unknown

Host Plants: Unknown

Subfamily: Lamiinae

11. *Apomecyna saltator* (Fabricius, 1787) (Image 11)

Lamia saltator Fabricius, 1787 *Hafniae, Proft* 1: 141

Apomecyna neglecta Pascoe, 1865 *Trans. Ent. Soc. Lond.* 3, 3, 1: 152.

Apomecyna pertigera Thomson, 1868 *Physis Rec. Hist. Nat.* 2, 6: 160.

Apomecyna niveosparsa Fairmaire, 1895 *Ann. Soc. Ent. Belg.* 39: 185.

Apomecyna multinotata Pic, 1918 *Mel. Exot. Ent.* 28: 5.

Apomecyna tonkinea Pic, 1918 *Mel. Exot. Ent.* 28: 5.

Apomecyna sinensis Pic, 1918 *Mel. Exot. Ent.* 28: 5.

Apomecyna excavaticeps Pic, 1918 *Mel. exot. Ent.* 28: 6.

Apomecyna subuniformis Pic, 1944 *Opusc. Mart.* 13: 14.

Specimen examined: CHF/2015/235, male, 01.iv.2010, forest weeds, East Siang (elevation 180m), Arunachal Pradesh, India, coll. T. Riba.

Distribution: Widely distributed in all over India, subtropical China, Pakistan, Taiwan and Vietnam.

Biology: The grubs are brownish in colour having flattened head and thorax, soft and distinctly segmented abdomen. Eggs are laid single in the epidermis of the stems. On hatching, grubs bore into the long trailing stems or near the node and tunnel inside. Adult beetles gnaw the leaf petioles and soft parts of the stem. Egg, larval and pupal periods last for 5–7, 31–35 and 7–9 days, respectively (Srivastava & Butani 2009; Muthukrishnan et al. 2005).

Host Plants: Ivy gourd, bottle gourd, ridge gourd, snake gourd, sponge gourd, pumpkin (Beeson 1941; Nair 1975; David & Ramamurthy 2012).

12. *Apomecyna cretacea* (Hope, 1831) (Image 12)

Callidium cretaceum Hope, 1831 *Gray's Zool. Misc.* 1: 28.

Apomecyna proba Newman, 1842 *The Entomologist* 1, 19: 299.

Apomecyna perroteti Thomson, 1868 *Physis Rec. Hist. Nat.* 2, 6: 159.

Apomecyna laosensis Pic, 1938 *Bull. Soc. Ent. France* 43: 124.

Apomecyna cretacea Rondon & Breuning, 1971 *Pacific Insects Mono.* 24: 352.

Apomecyna cretacea Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press, Guangzhou*, 2: 1–612.

Apomecyna (Apomecyna) cretacea Lobl & Smetana, 2010 *Cat. Palaearctic Coleopt.-6, Apollo books*: 228.

Specimen examined: CHF/2015/237, male, 20.iv.2010, forest weeds, East Siang (elevation 180m), Arunachal Pradesh, India, coll. Subhash.

Distribution: India, Himalayan India, India, Nepal, Subtropical China, Taiwan, Laos, Philippines, S. Asia, Manila

Biology: Biology similar to that of *A. saltator*. More common in south India (Srivastava & Butani 2009).

Host Plants: Cucurbitaceous plants

13. *Apomecyna histrio histrio* (Fabricius, 1793) (Image 13)

Lamia histrio Fabricius, 1793 *Hafniae, Proft* 1, 2: 288.

Saperda alboguttata Megerle, 1802 *Appendix Novus*, 473: 10.

Apomecyna histrio Castelnau, 1840 *P. Dumenil* 2: 492.

Apomecyna alboguttata Dejean, 1821 *Crevot* :

Apomecyna histrio Blanchard, 1849 Paris, Deterville and Crochard: 68.

Apomecyna (Apomecyna) quadrifasciata Thomson, 1868 *Physis Rec. Hist. Nat.* 2, 6: 159.

Apomecyna maculaticollis Pic, 1918 *Mel. exot. Ent.* 28: 6.

Saperda alboguttata Bousquet et al., 2009 *Zootaxa* 2321: 26.

Apomecyna histrio histrio Ohbayashi & Niisato, 2007 *Tokai Univ. Press, Kanagawa*: 532.

Specimen examined: CHF/2015/238, male, 05.v.2010, wild cucurbits, East Siang (elevation 180m), Arunachal Pradesh, India, coll. S. Tamang.

Distribution: Himalayan India, North East India, Japan, Korean Peninsula (South Korea), Laos, Moluccas, Nepal, Pakistan, Philippines, Siberia (East Siberia), Subtropical China, Taiwan.

Biology: The pest overwinters as grub inside the stem from October to February. Adult emergence from stems takes place usually during May. Incubation, grub and pupal periods last for 5–6, 22–33 and 6–8 days, respectively. A life cycle is completed in 35–46 days and adult longevity is 33–39 days (Lefroy 1909). There are 3 to four generations in a year.

Host Plants: Ridge gourd, smooth gourd, sponge gourd (Srivastava & Butani 2009), chow-chow, *Sechium eduli*; *Coccinia indica* (David & Ramamurthy 2012) and *Cephalandra* sp.

14. *Apomecyna tigrina indica* Breuning, 1969 (Image 14)

Apomecyna tigrina Thomson, 1857 *Arch. Ent.* 1: 343.

Apomecyna tigrina Rondon & Breuning, 1971 *Pacific Insects Mono.* 24: 353.

Apomecyna tigrina Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press, Guangzhou*, 2: 195.

Apomecyna tigrina indica Breuning, 1969 *Bull. Mus. Nat. Hist. Nat.* 2, 41, 3: 655–670.

Specimens examined: CHF/2015/241, male, 13.xi.2008, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Carmel; CHF/2015/242, female, 02.iv.2010, wild cucurbits, East Siang (elevation 160m), Arunachal Pradesh, India, coll. Kumawat.

Distribution: Himalayan India, India (North East India), China, Indonesia, Laos.

Biology: Unknown

Host Plants: Unknown

15. *Aristobia approximinator* (Thomson, 1865) (Image 15)
Celosterna approximator Thomson, 1865 *Mem. Soc. R. Sci. Liege* 19: 552.

Aristobia birmanica Gahan, 1895 *Ann. Mus. Civ. Genova* 34: 40.

Aristobia approximator Breuning, 1943 *Novit. Entomol., third supp.* (89–106): 190.

Aristobia approximator m. *birmanica* Breuning, 1943 *Novit. Entomol., third supp.*, (89–106): 190.

Aristobia approximator m. *birmanica* Breuning & Chujo, 1966 *Mem. Fac. Lib. Arts Edu. Kagawa Univ.* 2 (135): 1–4.

Aristobia approximator Mukhopadhyay & Halder, 2004 *State Fauna Series ZSI, India*, 10: 423.

Aristobia approximatrix Lobl & Smetana, 2010 *Cat. Palaearctic Coleopt.-6, Apollo books*: 278.

Specimen examined: None

Distribution: Nepal, India, Cambodia, Myanmar, Subtropical China, Yunnan, Thailand, Vietnam, Malaysia

Biology: The adult beetle emerges in June to July. Females lay their eggs on the branches of the litchi tree; the grubs bore into the bark and feed beneath it. Later, grubs enter deep into the sapwood. The last larval instars were observed in the last week of April to the first week of May. The freshly emerged adults were found in the pupal chamber in the middle of June in Pasighat, Arunachal Pradesh. Only one generation is completed in a year.

Host Plants: *Dimocarpus longana*, *Lagerstroemia calyculata*, *Casurina* spp.

16. *Aristobia reticulator* (Voet, 1778) (Image 16)

Cerambyx testudo Voet, 1778 *La Haye Bakh.* 2: 29

Lamia reticulator Fabricius, 1781 *Bohn; Hamburgi et Kilonii* 1: 219

Celosterna reticulator, Thomson 1860 *Paris*: 85

Celosterna testudo Thomson, 1860 *Paris*: 85

Celosterna clathrator Thomson, 1865 *Mem. Soc. R. Sci. Liege* 19: 552

Aristobia reticulator Heyne & Taschenberg, 1908 *Leipzig Schreiber* 25/26: 241.

Aristobia testudo Breuning, 1943 *Novit. Entomol., third supp.* (89–106): 189.

Lamia reticulator Zimsen, 1964 *Copenhagen*, Munksgaard, 170.

Aristobia testudo Mukhopadhyay & Halder, 2004 *State Fauna Series ZSI, India*, 10: 423.

Aristobia reticulatrix Lobl and Smetana, 2010 *Cat. Palaearctic Coleopt.-6, Apollo books*: 278.

Aristobia reticulator Jiroux et al., 2014 *Les Cahiers*

Magellanes (NS) 14: 71, 84, 113.

Aristobia reticulator Agarwala & Bhattacharjee, 2015 *Coleopt. Bull.* 69(2): 205–212.

Specimen examined: CHF/2015/243, male, 23.vii.2010, litchi, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Kumawat; CHF/2015/244, female, 15.vi.2012, litchi, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Kumawat.

Distribution: Northeastern Himalayan range of India, Nepal, China, Vietnam.

Biology: One generation was observed each year with adults emerging in July. They removed bark rings around twigs, which then withered. Eggs were laid individually under the bark mainly in August, hatched generally in September and fed below the bark before hibernation (August–December). After hibernation the larvae bored into the wood, producing tunnels up to about 60cm long (Ho et al. 1990).

Host Plants: Litchi, Guava, Pigeonpea (Shylesha et al. 2000; Firake et al. 2012), *Microcos paniculata* (Agarwala & Bhattacharjee 2015) and *Dimocarpus longana*. The species is reported for the first time on litchi, *Litchi chinensis* in Pasighat, Arunachal Pradesh during the present study. The litchi plantations of the region including research farm of litchi in the College of Horticulture and Forestry, CAU, India suffered heavily.

Remarks: *A. approximator* characterized by the presence of a strong tuft of hairs at the apical half of the third antennal segment only in both sexes, whereas *A. reticulator* possesses tufts of hairs on the apices of the third, fourth, and most often on fifth antennal segments; these tufts are most prominent on the third segment, less so on the fourth segment, and feebly so, if present, on the fifth segment (Hua 2002; Jiroux et al. 2014; Agarwala & Bhattacharjee 2015).

17. *Batocera parryi* (Hope, 1846) (Image 17)

Lamia (Batocera) calanus Parry, 1845 *Ann. Mag. Nat. Hist.* 14: 86

Lamia parryi Hope, 1846 *Trans. Ent. Soc. Lond.* 1, 4: 77
Megacriodes guttata Vollenhoven, 1871 *Tijdschr. Ent.*: 110

Batocera fabricii Thomson, 1878 *Rev. Mag. Zool.* 3, 6: 54

Batocera albofasciata Heyne & Taschenberg, 1908 *Leipzig, Schreiber* 25/26: 242.

Batocera calanus var. *bimaculata* Schwarzer 1914 *Ent. Mitteil.* 3: 280

Batocera calanus var. *immaculata* Schwarzer, 1914 *Ent. Mitteil.* 3: 280

Semibatocera calana Kriesche, 1915 *Arch. f. Naturg.*

80A 11: 115

Batocera (Semibatocera) parryi narada Kriesche, 1928
Deutsche Ent. Z.: 45

Batocera parryi Perger & Vitali, 2012 *Les Cahiers Magellanes* NS 7: 11,15

Specimen examined: CHF/2015/250, female, 30.iv.2011, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Hammer.

Distribution: Borneo, Himalayan India, India, Java, Malayan Peninsula, Myanmar, Sumatra, Vietnam

Biology: Unknown

Host Plants: Unknown

18. *Batocera rubus rubus* (Linnaeus, 1758) (Image 18)

Cerambyx rubus Linnaeus, 1758 *Laur. Salvius Holmiae* 10, 1: 390

Cerambyx albofasciatus Degeer, 1775 *Stockholm, Impr. Pierre Hesselberg* 5: 106

Cerambyx stigma Voet, 1778 *La Haye Bakh.* 2: 37

Cerambyx albomaculatus Retzius, 1783 *Cruse*: 138

Lamia octomaculata Fabricius, 1793 *Hafniae, Proft* 1, 2: 290

Batocera rubus Dejean, 1835 *Crevot* 2: 4

Lamia (Lamia) rubus Audinet-Serville, 1835 *Ann. Soc. Ent. Fr.* 1, 4: 94

Batocera rubus Blanchard, 1845 *Paris Didot* 2: 175

Batocera sarawakensis Thomson, 1858 *Arch. Ent.* 1: 452

Batocera octomaculata Thomson, 1858 *Arch. Ent.* 1: 454

Lamia octomaculata = *albofasciatus* Degeer, 1775, Thomson 1858, *Arch. Ent.* 1: 454

Lamia octomaculata = *stigma* Voet, 1778, Thomson 1858 *Arch. Ent.* 1: 454

Batocera rubus Thomson, 1858 *Arch. Ent.* 1: 456

Batocera sabina Thomson, 1878 *Rev. Mag. Zool.* 3, 6: 52

Batocera albofasciata Stebbing, 1914 *Indian For. Ins.*: 366

Batocera rubus var. *bipunctata* Kriesche, 1915 *Arch. f. Naturg.* 80A 11: 134

Batocera rubus var. *punctatella* Kriesche, 1915 *Arch. f. Naturg.* 80A 11: 135

Batocera formosana Kriesche, 1915 *Arch. f. Naturg.* 80A 11: 136

Batocera siporensis Schwarzer, 1930 *Treubia* 12: 122

Batocera lombokensis Breuning, 1947 *Ark. Zool.* 39A 6: 16

Batocera dividopunctata Gilmour & Dibb, 1948 *Spolia Zeylanica* 25: 61

Cerambyx rubus Bousquet et al., 2009 *Zootaxa* 2321:

27

Batocera rubus Perger & Vitali, 2012 *Les Cahiers Magellanes* NS 7: 11,16

Specimens examined: CHF/2015/252, male, 15.vi.2010, light trap, East Siang (elevation 150m), Arunachal Pradesh, India, coll. Bhutia; CHF/2015/253, female, 06.iv.2011, forest of East Siang (elevation 150m), Arunachal Pradesh, India, coll. Bidhya.

Distribution: Borneo, Himalayan India, India, Japan, Korean Peninsula, Laos, Lesser Sunda, Malayan peninsula, Myanmar, Nepal, Pakistan, Subtropical China, China, Saudi Arabia, Sumatra, Taiwan, Thailand, Vietnam

Biology: The beetles emerged during April. The eggs are laid on the bark or on wounds in the months of April to May. The larvae on hatching, tunnel through the bark till they reach the bast and then bore deeper and eat out a winding gallery. The larvae spend about nine months and enter into pupal stage which lasts from six weeks to two months. The grubs pupate in January or February. There is only one generation per year (Stebbing 1914).

Host Plants: Indian rubber, *Ficus elastic*, *Careya arborea*, mango, fig and many other forest trees.

19. *Batocera horsfieldi* Hope, 1839 (Image 19)

Batocera horsfieldi Hope, 1839 *Proc. Linn. Soc. Lond.* 1: 42.

Batocera adelpha Thomson, 1859 *Baillere*: 77.

Batocera kuntzeni Kriesche, 1915 *Arch. f. Naturg.* 80A 11: 139.

Batocera horsfieldi m. *flavicans* Breuning, 1948 *Bull. Mus. Hist. Nat. Belg.* 24, 38: 15.

Specimen examined: CHF/2015/257, male, 05.vi.2011, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Donald.

Distribution: Bhutan, Himalayan India, India, Myanmar, Palaeartic China.

Biology: Adults emerge in early June and continue till July. The adults live for about four months. Adults rest on their food plants and feed on the bark of the young twigs. A single female lays 55–60 eggs in the bark. The grubs bore into the bark and reach into the sap wood. It pupates in a chamber under the bark. The life cycle completes in 22–32 months (Rahman & Khan 1942).

Host Plants: *Aliius nepaleusis*, *Juglans regia*, *Quercus incana*, *Walnut*, *Salix tetrasperma*, *Trema amboinensis* and *Parlowina tomentosa* (Beeson 1941).

Remarks: *B. horsfieldi* characterized by the presence of smoky or grayish pubescence on black elytra with multi striped whitish longitudinal pubescence bands are present on middle of each elytron. Mesepimeron covered with whitish pubescence leaving a narrow triangular mark

uncovered near the juncture of mesepisternum. Lateral lobes of apical tegmen of male genitalia are narrow, long and less jointed from their base to each other. *Batocera lineolata* is closely related species possesses reddish-brown or dark brown elytra covered with brownish pubescence with cloudy striped longitudinal whitish yellow pubescence band on each elytron. Mesepimeron covered with dense whitish pubescence without leaving a narrow triangular mark. Lateral lobes of apical tegmen are broad and their basal half jointed to each other. The median lobe of male *B. horsfieldi* is broad at base as compared to *B. lineolata* (Ponpinij 2011; Ying et al. 2012).

20. *Batocera rufomaculata rufomaculata* (De Geer, 1775) (Image 20)

Cerambyx rufomaculatus De Geer, 1775 *Stockholm, Impr. Pierre Hesselberg* 5: 107

Cerambyx rubiginosus Voet, 1778 *La Haye Bakh.* 2: 14

Cerambyx cruentatus Gmelin, 1790 *Lipsiae Beer* 13, 1, 4: 1863

Batocera rufomaculata m. *flavescens* Breuning 1950 *Longicornia* 1: 519

Batocera rufomaculata Breuning, 1957 *Inst. Rech. sc. Tananarive-Ts.* 4: 10

Cerambyx rubus = *rubiginosus* Voet, 1778, Thomson 1858 *Arch. Ent.* 1: 456

Cerambyx rubus = *rufomaculatus* Degeer, 1775, Thomson 1858 *Arch. Ent.* 1: 456

Cerambyx rubus = *cruentatus* Gmelin, 1790, Thomson 1858 *Arch. Ent.* 1: 456

Batocera diana Nonfried, 1892 *Deutsche Ent. Z.* 2: 276

Batocera (Batocera) rufomaculata Duffy, 1960 *Brist. Mus. (Nat. Hist.):* 187

Batocera rufomaculata Rigout, 1981 *Sciences Nat.*: 86

Batocera rufomaculata Chalumeau & Touroult, 2005 *Pensoft Publ.:* 141

Batocera rufomaculata Sakenin et al., 2011 *Calodema* 143: 7

Specimens examined: CHF/2015/259, male, 15.vi.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/260, female, 06.vi.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Pinku.

Distribution: Comoros, East Turkey, Egypt, Himalayan India, India, Iran, Israel, Lebanon, Madagascar, Mascarene, Nepal, Pakistan, Palaeartic China, Oman, Yemen, Syria.

Biology: The female chews a small depression in the bark and inserts an egg under it. The neonate larvae initially feed under the bark then migrate into the heartwood. The larval and pupal stages last about 280 and 24–29 days, respectively (Husain & Khan 1940; Sudhi et al.

2008; Kulkarni 2010).

Host Plants: Mango, fig, durian, mulberry, jackfruit, eucalyptus, *Bombax ceiba*, *Ceiba pentandra*, and *Syzygium cumini*. *Anacardium occidentale*, *Artocarpus heterophyllus*, *Careya arborea*, *Ceiba pentandra*, *Hevea brasiliensis*, *Syzygium cumini* (Mathew 1982). It is a polyphagous pest and about 50 host plants are known (CABI 2007).

21. *Batocera numitor* Newman, 1842 (Image 21)

Batocera numitor Newman, 1842 *The Entomologist* 1, 17: 275

Batocera ajax Thomson, 1858 *Arch. Ent.* 1: 455

Batocera ajax = *ajax* Dejean, 1837, Thomson, 1858 *Arch. Ent.* 1: 455

Batocera ferruginea Thomson, 1858 *Arch. Ent.* 1: 456

Batocera numitor titana Thomson 1859 *Baillere:* 82

Batocera javanica Thomson, 1859 *Baillere:* 83

Batocera loki Kriesche, 1915 *Arch. f. Naturg.* 80A 11: 143

Batocera numitor var. *sumatrensis* Aurivillius, 1922 *Coleopt. Cat.* 73: 126

Batocera numitor var. *palawanicola* Kriesche, 1928 *Deutsche Ent. Z.:* 47

Batocera rufopunctata Breuning, 1956 *Bull. Inst. Roy. Sc. Nat. Belg.* 32, 25: 1

Batocera numitor Rigout 1982 *Sci. Nat.:* 32

Specimens examined: CHF/2015/262, female, 23.v.2010, forest logs, Pasighat (elevation 160m), India, coll. Sanjeev; CHF/2015/263, female, 19.vii.2010, light trap, Pasighat (elevation 180m), India, coll. Mantu; CHF/2015/264, male, 09.iv.2010, light trap, West Siang (elevation 210m), Arunachal Pradesh, India, coll. Mantu.

Distribution: Himalayan India, India, Java, Nepal, Palaeartic China, Subtropical China, Sulawesi, Sumatra, Thailand, Vietnam

Biology: The beetle makes its appearance from July to August. The eggs are laid in wounds or on the bark having no strength to resist the tunneling. The grub bores into the stem and become full grown in March than it pupates for three months. The life cycle is annual. The beetle was studied by Stebbing (1914) under the name of *Batocera titana* (Beeson 1941).

Host Plants: *Anthocephalus cadamba*, *Hodgsonia heteroclita*, *Mangifera indica*, *Ochroma lagopus*, *Sterculia villosa* (Beeson 1941); *Alstonia* spp., *Ceiba pentandra* (Bhasin et al. 1958)

22. *Apriona germarii germarii* (Hope, 1831) (Image 22)

Apriona germarii Hope, 1831 *Gray's Zool. Misc.* 1: 28.

Apriona germarii Chevrolat, 1852 *Rev. Mag. Zool.* (2) 4: 415.

Apriona germarii Thomson, 1864 *Mem. Soc. R. Sci. Liege* 19: 74.

Apriona deyrollei Kaup, 1866 *Einige Ceramb.*: 7.

Apriona cribrata Thomson, 1878 *Rev. Mag. Zool.* 3, 6: 57.

Apriona germari Stebbing, 1914 *Indian For. Ins.*: 371.

Apriona germari Huang et al., 2009 *Les Cahiers Magellanes* 94: 8 (4).

Apriona germari Jiroux, 2011 *Les Cahiers Magellanes* NS 5: 59, 83.

Lamia germarii = *cribrata* Thomson, 1878, Jiroux 2011 *Les Cahiers Magellanes* NS 5: 59.

Lamia germarii = *deyrollei* Kaup, 1866, Jiroux 2011, *Les Cahiers Magellanes* NS 5: 59.

Apriona germari Hussain & Buhroo, 2012 *Nat. Sci.* 10, 1: 24.

Apriona germari Hussain 2012 *J. Amer. Sci.* 8, 8: 961.

Specimens examined: CHF/2015/266, male, 12.iv.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/267, female, 21.v.2009, light trap, Basar (elevation 575m), Arunachal Pradesh, India, coll. T. Riba.

Distribution: Bhutan, Himalayan India, India, Nepal

Biology: Both pupae and beetles are found in the middle of July. Adults lay eggs on the bark of the stems. The young grubs start eating on the bark and then enter into the heartwood and tunnel up and down (Stebbing 1914) In Andhra Pradesh, *A. germari* appeared in July–August, feeding on the bark of the top stem portion of 2–3 cm diameter of the crown (Kulkarni 2010).

Host Plants: Mulberry, *Morus indica*, eucalyptus.

23. *Coptops aedificator* (Fabricius, 1793) (Image 23)

Lamia ambulator Fabricius, 1775 *Korte, Flensburgi and Lipsiae* 30: 171.

Cerambyx fuscus Olivier, 1792 *Paris Panckoucke Imp. Lib.* 7: 462.

Cerambyx villica Olivier, 1792 *Paris Panckoucke Imp. Lib.* 7: 468.

Lamia aedificator Fabricius, 1793 *Hafniae, Proft* 1 (2): 275.

Cerambyx fuscus Olivier, 1795 *Coleopteres, Imp. de Lanneau Paris* 4: 83.

Lachnia (Coptops) parallela Audinet-Serville, 1835 *Ann. Soc. Ent. Fr.* (1) 4: 64.

Lamia aedificator = *calliginosus* Dejean, 1837, Thomson 1858 *Arch. Ent.* 2: 177

Coptops aedificator Thomson, 1858 *Arch. Ent.* 2: 177.

Lamia aedificator = *bidens* Fabricius, Thomson 1858 *Arch. Ent.* 2: 177

Coptops quadristigma Fahraeus, 1872 *Oefvers. Vet. Ak.*

Forh. 29 (2): 30.

Phymasterna inhambanensis Bertoloni, 1876 n. Syn. by Vitali 2011 *Entomol. Africana* 16 (1): 2–12.

Coptops fuscus Quedenfeldt, 1883 *Ber. Ent. Zeitschrift* 27 (1): 138.

Coptops aedificator Gahan, 1896 *Ann. Mag. Nat. Hist.* 6 (16) 108: 451.

Coptops aedificator Kolbe, 1910 *Mitt. dem Zool. Mus. Berlin* 5 (1): 38.

Coptops aedificator Breuning, 1939 *Novit. Entomol. third supp.* (50–66): 508.

Lamia aedificator Zimsen, 1964 *Copenhagen, Munksgaard*: 169.

Coptops aedificator Delahaye, 2009 *Les Cahiers Magellanes* 96: 16.

Coptops aedificator Vitali, 2011 *Entomol. Africana* 16, 1: 8.

Specimens examined: CHF/2015/269, female, 26.iv.2010, Pomegranate, East siang (elevation 170m), Arunachal Pradesh, India, coll. Henuka; CHF/2015/270, female, 28.iii.2010, mango, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Subhash; CHF/2015/271, male, 08.iv.2009, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu.

Distribution: Cameroon, Central Africa R., Djibouti, Ethiopia, Gabon, Ivory Coast, Kenya, Malawi, Namibia, Nigeria, R.D. Congo, R.P. Congo, Senegambia, Senegal, Saudi Arabia, Tanzania, Uganda, Zambia and India including northeastern region.

Biology: Larvae of this species feed on the inner bark, and the damage they do to the sapwood is only superficial, for even the pupal cells are constructed almost entirely in the bark (Beeson & Bhatia 1939; Fraser 1949). The emergence hole is circular, but usually somewhat ragged. Emergence occurs more or less throughout the year, although the main period in India is in June. The life cycle normally lasts a year.

Host Plants: More than 50 subtropical forest trees (Beeson & Bhatia 1939). Fraser (1949) records this species from *Afzelia*. Duffy (1953a) reported from *Artocarpus* sp. Dawah et al. (2013) observed on mango as host in Saudi Arabia.

24. *Acalolepta cervina* (Hope, 1831) (Image 24)

Monochamus cervinus Hope, 1831 *Gray's Zool. Misc.* 1: 27.

Monochamus fulvicornis Pascoe, 1875 *Ann. Mag. Nat. Hist.* 4, 15: 64.

Haplohammus cervinus Gahan, 1894 *Ann. Museo Civico di Storia Nat.* (2) 14: 36.

Dihammus cervinus Gressitt, 1937 *Lingnan Sci. J.* 16



Images 17–32. 17 - *Batocera parryi*; 18 - *Batocera rubus rubu*; 19 - *Batocera horsfieldi*; 20 - *Batocera rufomaculata rufomaculata*; 21 - *Batocera numitor*; 22 - *Apriona germarii germarii*; 23 - *Coptops aedificator*; 24 - *Acalolepta cervina*; 25 - *Epepeotes uncinatus*; 26 - *Glenea (Stirolene) spilota*; 27 - *Imantocera penicillata*; 28 - *Macrochenus guerinii*; 29 - *Nupserha nigriceps*; 30 - *Nupserha bicolor*; 31 - *Obereopsis obscura obscura*; 32 - *Olenecamptus bilobus bilobus*. © M.M. Kumawat

(4): 596.

Cypriola cervina Breuning, 1949 *Arkiv Zool. Stockholm* 42 (A) 15: 1.

Dihammus cervinus Gressitt, 1951 *Longicornia* 2: 399.

Acalolepta cervina Hayashi, 1981 *Bull. of the Osaka Jonan Women's Jr. College* 14: 14.

Acalolepta cervinus Wang & Chiang, 1988, *Entomotaxonomia* 10 (1–2): 144.

Acalolepta cervina Weigel, 2006 *Ver. der Fre. und For.*

des Naturk. Erfurt e. V.: 502.

Acalolepta cervina Hua et al., 2009 *Sun Yat-sen Univ. Press*: 330

Specimens examined: CHF/2015/273, male, 15.vi.2010, light trap, East Siang (elevation 180m), Arunachal Pradesh, India, coll. Prakash; CHF/2015/274, female, 04.v.2009, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Roamer.

Distribution: Myanmar, Laos, China, India including

North Eastern region, Korea, Japan, Vietnam, Laos, Myanmar, Nepal.

Biology: The life cycle is annual with a long larval period (Beeson 1941). Adults feed on the bark of the twigs. The female lays eggs on the bark by making a slit or incision with the help of mandibles. The newly hatched larva makes tunnels in the cambium, later penetrating deeper in the wood resulting in the abnormal callus like growth or bulging base formed known as canker around the wounded portion of the trunk.

Host Plants: *Clerodendron* sp., *Tectona grandis*, *Gmelina arborea*, *Adina cardifolia*, *Anthocephalus chinensis*, *Anthocephalus cadamba*, *Camellia thea*, *Cterodendron infortunatum*, *Buddleia madagascariensis*, *Daubanga sonneratioides* and *Sarcocephalus cordatus*.

25. *Epepeotes uncinatus* Gahan, 1888 (Image 25)

Epepeotes uncinatus Gahan, 1888 *Ann. Mag. Nat. Hist.* 6, 1: 271.

Epepeotes salvazai Pic, 1925 *Mel. exot. Ent.* 43: 18.

Pseudopsacothea lineata Pic, 1944 *Opusc. mart.* 13: 14.

Epepeotes uncinatus lineatopunctatus Breuning, 1960 *Bull. Soc. Ent. France* 65 (1–2): 29.

Epepeotes uncinatus Breuning, 1961 *Bull. Inst. roy. Sc.nat. Belg.* 37(20): 2.

Epepeotes uncinatus Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e. V.*: 502.

Specimen examined: CHF/2015/275, female, 17.v.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu.

Distribution: Bhutan, Himalayan India, India, Myanmar, Nepal, Palaeartic China, Laos, Vietnam

Biology: Emergence occurs in April–June, mainly May. The life-cycle is annual. The prepupal tunnel and pupal chamber are carried deep into the wood. The beetle escapes by an imaginal tunnel from the base of the pupal chamber (Beeson 1941; Duffy 1968).

Host Plants: *Crateva unilocularis*, *Ficus carica*, *F. elastica*, *F. religiosa*, *Morris indica*, *M. laevigata*, *Terminalia myriocarpa* (Beeson 1941).

26. *Glenea (Stiroglenea) spilota* Thomson, 1860 (Image 26)

Glenea spilota Thomson, 1860 *Paris*: 58.

Glenea spilota Thomson, 1878 *E. Deyrolle*: 14.

Glenea spilota Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e. V.*: 506.

Specimen examined: CHF/2015/277, male, 01.iv.2011, forest weeds, Pasighat (elevation 160m), Arunachal Pradesh, India, coll. Mantu.

Distribution: India, Himalayan India including Arunachal Pradesh, Nepal

Biology: The life-cycle is annual with the beetle emergence in April–July (April 16%, May 68%, June 15%) (Beeson 1941). It lays eggs on the bark, on hatching the grub bores into the bast and feeds on sapwood, eating out ramifying galleries. It is not found on freshly felled trees (Stebbing 1914). Lefroy (1909) confirmed that the larvae are found abundantly in the decaying trunk.

Host Plants: *Bombax malabaricum* and *Sterculia villosa*, the other species of *Glenea* attack on *Zanthoxylum rhetsa* and *Bombax ceiba* (Mathew 1982).

27. *Imantocera penicillata* (Hope, 1831) (Image 27)

Lamia penicillata Hope, 1831 *Zool. Misc.* 1: 17.

Cerambyx plumosus = penicillata Hope, 1831, Thomson, 1864 *Mem. Soc. R. Sci. Liege.* 19: 82

Imantocera penicillata Thomson 1857 *Arch. Ent.* 1: 188.

Imantocera (=Himantocera) penicillata Pascoe, 1866 *Trans. Entomol. Soc. London* (3) 3: 260, 288.

Himantocera penicillata Gahan, 1894 *Ann. Mus. Civ. Genova* 34: 47.

Imantocera penicillata Dillon & Dillon, 1950 *Philipp. J. Sci.* 79 1: 14 (13).

Imantocera penicillata Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e. V.*: 503.

Specimens examined: CHF/2015/279, male, 22.vi.2010, citrus, Rengging (elevation 300m), Arunachal Pradesh, India, coll. Riba; CHF/2015/280, female, 22.vi.2010, citrus, Rengging (elevation 300m), Arunachal Pradesh, India, coll. Riba.

Distribution: Bangladesh, Bhutan, Himalayan India, India, Laos, Malayan Peninsula, Myanmar, Nepal, Palaeartic China, Subtropical China, Thailand, Vietnam

Biology: Unknown

Host Plants: *Ficus religiosa* (Beeson 1941) and citrus.

28. *Macrochenus guerinii* (White, 1858) (Image 28)

Pelargoderus guerinii White, 1858 *Ann. Mag. Nat. Hist.* 3, 2: 274.

Macrochenus guerini Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press, Guangzhou* 2: 213.

Macrochenus guerinii Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e. V.*: 502.

Specimens examined: CHF/2015/281, female, 20.iv.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/282, male, 05.v.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu.

Distribution: Subtropical China, North and North

Eastern Himalayan India, Nepal, Myanmar, Laos, Thailand, Vietnam.

Biology: Emergence occurs in April–May. The pupal chamber is vacated by the beetle through an imaginal tunnel from its lower end (Beeson 1941).

Host Plants: *Bombax malabaricitm*, *Ficus elastica*, *F. religiosa*, *Lagerstroemia flos-reginae* (*Lagerstroemia speciosa*), *Stereospermum chelonoides* (Beeson 1941).

29. *Nupserha nigriceps* Gahan, 1894 (Image 29)

Nupserha nigriceps Gahan, 1894 *Ann. Mus. Civ. Genova* 34: 90.

Nupserha nigriceps Breuning, 1960 *Bull. Inst. roy. Sc.nat. Belg.* 36 (10): 27.

Nupserha nigriceps Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e. V.*: 506.

Specimen examined: CHF/2015/284, male, 05.iv.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu.

Distribution: India, Nepal, Subtropical China, Yunnan, Sumatra

Biology: Unknown

Host Plants: Unknown

30. *Nupserha bicolor* Thomson, 1857 (Image 30)

Stibara bicolor Thomson, 1857 *Arch. Ent.* 1: 147

Nupserha bicolor Thomson, 1860 *Paris*: 61

Stibara bicolor m. *nigrata* Breuning, 1950

Nupserha bicolor m. *postbrunnea* Dutt, 1952 *Nature* 170: 287–288.

Stibara bicolor m. *parteatriventris* Breuning, 1960

Stibara bicolor m. *subnitida* Breuning, 1960

Stibara bicolor m. *thomsoni* Breuning, 1960

Specimens examined: CHF/2015/286, male, 22.vi.2010, forest weeds, Pasighat (elevation 180m), Arunachal Pradesh, India, coll. Riba.

Distribution: North East India, Himalayan India, Taiwan
Biology: The adult beetle girdles the stem at two levels before it starts oviposition. This causes withering, drooping and death of the portion above the lower girdle to a length varying from 5–50 cm thus resulting in loss of fibre yield. Girdling causes suspension of unidirectional vertical growth, and this is followed by the appearance of a number of side branches, which are of little value from the point of view of fibre (Dutt 1956; Dutt 1961).

Host Plants: Jute, *Corchorus olitorius* and *C. capsularis* (Dutt 1952; ICJC 1958).

31. *Obereopsis obscura obscura* Breuning, 1957 (Image 31)

Obereopsis obscura obscura Breuning, 1957 *Indian*

Forest Rec. (New Series) Ent. 9 (3): 75.

Specimens examined: CHF/2015/288, male, 11.v.2012, unidentified weed complex from forest floor, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/289, female, 18.vi.2012, weeds, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu.

Distribution: Nilgiri Hills, Tamil Nadu, The species first time reported in Arunachal Pradesh in the year 2012 during the course of the present study.

Biology: Unknown

Host Plants: Unknown

32. *Olenecamptus bilobus bilobus* (Fabricius, 1801) (Image 32)

Saperda biloba Fabricius, 1801 *Bibl. Acad. Nov.* 2: 324.

Olenecamptus serratus Chevrolat, 1835 *Mag. Zool.* 5: 134.

Gnoma biloba Montrouzier, 1855 *Ann. Soc. agric. Lyon* 2, 7: 63.

Olenecamptus bilobus Pascoe, 1866 *Proc. Sci. M. Zool. Soc. London*: 253

Olenecamptus madecassus Fairmaire, 1901 *Rev. Entomol. Caen* 20: 226.

Olenecamptus borneensis Pic, 1916 *Mel. exot. Ent.* 17: 6.

Olenecamptus rouyeri Pic, 1916 *Mel. exot. Ent.* 17: 6.

Olenecamptus bilobus m. *madecassa* Breuning, 1940 *Novit. Entomol.* 11, 66–71: 555.

Olenecamptus bilobus m. *trimaculata* Breuning, 1940 *Novit. Entomol.* 11, 66–71: 555.

Olenecamptus bilobus m. *borneensis* Breuning, 1940 *Novit. Entomol.* 11, 66–71: 555.

Olenecamptus bilobus m. *rouyeri* Breuning, 1940 *Novit. Entomol.* 11, 66–71: 555.

Olenecamptus bilobus m. *dahli* Breuning, 1940 *Novit. Entomol.* 11, 66–71: 556.

Olenecamptus bilobus m. *confluens* Breuning, 1940 *Novit. Entomol.* 11, 66–71: 556.

Olenecamptus serratus Breuning, 1940 *Novit. Entomol.* 11, 66–71: 556.

Olenecamptus bilobus bilobus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 224.

Olenecamptus bilobus strucki Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 225.

Olenecamptus bilobus ternatus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 227.

Olenecamptus bilobus mindanaensis Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 228.

Olenecamptus bilobus luzonensis Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 228.

Olenecamptus bilobus lacteoguttatus Dillon & Dillon,

1948 *Trans. Amer. Ent. Soc.* 73: 229.

Olenecamptus bilobus nipponensis Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 229.

Olenecamptus bilobus laosus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 230.

Olenecamptus bilobus tonkinus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 230.

Olenecamptus bilobus borneensis Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 231.

Olenecamptus bilobus artemis Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 232.

Olenecamptus bilobus niasus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 232.

Olenecamptus bilobus pseudoserratus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 233.

Olenecamptus bilobus gressitti Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 234.

Olenecamptus bilobus trimaculatus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 235.

Olenecamptus madecassus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 235.

Olenecamptus confluens Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 236.

Olenecamptus bilobus lacteoguttatus Breuning, 1957 *Inst. Rech. sc. Tananarive-Ts.* 4: 21.

Olenecamptus bilobus lacteoguttatus var. *madecassus* Breuning, 1957 *Inst. Rech. sc. Tana.-Ts.* 4: 23.

Olenecamptus bilobus lacteoguttatus var. *trimaculatus* Breuning, 1957 *Inst. Rech. sc. Tana.-Ts.* 4: 23.

Olenecamptus bilobus m. *reductemaculatus* Breuning, 1969 *Bull. Mus. Nat. Hist. Nat.* 2, 41, 3: 665.

Specimens examined: CHF/2015/291, male, 28.x.2008, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Madhu; CHF/2015/292, female, 20.x.2008, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Madhu.

Distribution: Andaman Island, India including north and northeastern Himalayan range, Australia, Bismarck, Borneo, Comoros, Japan, Java, Laos, Lesser Sunda, Madagascar, Malayan Peninsula, Micronesia, Moluccas, Ambon, Bacan, Sula, Myanmar, Nepal, New Guinea Island, Pakistan, Palaearctic China, Seychelles, Sri Lanka, Subtropical China, Sulawesi, Sumatra, Taiwan, Thailand, Timor, Vanuatu, Vietnam.

Biology: In northern India the life-cycle is annual with an extended emergence-period from May to November (May 20%, June 36%, July 21%, August 9%); a portion of the brood may be prolonged to the second year but if the wood dries out considerably these belated individuals do not survive. The grubs generally bore into the sapwood in the early instars and subsequently tunnel into the

heartwood (Beeson 1941). According to Stebbing (1914), it appears to affect old decaying trees and not reported in young, green and healthy trees.

Host Plants: *Artocarpus hirsutus*, *A. blumei*, *A. incises* and *Lagerstroemia microcarpa*, (Mathew 1982), *Ficus rumphii*, *F. glomerata*, *F. roxburghii*, *Morus indica*, and Jackfruit. Lefroy (1909) mentioned that this beetle is common in pakur, gular and other *Ficus* sp. in the plains.

33. *Olenecamptus indianus* (Thomson, 1857) (Image 33)

Authades indianus Thomson, 1857 *Arch. Ent.* 1: 192.

Saperda biloba = indianus Thomson, 1860 *Paris*: 108.

Olenecamptus albolineatus Pic, 1916 *Mel. exot. Ent.* 17 : 5.

Olenecamptus salweeni Heller, 1926 *Tijdschr. Ent.* 69: 39.

Olenecamptus indianus Breuning, 1940 *Novit. Entomol.* 11, 66–71: 544.

Authades indianus = multinotatus Pic, 1916, Breuning 1940 *Novit. Entomol.* 11, 66–71: 544.

Authades indianus = albolineatus Pic, 1916, Breuning 1940 *Novit. Entomol.* 11, 66–71: 544.

Olenecamptus indianus ab. *salweeni* Breuning, 1940 *Novit. entomol.* 11, 66–71: 545.

Olenecamptus bilobus indianus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 233.

Olenecamptus multinotatus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 246.

Olenecamptus albolineatus Dillon & Dillon, 1948 *Trans. Amer. Ent. Soc.* 73: 247.

Specimens examined: CHF/2015/294, female, 11.xi.2009, unidentified weed complex from forest floor, East Siang (elevation 180m), Arunachal Pradesh, India, coll. Dolly; CHF/2015/295, male, 21.xi.2008, light trap, Upper Siang (elevation 210m), Arunachal Pradesh, India, coll. Kumawat.

Distribution: India including eastern Himalaya, Malayan Peninsula, Myanmar, Nepal, Seychelles, subtropical China, Taiwan, Thailand, Vietnam

Biology: The life-cycle of this sapwood borer is annual in north India with emergence in May– August (50% in June, 44% in July) (Beeson 1941; Duffy 1968).

Host Plants: *Anogeissus acuminata*, *A. latifolia*, *Lagerstroemia calyculata*, *Phyllanthus emblica*, *Randia dumetorum*, *Terminalia belerica*, *T. tomentosa* (Beeson 1941).

34. *Pterolophia (Hylobrotus) tuberculatrix* (Fabricius, 1781) (Image 34)

Lamia tuberculator Fabricius, 1781 *Bohn Hamburgi et Kilonii* 1 : 224.

Praonetha obsoleta Fairmaire, 1871 *Ann. Soc. ent. Fr.* 5, 1: 67.

Pterolophia (Hylobrotus) tuberculatrix Breuning, 1957 *Inst. Rech. sc. Tana.-Ts.* 4 : 297.

Pterolophia (Hylobrotus) tuberculatrix var. *obsoleta* Breuning, 1957 *Inst. Rech. sc. Tana.-Ts.* 4: 299

Pterolophia (Hylobrotus) tuberculatrix Breuning, 1961 *Bull. I.F.A.N.* 23, A, 4: 1093.

Pterolophia (Hylobrotus) tuberculatrix var. *obsoleta* Breuning, 1961 *Bull. I.F.A.N.* 23, A, 4: 1094.

Pterolophia (Hylobrotus) tuberculatrix Sudre & Teocchi, 2000 *Bull. mens. Soc. Linn. Lyon.* 69, 10: 226.

Pterolophia (Hylobrotus) tuberculatrix Teocchi et al., 2013 *Les Cahiers Magellanes* NS 11: 15.

Specimen examined: CHF/2015/297, male, 11.x.2008, forest ground, Rengging (elevation 300m), Arunachal Pradesh, India, coll. Madhu.

Distribution: India, first time reported in Arunachal Pradesh during present study, Ivory Coast, Kenya, Madagascar, Maldives Island, Mascarene Island, South Africa, Sri Lanka, Tanzania, Maldives, Comoros.

Biology: Unknown for *P. tuberculatrix*. Moreover, *Pterolophia* appears to be a minor pest from the agricultural point of view and its outbreaks can be easily controlled. In more recent years, there have been a few studies on the biology and host plants of *Pterolophia* species found elsewhere (Desmier et al. (1990, 1991), Zhan et al. (1996), Yamazaki & Takakjura (2003)).

Host Plants: *Tectona grandis*, other species of *Pterolophia* attacking *Coconut*, *Cocos nucifera*, *Populus* sp., *Araucaria cunninghamii*, *Coffea arabica*, *Theobroma cacao*, *Citrus aurantiifolia*, *Saccharum officinarum*, *Camposperma brevipetiolata* (Hawkeswood 2011).

35. *Pterolophia occidentalis* Schwarzer, 1931 (Image 35)

Pterolophia occidentalis Schwarzer, 1931 *Senckenbergiana*, 13: 72.

Pterolophia (Pterolophia) occidentalis Breuning, 1972 *Ann. Hist. Nat. Mus. Nat. Hung.* 64: 230.

Specimen examined: CHF/2015/299, male, 23.iv.2013, unidentified weeds, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Kumawat.

Distribution: Ghana, India, Himalayan India including Arunachal Pradesh

Biology: Adult emergence occurs in nearly every month of the year but mainly in June–July (June 21%, July 56%, August 11%). The larva tunnels in thin barked stems and grooves the sapwood. The pupal chamber is also constructed on the sapwood surface. The life-cycle is annual but may be prolonged to the second or third year in dry stems and climbers (Beeson 1941; Duffy 1968).

Host Plants: *Millettia auriculata*, *Acacia* sp., *Acrocarpus fraxinifolius*, *A. hirsuta*, *Bauhinia vahlii*, *Cudrania javanensis*, *Dalbergia paniculata*, *Engelhardtia colebrookiana*, *Ficus religiosa*, *Lagerstroemia parviflora*, *Lannea grandis*, *Mallotus philippinensis*, *Mangifera indica*, *Myristica attenuata*, *Pterocarpus marsupium*, *Spatholobus roxburghii*, *Terminalia paniculata*, *Vitis araneosa*, *Wistaria* sp.

36. *Thylactus simulans* Gahan, 1890 (Image 36)

Thylactus simulans Gahan, 1890 *Ann. Mag. Nat. Hist.* 6, 5: 58.

Thylactus simulans Rondon & Breuning, 1970 *Pacific Insects Mono.* 24: 345.

Thylactus simulans Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press*, Guangzhou 2: 235.

Specimens examined: CHF/2015/302, male, 19.iii.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Bilin Maying; CHF/2015/303, female, 27.iv.2011, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Chanu.

Distribution: India, Arunachal Pradesh, Myanmar, Thailand, Vietnam, China

Biology: Not studied, although some preliminary study was done by Zhang & Zuo (1986) (original not seen).

Host Plants: *Catalpa* sp., *Exbucklandia populnea* (Beeson 1941) and *Paulownia*.

37. *Pseudonemophas versteegii* (Ritsema, 1881) (Image 37)

Monohammus versteegii Ritsema, 1881 *Not. Leyd. Mus.* 3: 155.

Monochamus albescens Pic, 1920 *Mel. exot. Ent.* 32: 2.

Monochamus glabronotatus Pic, 1934 *Mat. Etud. Longic.* 11, 2: 34.

Monochamus albescens var. *subuniformis* Pic, 1934 *Mat. Etud. Longic.* 11, 2: 34.

Monohammus versteegii = *subuniformis* Pic, 1934, Breuning 1944, *Novit. Entomol.* 13, 107–137: 290

Monoplophora (Anoplophora) versteegi Breuning, 1944 *Novit. Entomol.* 13, 107–137: 290.

Anoplophora (Anoplophora) versteegi m. *albescens* Breuning, 1944 *Novit. Entomol.* 13, 107–137: 290.

Anoplophora (Anoplophora) glabronotata Breuning, 1944 *Novit. Entomol.* 13, 107–137: 291.

Anoplophora (Anoplophora) versteegi siamensis Breuning, 1982 *Ann. Soc. Ent. Fr.* (n.s.) 18, 1: 17.

Pseudonemophas versteegii Lingafelter & Hoebeke, 2002 *Entomol. Soc. Wash.*: 143 (102).

Monochamus glabronotatus Lingafelter & Hoebeke, 2002 *Entomol. Soc. Wash.*: 212.

Monochamus albescens subuniformis Lingafelter & Hoebeke, 2002 *Entomol. Soc. Wash.*: 218.

Anoplophora versteegi siamensis Lingafelter & Hoebeke, 2002 *Entomol. Soc. Wash.*: 219.

Monochamus albescens Lingafelter & Hoebeke, 2002 *Entomol. Soc. Wash.*: 220.

Pseudonemophas versteegii Ohbayashi et al., 2009 *Spec. Bull. Jpn. Soc. Col.* 7: 316, 317, 323.

Specimens examined: CHF/2015/306, male, 15.v.2008, citrus, Rengging (elevation 300m), Arunachal Pradesh, India, coll. Mamocha; CHF/2015/307, female, 21.vi.2009, citrus, Rengging (elevation 300m), Arunachal Pradesh, India, coll. Mamocha.

Distribution: Northeastern region of India, Laos, Myanmar, Nepal, subtropical China, Sumatra Island, Thailand, Vietnam.

Biology: The female beetles lay their eggs beneath the bark of the tree trunk by making a cut with their mandibles. The eggs are not laid on the trunk above one meter height from ground level. The frequency of egg laying per day per female varies from 0 to 11 eggs with the mean egg deposition frequency of 2.90 eggs per female. Initially the larvae feed under the bark and then enter the centre of the trunk. Pupation takes place below the bark. The egg, larval and pupal periods last for 4 to 5, 240 to 310 and 23 to 39 days, respectively. The adults emerge from April to May (Saikia et al. 2011; Singh & Singh 2012).

Host Plants: *Citrus reticulata*, *C. sinensis*, *C. limon*, *C. jambhiri*, *C. grandis*, *C. medico*, *C. aurantifolia*, trifoliate orange, pumelo and many other wild species of *Citrus* group.

38. *Sarothroceria lowii* White, 1846 (Image 38)

Sarothroceria lowii White, 1846 *Ann. Mag. Nat. Hist.* 18: 47.

Sarothroceria lowei Thomson, 1861 *Paris*: 361.

Sarothroceria lowi Aurivillius, 1922 *Coleopt. Cat.* 73: 78.

Sarothroceria lowii Ghate et al., 2012 *J. Threat. Taxa* 4(7): 2709.

Specimen examined: CHF/2015/311, female, 25.vi.2013, Forest ground, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Kumawat.

Distribution: India (Manipur, Arunachal Pradesh), Borneo, Myanmar, Indonesia, Laos, Sumatra, Thailand, West Malaysia and Vietnam.

Biology: The beetles emerge in May–July (Beeson 1941) and females deposit eggs singly into a slit made in the bark of the trunk and felled logs. Larvae emerge and initially feed just under the bark, later boring into the stem. Pupation occurs towards the end of April.

Host plants: *Eucalyptus* sp., *Engelhardtia spicata*,

Stereospermum suaveolens.

Subfamily Cerambycinae

39. *Aeolesthes sarta* (Solsky, 1871) (Image 39)

Pachydissus sartus Solsky, 1871 *Hor. Soc. Ent. Ross* 8:150.

Aeolesthes sarta Gahan, 1906 *Fauna Brit. India Col.* 1: 129.

Aeolesthes sarta Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press*, Guangzhou 2: 191.

Specimens examined: CHF/2015/314, male, 23.iv.2009, forest logs, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Dorjee; CHF/2015/315, male, 23.v.2012, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Hokivi; CHF/2015/316, female, 11.iv.2011, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Chhetri; CHF/2015/317, female, 09.v.2013, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Sapna.

Distribution: India (Western to eastern Himalayan range), Pakistan (north), Afghanistan, Baluchistan, Iran, Turkmenistan, Turkistan, Uzbekistan, Tajikistan, Kyrgyzstan (south), Quetta, Tibet in mountainous areas up to an altitude of 2000m. In Arunachal Pradesh, it was reported by Sengupta & Sengupta 1981.

Biology: *A. sarta* requires two years to complete a generation (Ahmad et al. 1977; Vorontsov 1995). Adults usually leave their pupal cells in April or the beginning of May. Females lay eggs in slit-like niches in the bark of the trunk and the larger branches. A single female may lay a total of 240–270 eggs. The larvae start feeding and construct tunnels deep into the wood. At the end of July, grubs pupate in cells and about two weeks later adults appear. Adults stay in the pupation cells over winter and emerge the following spring.

Host Plants: *Ulmus minor*, *U. pumila*, *U. carpiniifolia*, *Populus diversifolia*, *P. euphratica*, *P. talassica*, *P. alba*, *P. euroamericana*, *Salix acmophylla*, *S. turanica*, *S. aongarica*, *S. tetrasperma*, *Platanus orientalis* and *P. acerifolia*, *Malus pumila* and *Juglans regia* are the preferred hosts. It has also been known to attack other species of *Ulmus*, *Populus*, *Salix*, *Platanus*, *Malus*, *Prunus*, *Pyrus*, *Juglans*, *Quercus*, *Betula*, *Fraxinus*, *Acer*, *Morus*, *Geditsia*, *Robinia*, *Elaeagnus* and other broadleaf trees (Thakur 2000; Afsaneh et al. 2011).

40. *Hoplocerambyx spinicornis* (Newman, 1842) (Image 40)

Hammacherus spinicornis Newman, 1842 *Entomologist* 1 (15): 243–248.

Cerambyx? morosus Pascoe, 1857 *Trans. Ent. Soc.*



Images 33–49. 33 - *Olenecamptus indianus*; 34 - *Pterolophia (Hylobrotus) tuberculatrix*; 35 - *Pterolophia occidentalis*; 36 - *Thylactus simulans*; 37 - *Pseudonemophas versteegii*; 38 - *Sarothrodera lowii*; 39 - *Aeolesthes sarta*; 40 - *Hoplocerambyx spinicornis*; 41 - *Chlorophorus annularis*; 42 - *Rhytidodera bowringii*; 43 - *Rhytidodera griseofasciata*; 44 - *Stromatium barbatum*; 45 - *Gnatholea simplex*; 46 - *Xystrocer a globosa*; 47 - *Xystrocer a festiva*; 48 - *Neoplocaederus obesus*; 49 - *Neocerambyx grandis*. © M.M. Kumawat

Lond. (2) 4: 89–112.

Hoplocerambyx relictus Pascoe, 1866 *Proc. Zoo. Soc. Lond.* 44: 504–537.

Hoplocerambyx morosus Pascoe, 1869 *Trans. Ent. Soc.*

Lond. 3 (3) 6: 499–552.

Hoplocerambyx spinicornis Duffy, 1968 *Brit. Mus (Nat. Hist.)*: 1–434.

Hoplocerambyx spinicornis Hayashi & Makihara, 1981

Esakia (17): 183–200.

Haplocerambyx spinicornis Niisato, 1990 *Elytra* 18 (1): 109–128.

Specimens examined: CHF/2015/320, male, 19.iv.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Donald; CHF/2015/321, female, 10.v.2012, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. B. Mibang.

Distribution: Afghanistan, Pakistan, Nepal, India, Bhutan, China, Myanmar, Thailand, Laos, Malaysia, Borneo, Indonesia (Sumatra, Java), Philippines (Mindanao, Luzon, Benguet, Negros).

Biology: The beetle emerges from June to August, coincidence with the rains. The gravid female lays eggs singly in cracks and crevices of the bark of unhealthy, fallen trees, dead trees and live trees also. The newly hatched larva starts feeding under the bark and gradually moves down to the sapwood by making tunnels. The larval period completes in 4–7 months. The fully grown larva returns to the peripheral region and excavates a chamber for pupation. The larva remains here in prepupal stage for several months. It pupates for 2–3 weeks, the newly emerged beetle remains in the chamber till the onset of rains (Thakur 2000). The borer ranks as the most injurious forest insect in India (Beeson 1941; Thakur 2000).

Host Plants: *Shorea assamica*, *S. obtusa*, *S. robusta*, *Duabanga sonneratioides*, *Hevea braziliensis*.

41. *Chlorophorus annularis* (Fabricius, 1787) (Image 41)

Callidium annularis Fabricius, 1787 *Mant. Ins.* 1: 156.

Clytus annularis Fabricius, 1801 *Syst. Eleuth.* 2: 352.

Chlorophorus annularis Chevrolat, 1863 *Mem. Soc. R. Sci. Liege* 18: 290.

Clytanthus annularis Bates, 1873 *Ann. Mag. Nat. Hist.* (4)12: 16.

Caloclytus annularis Gahan, 1906 *Fauna Brit. India Col.* 1: 261.

Rhaphuma annularis Ohbayashi, 1963 *Fragment. coleopt.* (3): 11.

Callidium bidens Wever, 1801 *Obs. Ent.* p. 90.

Caloclytus annularis Basak & Biswas, 1985 *Records of the ZSI India* 82 (1–4): 217.

Chlorophorus (Chlorophorus) annularis Ozdikmen, 2011 *Munis Entomol. Zool.* 6 (2): 536.

Specimen examined: CHF/2015/323, male, 14.iv.2009, felled bamboo, Sille (elevation 140m), Arunachal Pradesh, India, coll. Shibstanding; CHF/2015/324, female, 20.v.2012, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Donald.

Distribution: North America, Oceania, South America, Australia, Micronesia, Hawaii Islands, India, Myanmar,

Siam, China, Malaya Peninsula, New Guinea, Japan, East Indies.

Biology: Oviposition occurs on cut bamboo which has already lost a certain amount of sap. The first instar larvae bore into the tissues of the walls of the bamboo, making irregular excavations which are packed with powdery wooden particles and frass. The galleries are not delimited by the nodes. The mature larva excavates a cell in the wood in which it pupates. Adults emerge from May to September but principally in June (Stebbing 1914; Duffy 1953b). It is a native of Asia (Duffy 1953a).

Host Plants: *Bambusa*, *Citrus*, *Dendrocalamus strictus*, *Dipterocarpus tuberculatus*, *Gossypium*, *Liquidambar formosana*, *Phyllostachys reticulata*, *Pyrus malus*, *Shorea robusta*, *Sinocalamus*, *Sinobambusa gibbosa*, *Spondias*, *Tectona grandis*, *Derris dalberuinides* and *Vitis* (Duffy 1968).

42. *Rhytidodera bowringii* White, 1853 (Image 42)

Rhytidodera bowringii White, 1853 *Cat. Coleopt. Brit. Mus. Longicorn.* 7: 133.

Rhytidodera bowringii Thomson, 1864 *Mem. Soc. R. Sci. Liege* 19: 1–540.

Rhytidodera bowringii Weigel, 2006 *Ver. der Fre. und For. des Naturk. Erfurt e. V.*: 498.

Specimens examined: CHF/2015/327, male, 21.iv.2013, light trap, East Siang (elevation 175m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/328, male, 18.v.2013, mango orchard, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/329, female, 19.iv.2009, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Sanchi.

Distribution: Arunachal Pradesh, India, Subtropical China, Nepal, Myanmar, Thailand, Laos, Vietnam

Biology: Eggs are laid in batches of 6–8 on living shoots and branches of mango trees over 8–10 years old. On hatching the larva enters the branches and feed on sapwood that is kept clean of wood dust. The adults emerge from June to August. Larval and pupal periods are 260–310 and 30–50 days, respectively.

Host Plants: Mango, cashew nuts

43. *Rhytidodera griseofasciata* Pic, 1912 (Image 43)

Rhytidodera griseofasciata Pic, 1912 *L. Echange Rev. Linn.* 28 (326): 16.

Rhytidodera griseofasciata Lobl & Smetana, 2010 *Cat. Palaearctic Coleopt.-6, Apollo Books*: 162.

Specimen examined: CHF/2015/330, male, 01.iv.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Hokivi.

Distribution: China from Yunnan province. The species

was first time reported from India (Arunachal Pradesh) during the present study.

Biology: Unknown

Host Plants: Unknown

44. *Stromatium barbatum* Fabricius, 1775 (Image 44)

Callidium barbatum Fabricius, 1775 *Syst. Ent.*: 189

Cerambyx (Callidium) tranquebaricus Gmelin, 1790 *Editio 13, Lipsiae Beer* 1 (4): 1848.

Callidium variolosum Fabricius, 1798 *Proft Storch Hafniae*: 149.

Callidium funestum Boisd, 1835 *Voy. d'Astrolabe* 2: 481

Stromatium barbatum Castelnau, 1840 *P. Dumenil* 2: 452.

Stromatium barbatum Gahan, 1906 *Fauna Brit. India Col.* 1: 114

Stromatium barbatum Aurivillius, 1912 *Coleopt. Cat.* 39: 73

Stromatium barbatum Stebbing, 1914 *Ind. For. Ins.*: 291

Stromatium barbatum Villiers, 1966 *J. Coll. Arts Sci.* (4): 550.

Stromatium barbatum Hayashi, 1979 *Ent. Rev.* 33(1/2): 86

Specimens examined: CHF/2015/331, male, 03.vi.2010, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Bilin Maying; CHF/2015/332, female, 01.xii.2008, forest logs, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Madhu.

Distribution: India, Andaman, Sri Lanka, Myanmar, Nepal, Mauritius, Bourbon, Madagascar, Bangladesh.

Biology: *Stromatium barbatum* is primarily a pest of packing cases, seasoned timber, furniture, plywood, and wood work in buildings. It also attacks bamboos. This species has been known to attack over 300 tree species. The female beetle lays eggs on the bark. The newly hatched larva feeds under the bark until it matures enough. The larvae while excavating in the wood, throws out coarse dust, frass and wood fibres from the boring (Thakur 2000).

Host Plants: This species has been known to attack over 300 tree species (Duffy 1968, Thakur 2000).

45. *Gnatholea simplex* Gahan, 1890 (Image 45)

Gnatholea simplex Gahan, 1890 *Ann. Mag. Nat. Hist.* 6 (5) 25: 53.

Gnatholea simplex Gahan, 1906 *Fauna Brit. India Col.*: 111.

Gnatholea simplex Makihara et al., 2008 *Bulletin of the F.F.P.R.I.* 7 (2) 407: 99.

Specimen examined: CHF/2015/334, male, 01.iv.2013, light trap, Pasighat (elevation 150m), Arunachal Pradesh,

India, coll. B. Mibang.

Distribution: Arunachal Pradesh, Sikkim, Darjeeling, Assam, Burma, Ruby Mines, Mandalay and Prome, Tharawaddy, Sri Lanka

Biology: The life-cycle of this sapwood borer is annual which gets prolonged upto three years under dry conditions. Adult emergence takes place during May–August, mainly in May (Beeson 1941; Duffy 1968).

Host Plants: *Hardwickia binata*, *Albizia odoratissima*, *Millettia pinnata*, *Pongamia glabra*, *Shorea robusta*.

46. *Xystrocera globosa* (Olivier, 1795) (Image 46)

Cerambyx globosus Olivier, 1795 *Ent.* (4) 67: 27.

Callidium marginale Goldfuss, 1805 *Walther Erlangae* 1805: 44.

Xystrocera globosa Audinet-Serville, 1834 *Ann. Soc. Ent. Fr. Paris* (3) 1: 70.

Xystrocera viridipicta Fairmaire, 1896 *Ann. Soc. Ent. Belg.* 40 (8): 367.

Xystrocera globosa v. *reductevittata* Breuning, 1957 *Bull. I.F.A.N.* 19 A (4): 1241.

Xystrocera globosa v. *invittata* Breuning, 1957 *Bull. I.F.A.N.* 19 A (4): 1241.

Xystrocera globosa var. *mediovitticollis* Breuning, 1957 *Bull. I.F.A.N.* 19 A (4): 1241.

Xystrocera globosa m. *onomichiensis* Ohbayashi, 1963 *Fragmenta Coleopt.* (2): 10.

Xystrocera globosa ssp. *diehli* Heyrovsky Lo, 1967 *Bull. Soc. Ent. Mulhouse*: 39.

Xylotrechus globosa Wang, 2003 [misspelling]

Xystrocera globosa mediovitticollis Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press*, Guangzhou 2: 237.

Specimen examined: CHF/2015/336, male, 21.iv.2011, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu.

Distribution: Europe and northern Asia, South and South-east Asia, Australasian to Oceanian

Biology: The larva initially feed beneath the bark, making cavities in the outer sapwood portion. As the larva grows, it penetrates deep into the wood resulting in formation of longitudinal galleries (Mathew 1982). Adult emergence occurs every month of the year but mainly in May, June and September. Larval period is variable and in some individuals may be prolonged for two years, while others of the same brood may develop in less than a year (Duffy 1953a).

Host Plants: *Albizia odoratissima*, *A. falcataria*, *A. odoratissima*, *A. lebbek*, *A. lucida*, *A. moluccana*, *A. odoratissima*, *A. procera*, *A. stipulata*, *Bombax ceiba*, *Haldina cordifolia*, *Acacia catechu*, *A. modesta*, *A. auriculiformis*, *A. magnium*, *Acrocarpus fraxinifolius*,

Bauhinia acuminata, *Grewia tiliaefolia*, *Xylia dolabriformis*, *Paraserianthus faleataria* (Beeson 1941; Nair 2000).

47. *Xystrocera festiva* Thomson, 1861 (Image 47)

Xystrocera festiva Thomson, 1861 *Essai. Classif. Cerambi.*: 251.

Xystrocera festiva Pascoe, 1869 *Trans. Ent. Soc. Lond.* 3 (3) 6: 506.

Xystrocera festiva Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press*, Guangzhou: 237.

Specimens examined: CHF/2015/339, male, 28.x.2008, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/340, female, 06.iv.2013, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Ashutosh.

Distribution: India, Burma, Karenee, Sumatra, Java, Borneo, China, Hainan, Yunnan, Java, Malaysia.

Biology: Almost similar to that of *X. globosa*.

Host Plants: *Acacia* spp., *Paraserianthus faleataria*, *Albizia lebbek*, *Tectona grandis* (Nair 2000).

48. *Neoplocaederus obesus* (Gahan, 1890) (Image 48)

Hammaticherus obesus Dejean, 1837 *Mequignon-Marvis Pere Fils* (3)1: 347.

Cerambyx obesus Gemminger & Harold, 1872 *Sumptu E. H. Gummi Monachii*. 9: 2802.

Plocaederus pedestris Cotes, 1889 *Indian Mus. Notes* 1: 91.

Plocaederus obesus Gahan, 1890 *Ann. Mag. Nat. Hist.* 6, 5:51, 6: 259.

Plocaederus obesus Khan, 1985 *Proc. Indian Acad. Sci.* 94 (4): 435–441.

Plocaederus obesus Gahan, 1906 *Fauna Brit. India Col.* 1: 121

Plocaederus obesus Holzschuh, 1977 *Entomol. Basiliensa* 2: 337–341.

Neoplocaederus obesus Lobl & Smetana, 2010 *Cat. Palaearctic Coleopt.-6, Apollo books*: 161.

Specimens examined: CHF/2015/343, male, 05.v.2013, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Ashish; CHF/2015/344, female, light trap, Pasighat (elevation 150m), Arunachal Pradesh, 28.x.2008, coll. Oni.

Distribution: Sri Lanka, India including northeastern region, Arunachal Pradesh, Andaman and Nicobar, Bangladesh, Myanmar, Thailand, Vietnam, Laos, China, Taiwan, Bhutan.

Biology: The female beetle lays 40–50 eggs in the live tissues or in the crevices of the bark at the collar region. The eggs hatch out as tiny grubs which bore into the fresh tissues of the bark, feed on the sap wood and make tunnels

in broad and irregular directions and reached in roots. The grubs feed inside the tissues for 3–6 months. The pupal period lasts for 3–4 months. Adult emergence occurs from January–May depending upon the climatic conditions or coinciding with pre monsoon rains. It has one generation in a year (Meshram 2009; Vasanthi & Raviprasad 2013).

Host Plants: *Anacardium occidentale*, *Boswellia serrata*, *Buchanania lanzan*, *Bombax malabaricum*, *Bombax heptaphyllum*, *Butea monosperma*, *B. frondosa*, *Caryota urens*, *Cedrela toona*, *Ceiba pentandra*, *Cordia dichotoma*, *Dracontomelon dao*, *Eriodendron anfractuosum*, *Garuga pinnata*, *Gmelina arborea*, *Kydia calycina*, *Lannea coromandelica*, *Mangifera indica*, *Odina wodier*, *Odina* sp., *Protium serratum*, *Pterocarpus marsupium*, *Salmalia malabarica*, *Shorea robusta*, *Spondias mangifera*, *Sterculia colorata*, *S. urens*, *S. villosa* and *Terminalia tomentosa* (Duffy 1968; Stebbing 1914).

49. *Neocerambyx grandis* Gahan, 1891 (Image 49)

Neocerambyx grandis Gahan, 1891 *Ann. Mag. Nat. Hist. Lond.* (6) 7 (37): 20.

Neocerambyx grandis Gahan, 1906 *Fauna Brit. India Col.*1: 125.

Neocerambyx (*s. str.*) *grandis* Gressitt & Rondon, 1970 *Pacific Insects Mono.* 24: 58.

Neocerambyx grandis Hua, 2002 *Zhongshan (Sun Yat-sen) Univ. Press* Guangzhou 2: 218.

Specimens examined: CHF/2015/347, male, 20.iv.2013, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Mantu; CHF/2015/348, female, 30.vii.2013, light trap, Pasighat (elevation 150m), Arunachal Pradesh, India, coll. Bikram.

Distribution: Allahabad, Assam, Arunachal Pradesh (reported first time during the course of the present study), China, Laos.

Biology: Unknown

Host Plants: Unknown

CONCLUSIONS

A total 49 species of the coleopteran family Cerambycidae were recorded during the study, out of which subfamily Lamiinae included 28 species, Cerambycinae 11 species and Prioninae 10 species. *Rhytidodera griseofasciata* Pic is reported for the first time from India whereas seven other species are reported for the first time in Arunachal Pradesh, northeastern India. The observations indicate that Arunachal Pradesh is a rich spot for entomological fauna. Most of the area is densely covered by deciduous and evergreen forests. A long

term survey covering maximum habitats over different seasons would be required at the earliest to explore and document the entomological wealth of the region. All the cerambycids are primary pests of forest trees and timber products which cause huge economic losses in the region. Considering the lack of studies on the wood borer insects in Arunachal Pradesh, present findings have much significant for understanding insect biodiversity in the region and providing baseline data for further research programmes.

REFERENCES

- Afsaneh, M., K. Jahangir & H. Bijan (2011). Oviposition Preference and Larval Performance of *Aeolesthes sarta* (Coleoptera: Cerambycidae) in Six Hardwood Tree Species. *Journal of Pest Science* 84(3): 355–361; <http://dx.doi.org/10.1007/s10340-011-0362-5>
- Agarwala, B.K. & P.P. Bhattacharjee (2012). Long-horned beetles (Coleoptera: Cerambycidae) and Tortoise Beetles (Chrysomelidae: Cassidinae) of Tripura, northeastern India with some new additions. *Journal of Threatened Taxa* 4(13): 3223–3227; <http://dx.doi.org/10.11609/JoTT.o2951.3223-7>
- Agarwala, B.K. & P.P. Bhattacharjee (2015). Redescription of *Aristobia reticulata* (F. 1781) (Coleoptera: Cerambycidae: Lamiinae), with a taxonomic note and record of a new food plant for adults in northeastern India. *The Coleopterists Bulletin* 69(2): 205–212; <http://dx.doi.org/10.1649/0010-065X-69.2.205>
- Ahmad, M.I., I.A. Hafiz & M.I. Chaudhry (1977). Biological studies on *Aeolesthes sarta* Solsky attacking poplars in Pakistan. *Pakistan Journal of Forestry* 27(3): 122–129.
- Anonymous (2006). *Fauna of Arunachal Pradesh. State fauna Series 13 (Part 2)*. Zoological Survey of India Publication, 518pp.
- Atwal, A.S. & G.S. Dhaliwal (1997). Agricultural pests of South Asia and their management. Kalyanai Publishers, Ludhiana, 487pp.
- Aurivillius, C. (1912). Cerambycidae: Cerambycinae, Coleopterorum Catalogus pars 39 (vol. 22), pp. 1–574. W. Junk & S. Schenkling (eds.). Berlin. Electronic version accessed 17 July 2013.
- Beeson, C.F.C. & B.M. Bhatia (1939). On the biology of the Cerambycidae (Coleoptera). *Indian Forest Records* 5(1): 1–235.
- Beeson, C.F.C. (1941). *Ecology and Control of Forest Insects in India and the Neighbouring Countries. Reprinted Government of India Publication, 1961*. Vasant Press, Dehradun, xiii+1007.
- Bhasin, G.D., M.L. Roonwal & B. Singh (1958). A list of insect pests of forest plants in India and the adjacent countries. List of insect pests of plant genera "A", "B", and "C" (in part). *Indian Forest Bulletin* 171(2): 1–126.
- Breuning, S. (1957). Insectes coleopteres Cerambycidae Lamiinae (232). *Faune de Madagascar* 4: 1–401.
- Breuning, S. (1960–62). Revision systematique Des especes du genre *Oberea* Mulsant du globe. *Frustula Entomologica* (Pt. 1, 2, 3): 232pp.
- Breuning, S. (1964). Revision der Apomecynini der asiatisch-australischen Region. *Entomologische Abhandlungen Museum fur Tierkunde in Dresden* 30: 528.
- Breuning, S. (1965). Revision der 35 Gattung der Pteropliini der asiatischen Region (Col. Cerambycidae). *Entomologische Arbeiten aus dem Museum G Frey* 16: 161–472.
- Breuning, S. (1966). Revision der Agapanthini der eurasiatisch-australischen Region (Coleoptera: Cerambycidae). *Entomologischen Abhandlungen Museum fur Tierkunde in Dresden* 34(1): 144pp.
- CABI (2007). CAB International Crop Protection Compendium. <www.cabi.org>. Downloaded on 09 September 2013.
- Chandra, K., B. Biswas & S. Kushwaha (2015). Diversity of Pyrrhocoroidea (Hemiptera: Heteroptera) of Madhya Pradesh, India. *Munis Entomology & Zoology* 10(1): 169–171.
- Chemsak, J.A. (1996). *Illustrated revision of the Cerambycidae of north America - Vol. I Parandrinae, Spondylidinae, Aseminae, Prioninae*. Wolfgang Books. Li Burbank, California 1: i-x+150pp.
- Cherepanov, A.L. (1979). Longhorns beetles of Northern Asia, 1. Prioninae, Aseminae Nauka. *Novosibirsk* 1–472.
- David, B.V. & V.V. Ramamurthy (2012). *Elements of Economic Entomology*. Namrutha Publications, Chennai, India, 390pp.
- Dawah, H.A., S.A. Alkahtani, A.H. Hobani & S.N. Sahloli (2013). The First Occurrence of *Coptops aedificator* (Fabricius) (Coleoptera: Cerambycidae) - a Pest of Cultivated Mango in south-western Saudi Arabia. *Journal of Jazan University* 2(2): 1–9.
- Desmier de, C.R., M. Asjari & W.T. Kitu (1990). An unnoticed important pest on germinating coconuts in Indonesia *Pterolophia apiceplagiata* Breuning, Coleoptera Cerambycidae, pp. 69–76. In: Ooi, A.C.P., G.S. Lim & P.S. Teng (eds.). *International Conference on Plant Protection in the Tropics*. Malaysian Plant Protection Society, March 20–23, 1990, Kuala Lumpur.
- Desmier de, C.R., M. Asjari & W.T. Kitu (1991). A newly observed important pest on germinating coconuts in Indonesia, *Pterolophia apiceplagiata* Breuning (Coleoptera: Cerambycidae). *Oleagineux* 46: 321–327.
- Duffy, E.A.J. (1953a). The Immature Stages of Hawaiian Cerambycidae, with a key to Larvae. *Proceedings Hawaiian Entomological Society* 15(1): 135–158.
- Duffy, E.A.J. (1953b). *A Monograph of the Immature Stages of British and imported Timber Beetles (Cerambycidae)*. British Museum (Natural History), 350pp.
- Duffy, E.A.J. (1968). *A Monograph of the Immature Stages of Oriental Timber Beetles (Cerambycidae)*. British Museum (Natural History), 435pp.
- Dutt, N. (1952). *Nupserha bicolor* Thoms. subsp. *postbrunnea* Breun.: a new pest on jute (*Corchorus olitorius* Linn.). *Nature* 170(4320): 287–288.
- Dutt, N. (1956). Studies on *Nupserha bicolor* Thoms ssp. *postbrunnea* Breun. (Col., Lamiidae). *Jute Bulletin* 18(10): 254–256.
- Dutt, N. (1961). Studies on the bionomics of the jute stem girdler, *Nupserha bicolor postbrunnea* Dutt (Col., Lamiidae). *Bulletin of Entomological Research* 51(4): 765–779.
- Fireak, D.M., G.T. Behere, P.D. Fireak & N.S.A. Thakur (2012). Crop-pest scenario under changing climate of north eastern Himalaya, India, pp. 48–48. In: International Symposium on Food Security Dilemma: Plant Health and Climate Change Issues, December 7–9, 2012, AAPP, BCKV, Kalyani, West Bengal, India.
- Fraser, M.G. (1949). Notes upon the biology of certain species of exotic Cerambycidae (Col.) occasionally imported into Britain. *Entomologist's Monthly Magazine* 85: 97–99.
- Gahan, C.J. (1906). *The Fauna of British India including Ceylon and Burma, Coleoptera - Vol. 1 (Cerambycidae)*. Taylor and Francis, London: 329pp.
- Ghate, H.V., S. Riphung & N.S.A. Thakur (2012). First record of the Long-horned Beetle *Sarothrodera lowii* White, 1846 (Cerambycidae: Lamiinae: Lamiini) from India. *Journal of Threatened Taxa* 4(7): 2709–2712; <http://dx.doi.org/10.11609/JoTT.o2890.2709-12>
- Gressitt, J.L. (1951). Longicorn beetles of China. *Longicornia* 2: 667pp.
- Hawkeswood, T.J. (2011). Review of the biology and host plants of several species of *Pterolophia* Newman, 1842 (Coleoptera: Cerambycidae) from Papua New Guinea and the Solomon Islands, *Calodema* 164: 1–4.
- Hayashi, M. & H. Makihara (1981). The Cerambycidae (Coleoptera) of Nepal Collected by the Kyushu University Scientific Expedition. *Esakia* 17: 183–200.
- Hayashi, M., S. Nakamura, H. Makihara, A. Saito & Y. Chu (1988). A list of cerambycidae beetles from Taiwan (I). *Chinese Journal of Entomology* 8: 165–184.
- Heffern D.J. (2005). Catalog and Bibliography of Longhorned Beetles from Borneo Coleoptera: Cerambycidae. http://www.zin.ru/animalia/Coleoptera/pdf/borneo_catalog_electronic_version_2005-1.pdf Electronic version accessed 25 April 2013.
- Hegde, S.N. (2003). Arunachal Pradesh State Biodiversity Strategy and Action Plan. State Forest Research Institute, Itanagar, Arunachal Pradesh, India, xxvi+199pp.

- Ho, D.P., H.W. Liang, Z.W. Feng & X.D. Zhao (1990). A study of the biology and control methods of the long horn beetle *Aristobia testudo* (Voet). *Natural Enemies of Insects* 12(3): 123–128.
- Holzschuh, C. (1999). Beschreibung von 71 neuen Bockkäfern aus Asien, vorwiegend aus China, Laos, Thailand und Indien (Coleoptera, Cerambycidae). *Schriftenreihe der Forstlichen Bundesversuchsanstalt (FBVA-Berichte)* 110: 1–64.
- Holzschuh, C. (2003). Description of 72 new longhorn beetles from Asia, mostly from China, India, Laos and Thailand, Coleoptera, Cerambycidae. *Entomologica Basiliensia* 24(25): 147–241.
- Hua, L.Z. (2002). *List of Chinese Insects*. Zhongshan (Sun Yat-sen) University Press, Guangzhou, China.
- Husain, M.A. & M.A.W. Khan (1940). Bionomics and control of the fig-tree borer, *Batocera rufomaculata* De Geer (Coleoptera: Lamiidae). *Indian Journal of Agricultural Science* 10: 945–959.
- ICJC (1958). *Annual Report of the Jute Agricultural Research Institute*, Indian Central Jute Committee, Calcutta, India.
- Jiroux, E., P. Garreau, J. Bentanachs & P. Patrick (2014). First contribution to the study of Monochamini in Southeast Asia (Coleoptera, Cerambycidae, Lamiinae). *Les Cahiers Magellanes (NS)* 14: 67–118.
- Kulkarni, H.D. (2010). Indigenous insect pests - *Batocera* and *Apriona* beetle attack on eucalyptus. *Karnataka Journal of Agricultural Sciences* 23(1): 207–210.
- Lawrence, J.F. (1982). Coleoptera, pp. 482–553. In: Parker, S.P. (ed.) *Synopsis and Classification of Living Organisms*, vol 2. McGraw Hill, New York.
- Lefroy, H.M. (1909). *Indian Insect Life. 4th Indian Reprint, 1984*. Jagmandir Book Agency, New Delhi, India, 786pp.
- Lobl, I. & A. Smetana (eds.) (2010). *Catalogue of Palaearctic Coleoptera. Vol. 6 Chrysomeloidea*. Apollo books, Stenstrup 6: 1–924.
- Makihara, H., W. Noerdjito & Sugiarto (2002). Longicorn Beetles from Gunung Halimun National Park, West Java, Indonesia from 1997–2002 (Coleoptera, Disteniidae and Cerambycidae). *Bulletin of FFPRI* 1(3) (384): 189–223.
- Makihara, H., A. Mannakkara, T. Fujimura & A. Ohtake (2008). Checklist of longicorn coleoptera of Sri Lanka (1) Vesperidae and Cerambycidae excluding Lamiinae. *Bulletin of FFPRI* 7(2)(407): 95–110.
- Mathew, G. (1982). A survey of beetles damaging commercially important stored timber in Kerala. KFR I Research Report 10, Kerala Forest Research Institute, Thrissur, Kerala, 92pp.
- Mathur, R.N. & B. Singh (1961). A List of insect pests of forest plants in India and the adjacent countries: Part 9 - List of insect pests of plant genera 'S' (*Sabia* to *Syzygium*). *Indian Forest Bulletin* 171(8): 69–70.
- Meshram, P.B. (2009). Stem Borer *Plocaederus obesus* Gahn (Coleoptera: Cerambycidae) as a pest of *Buchanania lanzan* (Spreng). *World Journal of Zoology* 4(4): 305–307.
- Miguel, A.M. (2005). Catalogue of the Cerambycidae (Coleoptera) of the Neotropical Region. Part II. Subfamily Lamiinae. *Zootaxa* 1023: 1–760.
- Mukhopadhyay, P. & S. Biswas (2000a). Coleoptera: Cerambycidae, pp. 41–67. In: Director, Zoological Survey of India (ed.). *Zoological Survey of India, State Fauna Series 4, Fauna of Meghalaya, Part 5*, 666pp.
- Mukhopadhyay, P. & S. Biswas (2000b). Coleoptera: Cerambycidae, pp. 139–142. In: Director, Zoological Survey of India (ed.). *Zoological Survey of India, State Fauna Series 7, Fauna of Tripura, Part 3*, 390pp.
- Mukhopadhyay, P. & S.K. Halder (2004). Insecta: Coleoptera: Cerambycidae, pp. 421–431. In: Director, Zoological Survey of India (ed.). *Zoological Survey of India, State Fauna Series 10, Fauna of Manipur, Part 2*, 625pp.
- Muthukrishnan, N., N. Ganapathy, R. Nalini & R. Rajendra (2005). *Pest Management in Horticultural Crops*. New Madura Publishers, Madurai, 325pp.
- Nair, K.S.S. (2000). *Insect Pests and Diseases in Indonesian Forest: An Assessment of the Major Threat, Research Efforts and Literature*. Center for International Forestry Research, Bogor, Indonesia, 101pp.
- Nair, M.R.G.K. (1975). *Insects and mites of crops in India*. Indian Council of Agricultural Research, New Delhi, 404pp.
- Ponpinij, S. (2011). Taxonomy of the long horned beetles (Coleoptera: Cerambycidae) in the north of Thailand. PhD Thesis. Department of Entomology, Graduate School, Kasetsart University, Thailand, 703pp.
- Rahman, K.A. & A.W. Khan (1942). A study of the life-history and control of *Batocera horsfieldi* hope (Lamiidae: Coleoptera): A borer pest of walnut tree in the Punjab. *Proceedings of the Indian Academy of Sciences* 15(4): 202–205.
- Ramakrishna & J.R.B. Alfred (2006). Fauna of Arunachal Pradesh: an overview, pp. 1–20. In: Director, Zoological Survey of India (ed.). *Zoological Survey of India, State Fauna Series 13, Fauna of Arunachal Pradesh, Part 1*, 518pp.
- Rondon, J.A. & S. von Breuning (1970). Lamiines du Laos. pp. 315–571. In: Gressitt, J.L., J.A. Rondon & S. von Breuning, *Cerambycid-beetles of Laos (Longicornes du Laos)*. *Pacific Insects' Monograph* 24, Bernice P. Bishop Museum, Hawaii, USA, 651pp.
- Saikia, K., N.S.A. Thakur & A. Ao (2011). Biology of Citrus Trunk Borer (*Anoplophora versteegi* Rits.) (Coleoptera : Cerambycidae) under Laboratory Conditions. *Indian Journal of Hill Farming* 24(2): 19–24.
- Sengupta, C.K. & T. Sengupta (1981). Cerambycidae (Coleoptera) of Arunachal Pradesh. *Records of the Zoological Survey of India* 78: 133–154.
- Shylesha, A.N., N.S.A. Thakur & Ramchandra (2000). Incidence of litchi Trunk Borer, *Aristobia testudo* Voet (Coleoptera: Lamiidae) on guava in Meghalaya. *Pest Management in Horticultural Ecosystems* 6(2): 156–157.
- Singh, K.M. & T.K. Singh (2012). Life cycle and host preference of citrus Trunk Borer, *Anoplophora versteegi* Ritsema (Cerambycidae: Coleoptera). *Indian Journal of Entomology* 74(2): 120–124.
- Singh, O.T., J. Chakravorty, S. Nabom & D. Kato (2007). Species diversity and occurrence of edible insects with special reference to Coleopterans of Arunachal Pradesh. *Journal of Natural Conservation* 19(1): 167–176.
- Singh, O.T., J. Chakravorty & R. Varatharajan (2010). Entomofauna of Kane Wildlife Sanctuary, Arunachal Pradesh, north eastern India. *Journal of Threatened Taxa* 2(13): 1392–1400; <http://dx.doi.org/10.11609/JoTT.o1946.1392-400>
- Srivastava, K.P. & D.K. Butani (2009). *Pest management in vegetables, Vol. I*. Stadium Press (India) Pvt. Ltd., New Delhi, 381pp.
- Stebbing, E.B. (1914). *Indian Forest Insects of Economic Importance: Coleoptera*. Indian reprint, 1977, J. K. Jain Brothers, Bhopal, India, 648pp.
- Sudhi, A.S., K. Jumroenma, P. Chaowattanawong, W. Plodkornburee & Y. Sangchote (2008). Studies on the biology and infestation of stem borer, *Batocera rufomaculata* in Durian. *Acta Horticulturae* 787: 331–337.
- Thakur, M.L. (2000). *Forest Entomology: Ecology and Management*. Sai Publishers, Dehradun, India, 385pp.
- Varma, R.V. (1986). Seasonal incidence and possible control of important insect pests in plantations of *Ailanthus triphysa*. KFR I Research Report 39, Kerala Forest Research Institute, Thrissur, Kerala, 42pp.
- Vasanthi, P. & T.N. Raviprasad (2013). Biology and morphometrics of cashew stem and root borers (CSRB) *Plocaederus ferrugineus* and *Plocaederus obesus* (Coleoptera: Cerambycidae) reared on cashew bark. *International Journal of Scientific and Research Publications* 3(1): 1–7.
- Vorontsov, A.I. (1995). *Forest Entomology Manual for Universities, 5th edition*. Moscow, Ecologia, 352 pp.
- Yamazaki, K. & K. Takakura (2003). *Pterolophia granulata* (Motschulsky) (Coleoptera: Cerambycidae) as a pod borer. *The Coleopterists Bulletin* 57(3): 344; <http://dx.doi.org/10.1649/627>
- Ying, L., X. Sai, R.J. Qun, Z.X. Xiang & C. Li (2012). Comparative morphological study on genus *Batocera* (Coleoptera, Cerambycidae, Lamiinae, Batocerini). *Acta Zootaxonomica Sinica* 37(4): 701–711.
- Zhan, G., S. Yin & A. Gui (1996). The occurrence and control of a new pest *Pterolophia maacki* (Blessig) in mulberry fields. *Entomological Knowledge* 33: 215–216.
- Zhang, X.K. & Y.X. Zuo (1986). A preliminary study on *Thylactes simulans* Gahan. *Insect Knowledge* 23(5): 208–210.