

The Lasiocampidae (Lepidoptera) of Laos

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Abstract 52 species of the Lasiocampidae are known from Laos now. 2 species (*Trabala inga* Zolotuhin & S. Ihle, sp. nov. and *Kunugia labahingra* Zolotuhin, sp. nov.) are described here as new. 39 species are listed for Laos for the first time. Preimaginal stages for some species are firstly described and illustrated.

The Lasiocampidae fauna of Laos is poorly known and just a very few specimens have been collected from there until past few decades. But since 2004 very interesting material has been obtained by Thomas Ihle that allow us to propose a first part of an annotated list of the species from the country.

Laos's unique lepidopterous composition is the result of its fortunate geographical position. Being situated between Thailand and Vietnam, it should be considered to be a specific bridge between zoogeographical complexes of both countries. Most part of the country is mountainous. Gneiss and granite ridges of middle high are typical for the north. Plateau Jarres with highest point Bia as 2820 m is situated here in winding of Mekong. Single dome-shaped crests of 1500–2711 m are typical for Annam Mountains on the east of the country. On the south of Laos, a basalt plateau Bolovens with peaks up to 1572 m is situated. The northern part of the country forms a common zoogeographical center with northern Thailand, northern Vietnam and north-eastern Myanmar but southern part, almost unknown for us in faunistic spectrum so far, seems to keep a lot of surprises; this interesting part of the country is alas still poorly investigated.

The first species of Lasiocampidae described from Laos was *Cosmeptera salvazai* de Lajonquière, 1979. Besides these, a few articles attributed any species of Lasiocampidae to the country, those few mentioning them mainly either as new for science (Zolotuhin, 2001) or in the context of distributional characteristics of species from other regions (Zolotuhin & Pinratana, 2005).

At present, 52 species of lasiocampids are known from Laos but it is highly probable that many more species will be found there in future. We assume that species composition will not be less diverse than that of Thailand or Vietnam.

The main part of the material studied was obtained by Th. Ihle and is now deposited in the collections of ZFMK and of S. Ihle (Stuttgart), some more specimens from Laos are kept in Museum Witt, Munich (MWM). Other museums are mentioned and the following abbreviations are used for them in the text. CAHU: collection Armin Hauenstein, Untermuenkheim, Germany; CBAP: collection Bro Amnuay Pinratana, Bangkok, Thailand; CMSW: collection Manfred Ströhle, Weiden, Germany; CSIF: collection Siegfried Ihle, Filderstadt-Bonlanden, Germany; BMNH: The Natural History Museum, London; MNHNP: Museum National d'Histoire Naturelle, Paris; MWM: Museum Thomas J. Witt, Munich; NSMT: National Science Museum Tokyo, Japan; ZFMK: Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn; ZMHU: Zoologisches Museum der Humboldt Universität, Berlin; ZSM: Zoologische Staatssammlung, Munich.

When individual species are referred to, the only works listed are those which report the species as found in Laos. Species pointed with an asterisk *) are pointed out from Laos for the first time.

In the text, 2 species (*Trabala inga* Zolotuhin & S. Ihle, sp. nov. and *Kunugia labahingra* Zolotuhin, sp. nov.) are described as new. 39 species are listed for Laos for the first time. Preimaginal stages for some species are illustrated for the first time; this material was reared by S. Ihle from eggs obtained in nature by T. Ihle.

An annotated check-list of species

**Cerberolebeda styx* Zolotuhin, 1995

Cerberolebeda styx Zolotuhin, 1995, *Tinea* **14** (3): 164, figs 11, 22. Type locality: Northern Vietnam, Mt Fan-si-pan, west side, Cha-pa, 1600-1800 m. Holotype: male (MWM).

Material. 1 ♂, Laos, Prov. Luang Prabang, Phou Khoun, 1500 m, 05.IX 2004, leg. Th. Ihle (CSIF).

Geographical range. Laos, northern Vietnam, northern Thailand, Myanmar, eastern India and south-eastern China (Guangdong, Guangxi, Hainan).

Comments. A lot of eggs were obtained by V. Zolotuhin from native females in Northern Vietnam (Fig. 1). The eggs are quite unusual for lasiocampids being almost spherical, lacking any pattern. Chorion is yellowish cream with distinct pearl shining. Caterpillars hatched reject all given native plants as a food; therefore it is assumed they are mono- or oligophagous on some special hosts.

Euthrix laeta (Walker, 1855)

Amydona laeta Walker, 1855, *List Spec. Lepid. Colln Brit. Mus.* **6**: 1416. Type locality: [northern India] Assam. Lectotype: female (BMNH).

Euthrix laeta austrina (de Lajonquière, 1978)

Philudoria laeta austrina de Lajonquière, 1978, *Annls Soc. ent. Fr.* **14** (3): 396, pl. 1 N, figs 11, 32. Type locality: Sumatra, Lebong Tandal. Holotype: male (BMNH).

References. Zolotuhin & Pinratana, 2005: 26.

Material. 1 ♂, Prov. Louang Phrabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK); 6 ♀, Prov. Louang Phrabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 2 ♀, the same locality, late II 2004, leg. Th. Ihle (ZFMK); 1 ♀, the same locality, late III 2004, leg. Th. Ihle (ZFMK); 7 ♂, Ban Viang Kham, 15 km südl. Phou Khoun, 950 m, leg. Th. Ihle (CSIF); 1 ♀, Prov. Xiang Khoang, Ban Nammadao, 30 km SE Phou Khoun, 1200 m, mid VII 2004, leg. Th. Ihle (ZFMK).

Geographical range. In some separate subspecies from Russian Far East, Korea and Japan over China, Nepal, Myanmar, Thailand and Vietnam to India, Sri Lanka, Laos, Peninsular Malaysia, Sumatra, Borneo, Philippines (Palawan, Balabac) and Java.

**Euthrix fox* Zolotuhin & Witt, 2000

Euthrix fox Zolotuhin & Witt, 2000, *Entomofauna Suppl.* **11** (3): 34, pl. 1, figs 6, 7; fig. 1. Type locality: Northern Vietnam, Mt. Fan-si-pan, Cha pa, 2400 m, 22°15'N, 103°46'E. Holotype: male (MWM).

References. Zolotuhin & Pinratana, 2005: 27.

Material. 1 ♂, Laos, Luang Prabang, VII 1996 (CMSW).

Geographical range. Vietnam, northern Thailand, southern China (Sichuan), Laos.

Euthrix isocyma (Hampson, 1892)

Odonestis isocyma Hampson, 1892, *Fauna Br. India incl. Ceylon and Myanmar, Moths* **1**: 427. Type locality: Assam, Naga Hills, 5500-7000 ft. Holotype: male (BMNH).

References. Zolotuhin & Pinratana, 2005: 28.

Material. 4 ♀, Laos, Ban Viang Kham, 15 km S Phou Khoun, 950 m, XI 2003, leg. Th. Ihle (CSIF); 1 ♀, the same data (ZFMK); 1 ♀, Laos, Ban Dan Sawan, Prov. Vientane, 320 m, 29.V 2003, leg. Th. Ihle (CSIF); 4 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Geographical range. Northern India, southern and central China, Myanmar, Vietnam, Thailand, Laos.

**Euthrix inobtrusa* (Walker, 1862)

Lasiocampa inobtrusa Walker, 1862, *Trans. ent. Soc. Lond.* **1**: 85. Type locality: "Hindustan". Holotype: male (coll. Oxford University).

Material. 2 ♀, Laos, Phou Fa, Pongsali, 1650 m, 21.X 2005, leg. Th. Ihle (CSIF).

Geographical range. Northern India, Nepal, central and southern China, Bhutan, Thailand, Laos, Vietnam, Peninsular Malaysia, Sumatra.

Euthrix lao Zolotuhin, 2001

Euthrix lao Zolotuhin, 2001, *Atalanta* **32** (3/4): 459, fig. 4; colour plate XXII, fig. 7. Type locality: Laos, Luang Prabang. Holotype: male (CMSW).

Material. 2 ♂, holo- and paratype, Laos, Luang Prabang, VII 1996 (CMSW).

Geographical range. Only known from the type locality so far.

Cosmeptera salvazai de Lajonquière, 1979

Cosmeptera salvazai Lajonquière, 1979, *Bull. Soc. ent. Fr.* **84**: 14, pl. 1D, fig. 4. Type locality: Laos, Phong Sali. Holotype: male (Cornell University, New York).

References. Zolotuhin & Pinratana, 2005: 35.

Material. 1 ♂, holotype, Laos, Phong Sali (coll. Cornell University, New York).

Geographical range. Laos and northern Thailand.

****Eteinopla signata*** (Moore, 1879)

Odonestis signata Moore, 1879, in Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr W. S. Atkinson* (1): 76. Type locality: India, Darjeeling. Lectotype: male (ZMHU).

Material. 6 ♂, Northern Laos, Phu Fa, Pongsali-City, 1650 m, 10.X 2004, leg. Th. Ihle (CSIF); 1 ♂, Prov. Phu Fa, Pongsali City, 21°44'N, 102°11'E, 1650 m, 10-18.XII 2004, leg. Th. Ihle (ZFMK); 1 ♂, Prov. Louang Phrabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK); 1 ♂, Prov. Louang Phrabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 1 ♂, the same locality, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. Northern India, Nepal, southern China, Myanmar, Thailand, Laos, Vietnam and Peninsular Malaysia.

****Micropacha zojka*** Zolotuhin, 2000

Micropacha zojka Zolotuhin, 2000, *Tinea* **16**: 156, figs 7, 8, 14, 15. Type locality: Northern Vietnam, Mal-chau, 25 km SE Moc-chau, 1400 m, 20°50'N, 104°40'E. Holotype: male (MWM).

Material. 1 ♂, Prov. Louang Phrabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. North-eastern India (Assam), southern China (Yunnan), Myanmar, Thailand, Laos, Vietnam and Peninsular Malaysia.

****Trabala vishnou*** (Lefebvre, 1827)

Gastropacha vishnou Lefebvre, 1827, *Zool. J.* (3): 207. Type locality: [India] Madras. Types: females (not found).

Material. 6 ♀, Northern Laos, Phu Fa, Pongsali-City, 1650 m, 10.X 2004, leg. Th. Ihle (CSIF, GU 2005-01 and 2005-04); 1 ♀, Laos, Prov. Luang Phrabang, Phou Khoun, 1500 m, 05.VII 2004 (CSIF); 3 ♀, Prov. Vientiane, Ban Viang Kham, 15 km S Phou Khoun, 950 m, mid VIII 2004, leg. Th. Ihle (ZFMK); 4 ♀, Prov. Louang Phrabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Geographical range. North-eastern Pakistan, India, Nepal, Myanmar, China, Cambodia, Thailand, Laos, Vietnam and Malaysia; Sri Lanka (ssp. *singhala* Roepke); Taiwan (ssp. *guttata* Mats.).

****Trabala pallida*** (Walker, 1855)

Amydona pallida Walker, 1855, *List Spec. lepid. Insects Colln Br. Mus.* 6: 1417. Type locality: Java. Lectotype: male (BMNH).

Material. 1 ♀, Prov. Louang Phrabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late III 2004, leg. Th. Ihle (ZFMK).

Geographical range. India (with southern parts), Andaman Is., southern China, Myanmar, Thailand,



Fig. 1. *Cerberolebeda styx* Zolt., eggs, Vietnam, Fan-si-Pan Mts, Sa-Pa env. Figs 2–5. *Dendrolimus grisea* (Moore), Laos, Phou Fa, Phôngsali, 1650 m. 2–3: mature larvae; 4: cocoon; 5: mating. Figs 6–7. *Kunugia ampla* (Walker), Laos, Phou Fa, Phôngsali, 1650 m. 6: L4 larva; 7: mature larva. Figs 8–13. *Kunugia florimaculata* (Tsai & Hou), Laos, Phou Fa, Phôngsali, 1650 m. 8: eggs; 9: L1 larva; 10: L2 larva; 11–12: mature larva; 13: mating.



Figs 14–17. *Kunugia falco* Zolt., Laos, Phou Fa, Phôngsali, 1650 m. 14: L4 larva; 15–16: mature larvae; 17: female in resting position. Figs 18–22. *Streblothe igniflua* (Moore), Laos, Phou Fa, Phôngsali, 1650 m. 18: L1 larvae; 19: L3 larva; 20: mature larva; 21: cocoon; 22: mating. Figs 23–25. *Pyrosis rotundipennis* (de Joannis), Laos, Phou Fa, Phôngsali, 1650 m. 23: L1 larvae; 24–25: mature larvae. Figs 26–28. *Gastropacha pardale sinensis* Tams, Laos, Phou Fa, Phôngsali, 1650 m. 26–27: mature larva; 28: male in resting position. Figs 29–32. *Arguda vinacea nepalina* Kishida, Northern Thailand, Chiang Mai, Doi Pha Hom Pok, Mae Ai, 2050 m. 29: L3 larva; 30–31: mature larva; 32: male in resting position.

Laos, Vietnam, Malaysia, Sumatra, Borneo, Java and Bali.

****Trabala irrorata* Moore, 1884**

Trabala irrorata Moore, 1884, *Trans. ent. Soc. Lond.* 1884: 375. Type locality: Java. Holotype: female (BMNH).

Material. 7 ♀, Laos, Ban Viang Kham, 15 km S Phou Khoun, 950 m, XI 2003, leg. Th. Ihle (CSIF).

Geographical range. Sumatra, Borneo, Malaysia, Myanmar, Thailand, Laos, Philippines (Palawan, Negros, Mindanao, Leyte), Java; Simalur (ssp. *simalura* Roepke, 1951).

****Trabala shiva* Roepke, 1951**

Trabala shiva Roepke, 1951, *Meded. landbhoogsch. Wageningen* 50: 120, pl. 3, fig. 8; pl. 10, fig. 8; pl. 11, fig. 8; pl. 12, fig. 7. Type locality: West Java, Goalpara. Holotype: male (coll. Wageningen).

Material. 1 ♀, Laos, Ban Viang Kham, 15 km S Phou Khoun, 950 m, XI 2003, leg. Th. Ihle (CSIF); 1 ♀, the same data, Ende III 2004, leg. Th. Ihle (CSIF); 1 ♀, Laos, N:19°21,447, E:102°25,300, Ban Viang Kham, 15 km south of Phou Khoun, 950 m, 25.XII 2004 (CSIF); 4 ♀, the same locality, late XI 2003, leg. Th. Ihle (ZFMK); 5 ♀, the same locality, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. Borneo, Sumatra, Java, Vietnam, Laos, Thailand.

Taxonomic remark. A female (Fig. 38) is attentively attributed to the males based on the collected material. It has wingspan 70 mm and fore wing length 38 mm. Both pairs of wings with serrate outer margin, ground colour yellowish-green with darker, grass-green shadows in basal and external fields and brownish cilia and outer part of R₄–M₃ field. Forewings with brownish, teathed medial fasciae, strongly curved basally on R-branch, dark ellipsoid discal spot with yellowish-green central eye. External fascia presents as a row of bluish-white spots corresponding well with those strokes on the wings of a male. Hindwings slightly darker, with teathed curved media and pointed external fascia. Antennae yellowish, bipectinated with short rami; thorax light green and abdomen yellowish-green. Apex of abdomen bears compact pillow of cream-yellow hair-like scales.

Shape and coloration of external fasciae (bluish-white spots in female or strokes in males – Fig. 37) are corresponding well between both sexes therefore the single female collected attributed here to the males of *shiva*. Both sexes were collected together in Ban Viang Kham.

****Trabala ganesh*a Roepke, 1951**

*Trabala ganesh*a Roepke, 1951, *Meded. landbhoogsch. Wageningen* 50: 119-120, pl. 1, fig.10; pl. 3, fig. 3; pl. 9, fig. 11, 12; pl. 11, fig. 3; pl. 12, fig. 3. Type locality: West Java, Perbawatee. Holotype: male (coll. Wageningen).

Material. 7 ♀, Laos, Ban Viang Kham, 15 km S Phou Khun, 950 m, end XI 2003, leg. Th. Ihle (ZFMK); 6 ♀, the same locality, late III 2004, leg. Th. Ihle (ZFMK); 4 ♀, Prov. Louang Prabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK).

Geographical range. From Sumatra, Borneo, Java, Palawan and Mindanao to Malaysia, Laos and southern Thailand.

****Trabala niphanae* Owada & Kishida, 1989**

Trabala niphanae Owada & Kishida, 1989, *Bull. Nat. Sci. Mus. Tokyo* 15 (1): 42, figs 6, 18. Type locality: central Thailand, Kanchanaburi, Erawan.

Material. 1 ♀, Laos, Ban Viang Kham, 15 km S Phou Khun, 950 m, end XI 2003, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Vientiane, Ban Viang Kham, 15 km S Phou Khoun, 950 m, mid VIII 2004, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Geographical range. Western Thailand, northern Vietnam and Laos.

***Trabala inga* Zolotuhin & S. Ihle, sp. nov.**

Holotype: ♀, Laos, Ban Viang Kham, 15 km S of Phou Khoun, 950 m, eIII 2004, leg. Th. Ihle (ZFMK). Paratypes: 4 ♀, Laos, Ban Viang Kham, 15 km S of Phou Khoun, 950 m, eIII 2004,

leg. Th. Ihle (ZFMK); 3 ♂, Laos, Ban Viang Kham, 15 km S of Phou Khoun, 950 m, eII 2004, leg. Th. Ihle (ZFMK); 1 ♀, 1 ♂, Laos, Ban Viang Kham, 15 km südl. von Phou Khoun, 950 m, Ende III 2004, leg. Th. Ihle (CSIF); 2 ♀, Laos, Ban Viang Kham, 15 km südl. von Phou, 950 m, 20.II 2004, leg. Th. Ihle (CSIF); 9 ♀, Laos, Ban Viang Kham, 15 km S Phou Khun, 950 m, end XI 2003, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Vientiane, Ban Viang Kham, 15 km S Phou Khoun, 950 m, mid VIII 2004, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Male (Figs 33, 34). Wingspan 39–41 mm and fore wing length 20–21 mm. Both pairs of wings with very fine undulate outer margin, ground colour yellowish apple-green with cilia concolored. Forewings with darker brownish green smooth, weakly curved medial fasciae, more or less rounded distinct discal spot without light bordering. External fascia presents as an irregular row of darker spots. No light field surrounded medial fasciae is present. Hindwings of the same ground colour, with straight medial fasciae visible in the foreground, anal corner broadly lightened. Antennae dark yellow, bipectinated. Green colour is changed easily to yellowish during preparation.

Female (Figs 35, 36). Wingspan 70 mm and fore wing length 36–38 mm. Both pairs of wings with undulate outer margin, ground colour dark yellow with weak greenish tint to grass-green; cilia brownish in both wings. Forewings with brownish, weakly toothed medial fasciae, distinctly curved basally on R-branch, dark ellipsoid discal spot with narrow yellowish to whitish central eye. External fascia presents as an irregular row of brownish spots and outer field of margin with dense covering of brownish scales and large anal brownish spot is also typical. Hindwings slightly darker, with zigzag curved medial and brown external fascia, anal corner with admixture of brown scales. Antennae dark yellow, bipectinated with short rami; thorax dark greenish-yellow with brownish patagia and abdomen cream-yellowish. Apex of abdomen bears pillow of cream-yellow, long, protruded hair-like scales.

Male genitalia (Figs 40, 41). Tegumen with a pair of serrate appendages, with small but protruded caudal tooth. Dorsal processes of valva long, strongly curved, pointed at apex; ventral lobe rather long, of typical for the genus echinoids appearance. Aedeagus relatively short, slender, curved distally and pointed at apex.

Female genitalia. Not studied.

Diagnosis. Female pattern and coloration make the species indistinguishable. Males are similar on some related species (*niphanae* Owada & Kishida, 1989, or *pinratanai* Zolt., 2005) and externally can be hardly separated. In male genitalia shape of tergal appendages and slender pointed aedeagus are characteristic.

Geographical range. The species is known only from Laos so far.

Etymology. The species is named after Inga Ihle, who supported her man Siegfried in many ways during his entomological research for many years.

Taxonomical remarks. A female is designated as the holotype of the species because of in the case specific belonging can be established much easier after females due unique coloration and wing pattern.

****Crinocraspeda torrida* (Moore, 1879)**

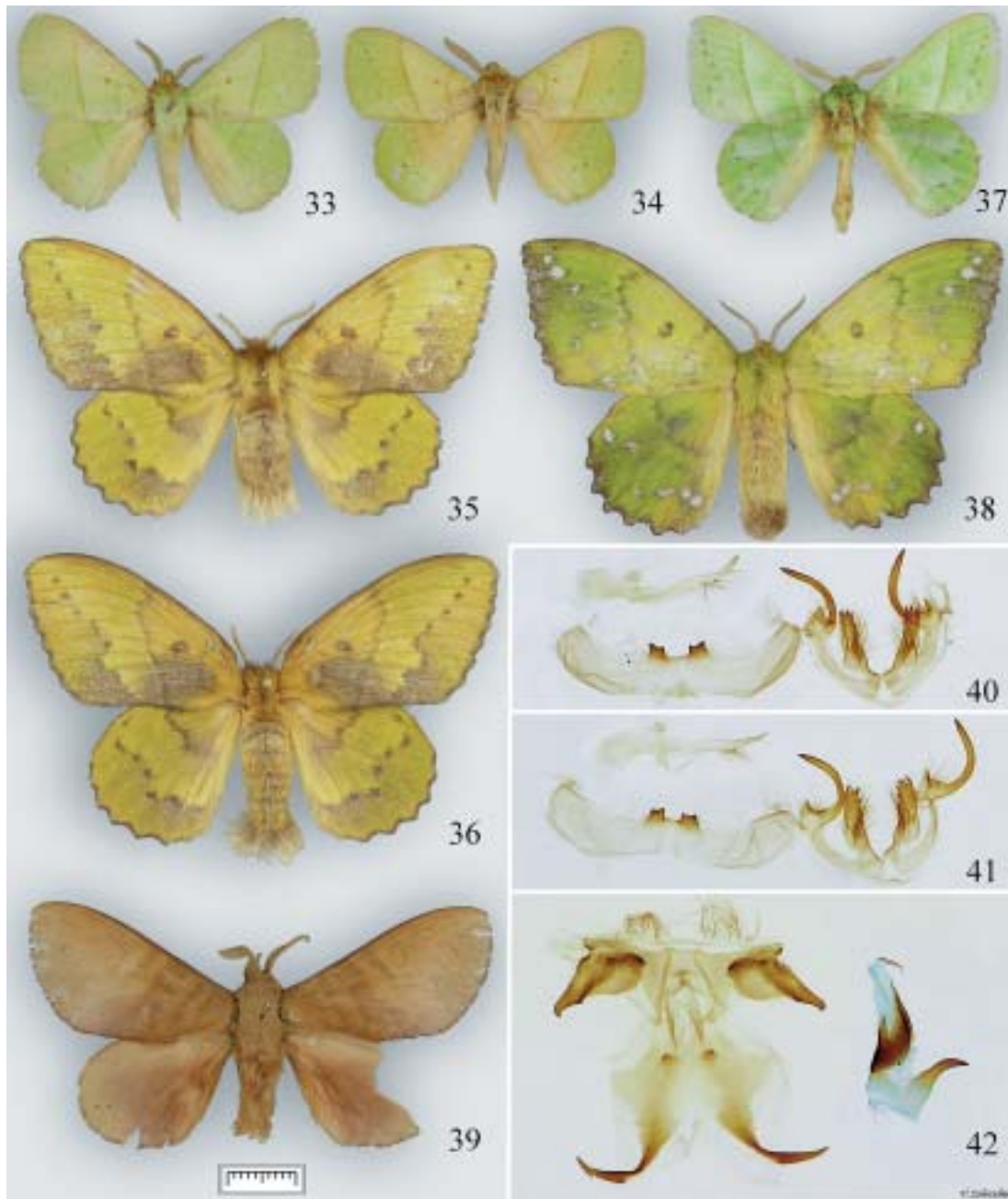
Gastropacha torrida Moore, 1879, in Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr. W. S. Atkinson* (1): 76, pl. 3, fig. 19. Type locality: India, Darjeeling. Type: male (ZMHU).

Material. 3 ♀, Laos, Phou Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF).

Geographical range. Northern and central India, Myanmar, Nepal, southern China, northern Thailand, Laos, northern Vietnam.

***Dendrolimus grisea* (Moore, 1879)**

Chatra grisea Moore, 1879, in Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr W. S. Atkinson* (1): 80. Type locality: Northern India, Khasia Hills. Lectotypus: male (BMNH).



Figs 33–36. *Trabala inga* sp. nov., adults. 33: male paratype, Laos, Ban Viang Kham, 15 km S of Phou Khoun, 950 m, eIII 2004, leg. Th. Ihle (ZFMK); 34: male paratype, Laos, Ban Viang Kham, 15 km S of Phou Khoun, 950 m, eII 2004, leg. Th. Ihle (ZFMK); 35: female holotype, Laos, Ban Viang Kham, 15 km S of Phou Khoun, 950 m, eIII 2004, leg. Th. Ihle (ZFMK); 36: female paratype, Laos, Ban Viang Kham, 15 km südl. von Phou Khoun, 950 m, Ende III 2004, leg. Th. Ihle (CSIF). Figs 37–38. *Trabala shiva*. 37: male, Borneo S., Prov. Sabah, Mt. Trus Madi bei Apin Apin, 1080 m, 21.III-12.IV 2006, leg. K. Martini (MWM); 38: female, Laos, Ban Viang Kham, 15 km S Phou Khoun, 950 m, Ende III 2004, leg. Th. Ihle (CSIF). Fig. 39. *Kunugia labahingra* Zolt., male holotype (CAHU). Figs 40–41. *Trabala inga* sp. nov., male genitalia, paratypes (ZFMK). Fig. 42. *Kunugia labahingra* Zolt., male genitalia of the holotype (CAHU).

References. Zolotuhin & Pinratana, 2005: 57.

Material. 6 ♂, Laos, Phou Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF); 2 ♀, N. Laos, Xiengkhouang, 20.IX 1995 (CMSW).

Geographical range. Northern and north-eastern India, southern and south-eastern China, northern Thailand, northern Laos and northern Vietnam.

The species was reared by S. Ihle. On October 24th, 2005, from Laos, Phou Fa, Phongsali, 1650m, a female together with 30 eggs was received. On October 29th, 16 little caterpillars hatched out of the eggs. They were very lively and started running around excitedly immediately after having hatched out, they began to eat only 2 days later on Pinaceae (pine). On November 12th, they moulted for the first time.

From own personal experience (S. Ihle), I know that not always all of the young caterpillars start eating, you often have to reckon with losses. But breeding usually goes on without problems after the first moulting.

The mature caterpillar (Figs 2, 3) has a length of 90 to 110 mm. The main colour is black, along the dorso-lateral stripe there is a yellowish line with red marks now and then. Along the back, on each segment, there are long, black tufts of hair standing erect, at the ventro-lateral stripe there are pure white tufts of hair sloping downwards. Between the second and third thoracic segments there are white tufts of hair which stand out in case of arousal, the head is dark, showing short, grey hair.

The caterpillars were mature after about 10 weeks, by mid January 2006, they fed almost continuously also during daytime. The cask-like, dense cocoon consists of light-yellow silk, the cocoon showing black, pricking hair all over (Fig. 4). Pupal stage lasted about 6 weeks, after hatching moths copulated that same night (Fig. 5).

****Kunugia placida*** (Moore, 1879)

Lebeda placida Moore, 1879, *Descr. new Indian lepid. insects Colln late Mr. Atkinson*: 80. Type locality: Northern India, Darjeeling. Holotype: male (BMNH).

Material. 2 ♀, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 5.II 2005, leg. Th. Ihle (CSIF).

Geographical range. India, southern China, Thailand, Laos, Vietnam, Peninsular Malaysia.

****Kunugia ampla*** (Walker, 1855)

Odenestis [sic!] *ampla* Walker, *List Lepid. Heterocera Colln Br. Mus.* 6: 1412. Type locality: [east Pakistan] Sylhet. Syntype: female (BMNH).

Material. 3 ♀, Laos, Prov. Luang **Phrabang**, Phou Khoun, 1500 m, 5.X 2005, leg. Th. Ihle (CSIF).

Geographical range. India, southern China, Thailand, Laos, Vietnam, Peninsular Malaysia.

The species was reared by S. Ihle. On October 24th, 2005, from Laos, Phou Fa, Phongsali, 1650m, a female together with 20 laid eggs was received. On October 30th, only 3 little caterpillars hatched out.

The caterpillars grew very slowly; they lived hidden away and would only feed at night. During the day they used to hide in the dark at the bottom of the breeding container.

They were fed with *Quercus* (oak), they did not accept any other plants for food.

In September 2006 two caterpillars were still alive, mature, with a length of 70 mm, but they had not yet pupated, and then died.

The mature caterpillar (Figs 6, 7) has a length of 70 to 80 mm. The main colour is black-brown, the whole body showing brown and black hair, at the ends of which white hair scales can be seen.

At the spiracles there is a distinct light line. The groove of the abdominal segments stand out in velvet black, and there are shaggy blue tufts of hair. The striking head is black, and a light line can be seen in the middle of the head, the line broadening towards the mandibles. On both sides of the black

abdomen there is a light line resembling the markings of the head.

****Kunugia latipennis*** (Walker, 1855)

Lebeda latipennis Walker, 1855, *List spec. Lepid. Insects Colln Brit. Mus.* **6**: 1457. Type locality: Northern India.
Type: male (BMNH).

Material. 4 ♂, Laos, Prov. Luang Prabang, Phou Khoun, 1500 m, 5.IX 2004, leg. Th. Ihle (CSIF).

Geographical range. India, Nepal, southern China, Thailand, Laos, Vietnam, Myanmar, Sumatra, Borneo, Palawan.

Kunugia siamka Zolotuhin, 2002

Kunugia siamka Zolotuhin, 2002, *Ent. Z.* **112**: 138, figs 8, 12. Type locality: Thailand, Chiang Mai, Doi Phahompok, 25 km NW of Fang, 2100 m. Holotype: male (MWM).

References. Zolotuhin & Pinratana, 2005: 66.

Material. 3 ♂, Laos, Phu Fa, Phongsali, 1650 m, 25.X 2004, leg. Th. Ihle (CSIF); 3 ♀, Prov. Phu Fa, Phongsali City, 21°44'N, 102°11'E, 1650 m, 10-18.XII 2004, leg. Th. Ihle (ZFMK).

Geographical range. Northern Thailand, Laos, Malaysia.

****Kunugia florimaculata*** (Tsai & Hou, 1983)

Cyclophragma florimaculata Tsai & Hou, 1983, *Acta zootaxonomica Sinica* **8** (3): 293, figs 4, 9-10. Type locality: [China] Yunnan, Xishuangbanna, 22°N 101°E. Holotype: male (Zool. Inst. Beijing).

Material. 8 ♂, Laos, Phou Fa, Phongsali, 1650 m, 25.X.2004, leg. Th. Ihle (CSIF); 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 1 ♀, the same locality, late III 2004, leg. Th. Ihle (ZFMK).

Geographical range. North-eastern India (Assam), southern China, Thailand, Laos, Peninsular Malaysia and Sumatra.

Biology. The species was reared by S. Ihle. On October 30th, 22 little caterpillars hatched out of the eggs taken from a female from Laos, Phou Fa, Phongsali, 1650 m. The eggs (Fig. 8) have the shape of a slightly flattened ball; the main colour is red-brown, with three irregular white lines around the eggs. The caterpillars hatched (Fig. 9) were very lively and started running around excitedly immediately after having hatched out, they began to feed only 2 days later. They were fed with *Quercus pseudoturmeri* (evergreen oak), the caterpillars grew slowly, and on November 15th, they moulted for the first time. Breeding took place in a glass container at +23°Celsius, in the container there were branches of oak standing in water. After the first moulting there were 19 caterpillars left (Fig. 10). Further breeding in a cage of gauze went on without losses. By December 25th, 2005, the caterpillars had reached a length of 60 to 90 mm.

The larvae would only eat at night, during daylight they were sitting motionless at the branches. The long hair sticking out laterally were put around the branch, so that the contours became blurred which effected a very good camouflage.

The mature caterpillar (Figs 11, 12) has a length of 90 to 105 mm. The main colour of the caterpillar is a mottled brown-grey, what is striking are the long tufts of hair sticking out laterally at the thoracic legs and the prolegs on abdominal segments. Between the second and the third thoracic segments there are red-brown tufts which stand out in case of arousal. On the second abdominal segment the lateral tufts of hair are white with white scales at the end, the other tufts show brown and black hair with brown scales at the end.

By mid January 2006 the caterpillars had reached a length of 100 to 120 mm and started pupating. The caterpillars stay at the branches when they pupate, they do not go to the bottom of the cage in order to pupate. They make a light-yellow cocoon which is almost round and large-meshed. Pupal stage lasted 22 to 27 days, the moths hatched out at dusk.

The female of the species is firstly described here and figured (Fig. 13). The species has distinct sexual dimorphism but mostly in size where female much larger (wingspan 117 mm and forewing length 54 mm) and more robust. They are somewhat lighter than males but with corresponding

colour saturation and wing pattern; pattern elements a bit more vague and smoother than in males. Forewings of the female with pointed not rounded apex.

****Kunugia lemeepauli*** (Lemee & Tams, 1950)

Metanastria Lemee-Pauli Lemee & Tams, 1950, *Contr. Et. Lepid. Ht Tonkin*, Saigon: 35, fig. 6. Type locality: Haut Tonkin, Backan. Holotype: male (MNHNP).

Material. 4 ♂, Laos, Phu Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF); 2 ♀, Laos Ban Hin Ngon, Xam Nua 1000 m, 18.IX 2003, leg. Th. Ihle (CSIF); 2 ♂, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late III 2004, leg. Th. Ihle (ZFMK).

Geographical range. Northern Thailand, Laos, Vietnam and southern China.

****Kunugia lineata*** (Moore, 1879)

Lebeda lineata Moore, 1879, in Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr W. S. Atkinson* (1): 81. Type locality: India, Darjeeling. Lectotype: male (ZMHU).

Material. 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Geographical range. Northern India, Nepal, southern China, northern Thailand, Laos and northern Vietnam.

****Kunugia falco*** Zolotuhun, 2002

Kunugia falco Zolotuhun, 2002, *Ent. Z.* **112**: 138, figs 7, 11. Type locality: Thailand, Chiang Mai, Doi Pha Hom Pok, 18 km NW of Fang, 2100 m. Holotype: male (MWM).

Material. 1 ♂, Laos, Phu Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF); 3 ♀, Laos, Phu Fa, Pongsali, 1650 m, 14-17.II 2006 ex ovo S. Ihle (CSIF).

Geographical range. Laos, Thailand.

Biology. The species was reared by S. Ihle from the eggs (30 pieces) obtained with a native female on October 24th, 2005, from Laos, Phu Fa, Phongsali, 1650 m. In 2 days, on October 26th, 2005, 20 little caterpillars hatched out. They were fed with *Pinus nigra*, *Pyracantha coccinea* and *Quercus pseudoturneri* in a glass container. For 3 days the hatched larvae moved around restlessly without taking any food, however, they sucked small drops of water. On the third day only 5 caterpillars were alive, and they began to eat *Quercus*. On November 10th 2005, the caterpillars moulted for the first time after having been inactive for 3 days.

The feeding with *Quercus* was continued at 23°C room temperature, keeping the larvae in a cage of gauze there were little branches of oak standing in water. The larvae would only eat at night and hid at the bottom of the cage during the day.

The mature caterpillars (Figs 14–16) are between 50 and 65 mm long. In contrast to the other *Kunugia* species, this caterpillar is characterized by its dense strands of hair. Its main colour is reddish-brown. There are short, cream-coloured tufts along its back, which on both sides of the ventro-lateral stripe are edged by longer, intensely blue shaggy tufts. At each segment and on both sides there are long, dirty-white hairscales between the ventro-lateral stripe and the legs. The head is dark brown, with two distinct light-brown lines going over the head capsule to the mandibles.

The caterpillars pupated between January 22nd and 26th 2006, between leaves at the bottom of the cage, in a close-meshed and dense cocoon of a shape of half a ball with almost smooth, dark brown surface. The pupal stage lasts for about 20 days; the moths hatched out between February 14th and 17th 2006, at dusk.

The female of the species is figured here (Fig. 17). This breeding made possible to correct an identification in our recent monography (Zolotuhin & Pinratana, 2005). The female figured there on the plate 10, fig. 5 as *Kunugia burmensis* (Gaede) really should be *K. falco*. Both species could be separated by coloration of dorsal (anal) spot on the fore wing. It is whitish to light ash-grey in *K. falco* but much darker, brownish-yellow in *K. burmensis*. A colour of light ternal spot limited by external line is also of the same saturation.

Kunugia divaricata (Moore, 1884)

Gastropacha divaricata Moore, 1884, *Trans. ent. Soc. Lond.* **3**: 374. Type locality: [India] Darjiling. Holotype: female (BMNH).

References. Zolotuhin & Pinratana, 2005: 77.

Material. 2 ♂, Laos, Prov. Vientiane, Ban Viang Khan, Phu Khoun, 950 m, 12.IV 2005, leg. Th. Ihle (CSIF); 3 ♂, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 3 ♂, the same locality, late III 2004, leg. Th. Ihle (ZFMK); 4 ♂, the same locality, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. Central and southern China, India, Nepal, Myanmar, Thailand, Laos, Vietnam, Peninsular Malaysia.

Kunugia labahingra Zolotuhin, **sp. nov.**

Holotype: ♂, Laos, Ban Hin Ngon, 15 km südwestlich vom Xam Nua, 1000 m, 11-18.IX 2002, Lichtfang, leg. Thomas Ihle, coll. Siegfried Ihle (GU 2004-03) (coll. CAHU).

Male (Fig. 39). Wingspan 62 mm, length of the fore wing 31 mm. Typical member of *quadrilineata* Holloway, 1987-group with the same characters of wing coloration and pattern. Both pairs of wings dark sandy-rosy, the hind one more reddish. Forewings with four darker transversal bands grouped to basal part of wing.

Male genitalia (Fig. 42). Strong with powerful valvae. Tegumen narrow, vinculum flattened. Valvae pyramid-like, with curved apex, additional basal lobe and longitudinal inner keel. Distal processes of vinculum flattened basally but narrow awl-shaped in distal half; two small but distinct sclerotized lumps in subbasal zone of vinculum. Aedeagus short, with distinct, slightly curved apical spur, distinct sclerotized tube of irregular shape at the base of the vesica; two fine elastic cornuti situated on the top of vesica.

Female. Unknown.

Diagnosis. Closely related to *K. grjukovae* Zolt., 2005, but differs in stronger valvar constructions and presence of 2 cornuti on vesica (lacking any in *grjukovae*).

Geographical range. The species is known only from Laos so far.

Etymology. The name is in some sense toponymical originating from its type locality as **Laos, Ban Hin Ngon**.

Streblote igniflua (Moore, [1883])

Taragama igniflua Moore, 1882-1883, *Lep. Ceylon* **2**: 147, pl. 142, figs 2, 2a. Type locality: [Ceylon] Sri-Lanka. Type: male (BMNH).

References. Zolotuhin & Pinratana, 2005: 89.

Material. 1 ♂, Laos, Prov. Luang Prabang, Phou Khoun, 1500 m, 18.II 2005, leg. Th. Ihle (CSIF); 1 ♂, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, XI 2003, leg. Th. Ihle (CSIF); 3 ♂, Laos, Phou Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF).

Geographical range. India, Sri-Lanka, Nepal, northern Vietnam, southern China, Laos, ?northern Thailand.

Biology. The species was reared by S. Ihle in captivity. A female with about 200 laid eggs was received on October 24th, 2005 from Laos, Phou Fa, Phongsali, 1650 m. On October 30th little caterpillars hatched out. A few hours later they started eating and were fed with Rosaceae (different sorts of roses), later also with *Rubus fruticosus* (blackberry). Breeding took place in plastic containers with sufficient airing, at +23°C.

The larvae seemed quite sociable (Fig. 18) and took food also at daytime. They would gather regularly and then would sit closely to each other. They covered the neighbourhood of their common

seats, i.e. branches and leaves, with a white cobweb. On November 11th, 2005, they moulted for the first time. By end of December most of the larvae were mature and the first ones started pupating.

The mature caterpillar (Fig. 20) has a length from 60 to 70 mm. The caterpillars are strikingly beautiful, multi-coloured, showing various markings and colours. Their ground colour varies from yellow-orange to yellow-brown, abdominal segments with two red, button-like warts on each segment dorsally, standing opposite each other. The red warts are linked with crossing black lines, the lines forming a rhombus-like pattern. Between the second and third thoracic segments there are bright blue tufts, which stand out in case of arousal. These blue tufts are edged by red and black hair. There is a big button-like wart on the 8th abdominal segment with black and blue hair. Along the ventro-lateral stripe there are grey-white tufts standing sloping down wards. The larvae pupated on a dense, brown, spindle-like cocoon with black pricking hair. The cocoon (Fig. 21) had been completed very quickly, in only two hours. Pupal stage lasts between 18 and 23 days.

Pyrosis rotundipennis (de Joannis, 1929)

Bhima rotundipennis de Joannis, 1929, *Ann. Soc. ent. Fr.* **48**: 565. Type locality: [northern Vietnam, Tonkin] Cha pa. Holotypus: male (MNHNP).

References. Zolotuhin & Pinratana, 2005: 91.

Material. 3 ♂, Laos, Phou Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF); 1 ♀, N. Laos, Xiengkhouang, 20.IX 1995 (CMSW); 1 ♀, Laos, Xam Neua, 1.IX 1999 (NSMT).

Geographical range. Northern India, southern China (Yunnan, Sichuan), Myanmar, northern Thailand, northern Vietnam, Laos.

Biology. The species was reared by S. Ihle. On October 24th, 2005, from Laos, Phou Fa, Phôngsali, 1650 m, about 400 eggs were obtained. All eggs were thoroughly covered with the grey abdominal wool of the female.

On November 6th, caterpillars hatched out of the eggs. After hatching the caterpillars were running around for 2 to 3 hours, after that they gathered, forming large communities (mirrors – Fig. 23), they started feeding only on the second day and were fed with *Quercus pseudoturneri* (evergreen oak). When in state of restlessness all caterpillars erected their heads and the fore part of a body upright into the air, creating a completely different optical impression for the viewer. Was that behaviour a sort of camouflage in the face of an enemy? After the first moulting this interesting behaviour could not be noticed any more.

Breeding took place at +23°C in a glass container with oak branches standing in water and was limited to 40 caterpillars. The caterpillars fed at dusk, feeding started with hectic running around, after a short time they went near the food and started eating. The whole process did never last more than an hour, and then the caterpillars gathered and kept close to each other. The hair of the caterpillars sting and leave enflamed and burning spots on the skin when being touched.

Growth of the caterpillars went on very slowly, on December 25th, 2005, they had reached a length of 25 mm and were in the L2 stage. The first moulting had lasted for 5 days. Further breeding went on very slowly, but there were no losses. Only after being adult in September 2006 a number of the caterpillars died. Three of them had survived and started cocooning on October 1st, 2006. Pupal stage lasted for 18 to 22 days. On October 30th and November 1st, 2006, the imagoes hatched out, after a period of breeding of one year!

The main colour of the caterpillar (Figs 24, 25) is brown, showing irregular white lines; the body is densely covered with white hair. There are especially long white hair of up to 10 mm length on the thoracic segments and on the abdominal segments. Along the back there are six dense white tufts of hair. The head is dark-brown, with a significant rhombus-like dirty-white marking, going in the middle of the head from the mandibles to the neck. This marking is edged on both sides by intense stripes and light white splotches.

****Lebeda nobilis*** Walker, 1855

Lebeda nobilis Walker, 1855, *List. Spec. lepid. Insecta Colln Br. Mus.* **6**: 1456. Type locality: Nepal and Silhet.

Syntypes: male and female (BMNH).

Material. 3 ♂, Laos, Phou Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF); 4 ♀, Prov. Luang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Geographical range. India, Nepal, northern Thailand (ssp. *nobilis* Walker, 1855), central and southern China, northern Vietnam, Laos (ssp. *sinina* Lajonquière, 1979), Taiwan (undescribed ssp.), Laos, Peninsular Malaysia, Sumatra (ssp. *sumatrana* Tams, 1935), Java (ssp. *malaccana* Tams, 1935).

****Lebeda trifascia*** (Walker, 1855)

Lasiocampa trifascia Walker, 1855, *List. Lep. Heterocera Brit. Mus.* 6: 1439. Type locality: Northern Bengal. Type: male (BMNH).

Material. 3 ♂, Laos, Prov. Luang Prabang, Phou Khoun, 1500 m, 18.IX 2004, leg. Th. Ihle (CSIF); 3 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late III 2004, leg. Th. Ihle (ZFMK).

Geographical range. India, Nepal, southern China, northern Vietnam, Laos, northern Thailand, Myanmar.

****Paralebeda plagifera*** (Walker, 1855)

Lebeda plagifera Walker, 1855, *List. Specim. lepid. Insects Colln Brit. Mus.* 6: 1459. Type locality: Nepal. Holotype: female (BMNH).

Material. 1 ♂, Prov. Vientiane, Ban Viang Kham, 15 km S Phou Khoun, 950 m, mid VIII 2004, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Vientiane, Ban Viang Kham, 15 km S Phou Khoun, 950 m, mid VII 2004, leg. Th. Ihle (ZFMK); 1 ♂, Prov. Vientiane, Ban Viang Kham, 15 km S Phou Khoun, 950 m, mid VI 2004, leg. Th. Ihle (ZFMK); 11 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 4 ♂, the same locality, late III 2004, leg. Th. Ihle (ZFMK); 2 ♀, the same locality, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. From northern and central India, Nepal and Bhutan to southern and south-eastern China, northern Myanmar, Laos, northern Thailand and northern Vietnam.

****Suana concolor*** (Walker, 1855)

Lebeda concolor Walker, 1855, *List Specimens lepid. Insects Colln Br. Mus.* 6: 1463. Type locality: North India, Silhet. Type: male (BMNH).

Material. 1 ♀, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, XI 2003, leg. Th. Ihle (CSIF).

Geographical range. India, Sri Lanka, Myanmar, southern China, Thailand, Laos, Vietnam, Malaysia, Philippines, Sumatra, Borneo, Java.

****Metanastria hyrtaca*** (Cramer, 1779)

Phalaena (Bombyx) hyrtaca Cramer, 1779, *Uitlandsche Kapellen (Papillons exot.)* 3: 97, pl. 249 F. Type locality: stated to be Surinam; this was an error for *Phalaena hyrtaca* is not known from the New World, but occurs in oriental region. Types: not found.

Material. 6 ♂, Laos, Phou Fa, Pongsali, 1650 m, 25.X 2005, leg. Th. Ihle (CSIF); 10 ♀, Prov. Louang Prabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK); 25 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 15 ♂, the same locality, late III 2004, leg. Th. Ihle (ZFMK); 6 ♀, the same locality, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. China, Taiwan, India, Nepal, Myanmar, Thailand, Laos, Vietnam, Malaysia, Sumatra, Borneo.

Metanastria capucina Zolotuhin & Witt, 2000

Metanastria capucina Zolotuhin & Witt, 2000, *Entomofauna Suppl.* 11: 82, fig. 21, pl. 12, fig. 63, 64. Type locality: northern Vietnam, Mt. Fan-si-pan, west side, Cha-pa, 1000-1800 m. Holotype: male (MWM).

Metanastria capucina purgata Zolotuhin, 2005

Metanastris capucina purgata Zolotuhin, 2005, in Zolotuhin & Pinratana, 2005, *Moths Thailand* **4**: 100, pl. 14, figs 8, 9, 12. Type locality: Thailand, Chiang Mai, 20 km NW of Mae Ai, 1650 m. Holotype: male (MWM).

References. Zolotuhin & Pinratana, 2005: 101.

Material. 2 ♂, Northern Laos, Phou Fa, Pongsali-City, 1650 m, 10.X 2004, leg. Th. Ihle (CSIF); Male, Laos, Luang Prabang, VII 1996 (CMSW).

Geographical range. Northern Vietnam, southern China (ssp. *capucina* Zolt. & Witt, 2000), northern Thailand, Myanmar (Tenasserim) and Laos (ssp. *purgata* Zolt., 2005).

**Metanastris asteria* Zolotuhin, 2005

Metanastris asteria Zolotuhin, 2005, in Zolotuhin & Pinratana, 2005, *Moths Thailand* **4**: 101, pl. 14, figs 10, 11. Type locality: [Thailand] Suan Shan, Chanthaburi. Holotype: male (coll. CBAP).

Material. Male, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 20.II 2004, leg. Th. Ihle (CSIF).

Geographical range. Laos, southern Thailand (Chanthaburi, Kanchanaburi), southern China (Yunnan) and northern Malaysia (Penang). First observation from Laos.

Gastropacha horishana Matsumura, 1927

Gastropacha horishana Matsumura, 1927, *J. Colln Agric. Hokk. Imp. Univ.* **19**: 21, pl. 2, fig. 14. Type locality: [Taiwan] Formosa, Horisha.

Gastropacha horishana egregia Zolotuhin, 2005

Gastropacha horishana egregia Zolotuhin, 2005, *Tinea* **18** (4): 300, figs 14, 15; figs 14, 15, 36. Type locality: China, WuyShan, Jiangxi-Fujian border, 50 km SE of Yingtan, 27°56'N, 117°25'E, 1600 m. Holotype: male, (MWM).

Material. Female, paratype, Laos, Ban Viang Kham, 15 km S von Phou Khoun, 950 m, late XI 2003, Lichtfang, leg. Th. Ihle (CSIF).

Geographical range. China (Jiangxi, Fujian, Hubei), northern Vietnam, Laos.

**Gastropacha xenapates* Tams, 1935

Gastropacha xenapates Tams, 1935, *Mem. Mus. Royal Hist. Nat. Belgique* **4** (12): 52, pl. III fig. 3, textfig. 4, 5. Type locality: Northern India, Darjiling. Holotype: male (BMNH).

Material. 2 ♂, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 20.XI 2004, leg. Th. Ihle (CSIF); 1 ♂, Laos, Ban Viang Kham, 15 km S Phou Khun, 950 m, end XI 2003, leg. Th. Ihle (ZFMK); 1 ♂, Laos, Ban Hin Ngon, 15 km SW Xam Nua, 1000 m, 18.IX 2002, leg. Th. Ihle (CSIF); 1 ♂, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 1 ♂, the same locality, late III 2004, leg. Th. Ihle (ZFMK).

Geographical range. India, Nepal, southern China, Myanmar, Thailand, Laos, Vietnam.

**Gastropacha philippinensis* Tams, 1935

Gastropacha pardale philippinensis Tams, 1935, *Mem. Mus. Royal Hist. Nat. Belgique* **4** (12): 51, pl. III, fig. 9. Type locality: Philippines, Luzon, subprov. Benguet, Klondyke. Holotype: male (BMNH).

Gastropacha philippinensis swanni Tams, 1935

Gastropacha pardale swanni Tams, 1935, *Mem. Mus. Royal Hist. Nat. Belgique* **4** (12): 52, textfig. 3. Locus typicus: Upper Burma, Htawgaw. Holotype: male (BMNH).

Material. 2 ♂, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 20.XI 2004, leg. Th. Ihle (CSIF).

Geographical range. Pakistan, India, Nepal, southern China, Thailand, Laos, Vietnam, Myanmar, Philippinen, Borneo, Sumatra, the Andaman Is.

**Gastropacha pardale* (Walker, 1855)

Megasoma pardale Walker, 1855, *List. Spec. Lepid. Insects Colln Brit. Mus.* **4**: 1453. Type locality: Java. Holotype: male (BMNH).

***Gastropacha pardale sinensis* Tams, 1935**

Gastropacha pardale sinensis Tams, 1935, *Mem. Mus. Royal Hist. Nat. Belgique* 4: 50. Locus typicus: southern China. Holotype: male (BMNH).

Material. 6 ♂, Laos, Phou Fa, Pongsali, 1650 m, 25.X 2005 (ex ovo by S. Ihle), leg. Th. Ihle (CSIF).

Geographical range. Pakistan, India (also southern), Nepal, southern China, ?Taiwan, Thailand, Laos, Vietnam, Malaysia, Java, Sumatra.

Biology. The species was reared by S. Ihle. On October 30th, 2005, little caterpillars hatched out of the eggs laid by a female obtained from Laos, Phou Fa, Phongsali, 1650 m. A few hours later they started eating on *Pyracantha coccinea* (firethorn). Breeding in plastic containers with sufficient airing at + 23°C went on without problems, the caterpillars growing well.

The mature caterpillar (Figs 26, 27) has a length of 45 to 60 mm. The main colour is reddish-brown, with irregular black lines. Along the back there are rather big blue spots in which four small red button-like warts can be seen.

Between the second and third thoracic segments there are black tufts, which stand out in case of arousal, the tufts being edged by white hair scales. On the abdominal segment there is a big, button-like wart showing black and white hair. The head is light-brown with fine dark-brown spots, at the right and the left side of the head there are long tufts standing sloping downwards. The larvae pupated in a dirty-white cocoon which had the shape of a pear, some of the cocoons had black hair at the outside. They started pupating already on December 20th. The first ones to pupate were the males, being distinctly smaller than the females. The pupal stage is very short; the moths (Fig. 28) hatched already 12 days later.

***Syrastrena malaccana* Tams, 1935**

Syrastrena minor malaccana Tams, 1935, *Mem. Mus. Royal Hist. Nat. Belgique* 4 (12): 47, pl. 4, figs 5, 6. Type locality: [Malaysia] Malacca, Frasier Hills. Holotype: male (RBIN).

References. Zolotuhin & Pinratana, 2005: 111.

Material. Male, Laos, Phu Soai Dao, 1250 m, VI 1996, leg. Steinke & Lehmann (MWM); 3 ♂, Prov. Luang Prabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 28.VIII 2004, leg. Th. Ihle (CSIF); 1 ♀, Ban Viang Kham, 15 km S Phou Khoun, 950 m, end XI 2003, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Geographical range. Peninsular Malaysia, Vietnam, Thailand, Laos, Myanmar.

****Radhica elisabethae* de Lajonquière, 1977**

Radhica elisabethae de Lajonquière, 1977, *Bull. Soc. ent. Fr.* 82: 186, pl. 2 M, fig. 10. Type locality: north-eastern Sumatra, Dolok Merangir, 180 m. Holotype: male (SMNK).

Material. 6 ♂, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 28.VIII 2004, leg. Th. Ihle (CSIF); 2 ♀, Prov. Louang Prabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK); 2 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK); 7 ♀, the same locality, late III 2004, leg. Th. Ihle (ZFMK); 3 ♀, the same locality, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. Sumatra, Borneo, Bali, the Philippines (Palawan), Peninsular Malaysia, Thailand, Laos, Vietnam, Myanmar, southern China, India.

****Arguda vinata* Moore, 1865**

Arguda vinata Moore, *Proc. zool. Soc. Lond.* 1865: 820. Type locality: Sikkim, Darjeeling. Type: male (BMNH).

***Arguda vinata nepalina* Kishida, 1992**

Arguda nepalina Kishida, 1992, *Moths Nepal* 1 (*Tinea* 13 Suppl. 2): 77, fig. 55; pl. 20, fig. 3. Type locality: Nepal, Godavari. Holotype: male (NSMT).

Material. 1 ♀, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 28.VIII 2004, leg. Th.

Ihle (CSIF); 2 ♀, Prov. Louang Prabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Phu Fa, Phongsali City, 21°44'N, 102°11'E, 1650 m, 10-18.XII 2004, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late III 2004, leg. Th. Ihle (ZFMK).

Geographical range. North-eastern India (Sikkim, higher altitudes), Nepal (ssp. *vinata*); north-eastern India (Sikkim, lower altitudes), Nepal, southern China (Yunnan, Sichuan, also Shaanxi), Myanmar, Thailand, Laos, northern Vietnam, Malaysia (ssp. *nepalina*).

The species was reared by S. Ihle. A female together with 15 laid eggs was received on April 10th, 2005, from Northern Thailand, Chiang Mai, Doi Pha Hom Pok, Mae Ai, 2050 m.

On April 14th the caterpillars hatched out, they started feeding the next day on with *Malus* (apple), but probably they accept also other sorts of fruit trees. 12 days later they had moulted for the first time for 2 days (Fig. 29).

The mature caterpillar (Figs 30, 31) has a length of 40 to 50 mm, its colour is a mottled white grey, with irregular black lines. Along the back there are short black hairs, on each segment there are two reddish, button-like warts, and on segment 2 and 6 there is a line with a dark pattern as a marking. Between the second and third thoracic segments there are blue-black tufts of hair which stand out in case of arousal, these tufts being edged by white hair scales. Along the body there are white, long tufts of hair standing sloping downwards. During times of rest these hairs are put round the branches in a perfect manner so that the contours of the body become blurred, as a result of its look the caterpillar has an especially good way of camouflage at its disposal. The head is dirty-white with unobtrusive dark marking, at both sides of the head there are white tufts of hair which bend inwards and show white hair scales at the ends.

The caterpillars grew well. By end of May 2005 they were mature and started pupating, taking place in a slack cocoon between leaves and branches. The pupal stage was very short, the moths hatched already after 13 days (Fig. 32). Breeding lasted altogether from April 14th to June 14th.

****Arguda tayana* Zolotuhin & Witt, 2000**

Arguda tayana Zolotuhin & Witt, 2000, *Entomofauna Suppl.* 11: 96, fig. 26, pl. 13, fig. 75. Type locality: Vietnam sept., Plato TayNgyuen, Mt. NgocLinh, 900-1400 m., 15°02'N, 107°59'E. Holotype: male (MWM).

Material. 1 ♀, Northern Laos, Phou Fa, Phongsali-City, 1650 m, 21.X 2005, leg. Th. Ihle (CSIF).

Geographical range. Vietnam, Laos, Thailand and southern China (Jiangxi).

****Arguda decurtata* Moore, 1879**

Arguda decurtata Moore, 1879, *Descr. new Indian lepid. insects Colln late Mr. Atkinson*: 80. Type locality: Northern India, Darjeeling. Holotype: male (BMNH).

Material. 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late III 2004, leg. Th. Ihle (ZFMK); 1 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. Northern and north-eastern India, southern China Vietnam, Laos, northern Thailand and Sumatra.

****Arguda sandrae* Zwick, 1998**

Arguda sandrae Zwick, 1998, *Nachr. ent. Ver. Apollo Suppl.* 17, 442, figs 1, 3. Type locality: Palawan, Irawan (outsirt of Puerto Princessa City). Holotype: male (coll. A. Zwick).

***Arguda sandrae boica* Zolotuhin, 2005**

Arguda sandrae boica Zolotuhin, 2005, in Zolotuhin & Pinratana, 2005, *Moths Thailand* 4: 123, figs 18 B, 19 C; pl. 18, fig. 11. Type locality: Thailand, Chiang Mai, 4 km SE of Pang Faen, 1100 m. Holotype: male (MWM).

Material. 2 ♀, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late XI 2003, leg. Th. Ihle (ZFMK).

Geographical range. Laos, Northern Thailand, southern China (Yunnan) (ssp. *boica* Zolt.); Palawan (ssp. *sandrae* Zwick).

****Odontocraspis hasora* Swinhoe, 1894**

Odontocraspis hasora Swinhoe, 1894, *Ann. Mag. Nat. Hist.* **14** (6): 439. Type locality: [India] Shillong. Lectotype: male (BMNH).

Material. 1 ♂, Northern Laos, Phou Fa, Pongsali-City, 1650 m, 21.X 2005, leg. Th. Ihle (CSIF).

Geographical range. Northern India, southern China, Myanmar, northern Thailand, Laos, northern Vietnam, Peninsular Malaysia, Borneo, Sumatra.

****Odonestis erectilinea* (Swinhoe, 1904)**

Arguda erectilinea Swinhoe, 1904, *Trans. ent. Soc. Lond.* 1904: 152. Type locality: Borneo. Type: male (BMNH).

Material. 3 ♂, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 28.III 2004, leg. Th. Ihle (CSIF); 1 ♂, N. Laos, Xiengkhouang, 12.VI 1995 (CMSW); 2 ♂, Central Laos, Annam, vic. Ban Nape (=Lax-Sao) ca 18°18'N, 105°04'E, 300-500 m, 1-8.V 2005, leg. H. Schnitzler (ZFMK); 4 ♂, Prov. Louang Prabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK); 1 ♂, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late III 2004, leg. Th. Ihle (ZFMK).

Geographical range. Sumatra, Borneo, Java, Palawan, Peninsular Malaysia, southern China, north-eastern India, Myanmar, Vietnam, Laos and Thailand.

****Odonestis vita* Moore, 1859**

Odonestis vita Moore, 1859, in Horsfield & Moore, *Cat. lepid. Insects Mus. Nat. Hist. east. India House* **2**: 424. Type locality: Java. Holotype: male (BMNH).

Material. 1 ♂, Laos, Prov. Vientiane, Ban Viang Khan, Phou Khoun, 950 m, 28.III 2004, leg. Th. Ihle (CSIF); 1 ♂, Prov. Louang Prabang, Ban Viang Kham, 15 km S Phou Khoun, 950 m, late II 2004, leg. Th. Ihle (ZFMK).

Geographical range. India, Sri Lanka, Andaman Is., southern China, Thailand, Laos, Vietnam, Borneo, Sumatra, Java and Philippines; at whole range is presented by separate subspecies.

****Alompra roepkei* Tams, 1953**

Alompra roepkei Tams, 1953, *Tijdschr. Plant.* **59**: 166, figs 3, 6, 8, 13. Type locality: [northern India] Assam. Holotype: male (BMNH).

Material. 1 ♂, Laos, Prov. Luang Phrabang, Phou Khoun, 1500 m, 10.X 2004, leg. Th. Ihle (CSIF).

Geographical range. North-eastern Himalayas, northern Vietnam, Laos, Thailand, Myanmar, Peninsular Malaysia; also is known from Sundaland and the Philippines, where presented by separate subspecies.

***Argonestis flammans* (Hampson, 1892)**

Bharetta flammans Hampson, 1892, *Fauna Brit. India* **1**: 416. Type locality: [India] Manipur. Holotype: male (BMNH).

References. Zolotuhin & Pinratana, 2005: 149.

Material. 3 ♂, Laos, Prov. Luang Phrabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 28.VIII 2004, leg. Th. Ihle (CSIF); 1 ♂, Laos, Phu Soai Dao, 1250 m, VI 1996, leg. Steinke & Lehmann (MWM); 1 ♂, SW Laos, Phu Soai Dao, 101°09'E, 18°30'N, 6-8.VIII 1996, leg. Steinke & Lehmann (MWM); 3 ♂, Prov. Louang Prabang, Sala Pac Thu, 50 km N Phou Khoun, 1300 m, 25-29.VIII 2004, leg. Th. Ihle (ZFMK).

Geographical range. India, Nepal, southern China, northern Thailand, northern Vietnam, Laos.

Thus, the specific composition of Lasiocampidae in Laos consists now of 52 species. It is not high index in comparison with the nearest Thailand with 114 species (112 pointed out by Zolotuhin & Pinratana, 2005) or Vietnam with 101 species (98 are listed by Zolotuhin & Witt, 2000). Surely,

some species and just genera (surprisingly some familiar Asiatic genera are missing from Laos so far, such as *Takanea* Nagano) will be found here in the nearest future, especially in mountains parts of the country. The discovering and studying their life circle are aims of the forthcoming investigations.

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