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## Sagrinae of Laos (Coleoptera: Chrysomelidae)

by Lukáš Sekerka & Michael Geiser

**Abstract.** Sagrinae species occurring in Laos are reviewed. For each species, a faunistic overview, new records and additional taxonomic remarks are given where necessary. *Sagra fulgida* Weber, 1801 is recorded for the first time from Laos. *Sagra carbunculus* Hope, 1842 is excluded from the Laotian fauna as a doubtful record. In total five of nine Oriental species of *Sagra* are presently recorded from Laos. A key to all species of *Sagra* occurring in the Oriental Region is given.

**Key words.** Entomology – taxonomy – identification key – Sagrinae – Chrysomelidae – Oriental Region – Indochina.

### Introduction

Sagrinae, also known as kangaroo or frog-beetles, are a small subfamily of leaf beetles (Chrysomelidae) with 67 species, mainly distributed in the Old World tropics (MONRÓS 1958, KONSTANTINOV & SEKERKA 2010, SEKERKA & VOISIN 2014). The subfamily is most diverse in Australia, where 11 genera and 33 species occur, most of them endemic, except for the widespread *S. femorata* (Drury, 1773). The only genus represented in the Oriental Region is *Sagra* Fabricius, 1792. Its species display great intraspecific variability in colour and morphological characters, and as a result many individual or geographic forms were described under different names (e.g. *S. femorata* has about 40 synonyms). Over time, these taxa have been reduced to subspecies, varieties or aberrations and as a result only nine species are currently recognised as valid in the Oriental region (CHEN & PU 1962, KONSTANTINOV & SEKERKA 2010, SEKERKA & VOISIN 2014).

Although Asiatic Sagrinae were reviewed and keyed out several times (e.g. JACOBY 1908, KUNTZEN 1914, CHEN 1942, CROWSON 1946, GRESSITT & KIMOTO 1961, CHEN & PU 1962, KIMOTO & GRESSITT 1979), their distribution and biology remains rather poorly known. MAULIK (1941) published an overview on their biology with description of immature stages of *S. femorata*. Larvae are stem borers in various shrubs and woody lianas, mainly of the plant family Fabaceae (MAULIK 1941, CHEN & PU 1962). However, *Sagra* are known to be associated also with several other plant families, such as Convolvulaceae, Dioscoreaceae, Euphorbiaceae, Meliaceae, Rubiaceae, Rutaceae, and Verbenaceae (MAULIK 1941). Unfortunately, Maulik did not usually specify whether a host plant record applied to adults or larvae. Records of adults may just be incidental.

The first records of Sagrinae from Laos were published as late as the 1940s (CHEN 1942, CHEN & PU 1962), and lacked precise locality data. The first precise data were published by KIMOTO & GRESSITT (1979). This contribution is the first comprehensive overview of the Laotian fauna, presently including five of the nine Asiatic Sagrinae species, while the occurrence of two further species is possible. Also, we provide a key to all species occurring in the Oriental Region. The species placed in square brackets have not yet been recorded for Laos, but may possibly occur there.

### Brief history of Laotian material

Land-locked Laos was for a long time one of the most inaccessible countries in Asia, and only a few insect specimens were captured there before the 1920s. Early specimens, labelled only “Laos”, were collected by Mouhot and purchased at Stevens’ Auctions in London by J. S. Baly. The largest collection until recent times was made by René Vitalis de Salvaza, a French naturalist, who collected extensively in French Indochina between 1913–1922. In his time travelling in Laos was difficult, and most easily achieved by boat along the major rivers. Despite this fact, Vitalis also travelled overland in northern Laos and was able to reach some remote inland localities, particularly in today’s Louangnamtha province. His material was partly sold by Eugene Le Moult and is spread among several collections. The bulk of his chrysomelids are now preserved in the museums in Paris (mainly via Maurice Pic and René Oberthür collections), London (individually purchased), Prague (via Julien Achard collection), and Genoa (purchased by Gestro). Probably, many other museums and institutions also hold some of Vitalis’ material, due to exchanges among museums and private collectors. Much of his material in Paris and Prague is quite poorly labelled, even though Vitalis seemed to have been rather precise in noting localities for his material, including dates of collection. Unfortunately, some of his contemporaries did not value his locality data, and many duplicate specimens were labelled rather poorly in their collections. This is particularly true for Prague material which was mounted but has no precise locality data. There must have been several boxes of Vitalis’ material when Achard’s collection entered the museum in 1926. Part of the material was provided with the typical Le Moult and Achard small labels with locality data but without date (material collected in 1918 and perhaps before). However, most specimens in Achard’s material came from the expeditions after 1920 and when they were mounted, only the first specimen in the series was provided with a locality label and the others ones only eventually with dates of collection, if different from the first specimen. These labels were handwritten by Achard. Unfortunately, nearly all specimens were later provided only with a general handwritten label “Haut-Laos Vitalis” by Jan Bechyně and incorporated into the general collection, thus the precise locality data were lost. Luckily in some specimens, Achard’s original labels with collecting dates were preserved, so there is some possibility of tracing localities based on these dates.

Perhaps also some specimens labelled “Tonkin” or “Indochina” may have originated from present-day Laos, which used to be part of colonial French Indochina, and some of its border areas may have been formerly assigned to Tonkin.

Later on, during the 1960s, J. A. Rondon collected extensively in Laos, partly with the help of local collectors. His material was worked on by KIMOTO & GRESSITT (1979) and is deposited in the Bernice P. Bishop Museum in Hawaii.

Until fairly recently, the fauna of Laos remained one of the most poorly known in SE Asia. The country became more accessible to foreign visitors about 20 years ago, which led to an increase in the number of entomological expeditions. Particularly extensive material was assembled during the “Beetles of Laos” survey project organised by the Basel Natural History Museum.

## Abbreviations for studied collections

BMNH	.....	The Natural History Museum, London, UK (Max Barclay)
JBC	.....	collection of Jan Bezděk (Brno, Czech Republic)
LSC	.....	collection of Lukáš Sekerka (Prague, Czech Republic)
IRSN	.....	Institut Royal des Sciences Naturelles, Bruxelles, Belgium (Pol Limbourg)
NHMB	.....	Naturhistorisches Museum Basel, Switzerland (the late Michael Brancucci)
NMPC	.....	National Museum, Prague, Czech Republic (Jiří Hájek)

Key to species of *Sagra* of the Oriental Region

- 1 Pronotum coarsely punctate; punctures easily visible with a hand-lens (10×). ..... 2
- Pronotum at most with a few fine punctures, appearing impunctate and matt at low magnifications. ..... 8
- 2 Apex of mesosternum round, convex and small. ..... 4
- Apex of mesosternum enlarged and horseshoe-shaped. ..... 3
- 3 Hind femora with three preapical teeth, in female usually only the first is distinct, in males the middle tooth is grouped with the third thus first looks separated. Inner lower surface of male femora densely pubescent. Cambodia, China (Guagdong, Yunnan), Indonesia (Java, Sumatra), Laos, Malaysia, Myanmar, Nepal, Thailand, and Vietnam. Fig. 8. ..... *S. odontopus* Gistel, 1831
- Hind femora with three preapical teeth in both, male and female; they are equidistant to each other or with the first two teeth more closely placed. Inner lower surface of male femora sparsely pubescent and appears almost bare. China (Yunnan). ..... *S. moghanii* Chen et Pu, 1962
- 4 Elytra 1.3–1.5 times longer than wide, body outline stout and oval. .... 5
- Elytra at least twice as long as wide, body outline elongate and parallel-sided. China (Yunnan), India, Laos, Myanmar, Thailand and Vietnam. Fig. 6. ..... *S. jansoni* Baly, 1860
- 5 Dorsum bright metallic. ..... 6
- Dorsum black, only humeri with metallic purple spots. China (Guizhou, Yunnan and Zhejiang). Fig. 5. ... *S. humeralis* Jacoby, 1904
- 6 Pronotum shiny, its punctuation sparse to moderate but punctures never touching each other. Elytra uniformly coloured. ..... 7
- Pronotum dull, coarsely and densely punctate. Elytra purplish-green, usually with elongate deep blue spot along suture. Male tibia without preapical tooth. Cambodia, China (Yunnan), Myanmar, Laos, Thailand, and Vietnam. Fig. 7. ..... *S. mouhoti* Baly, 1861
- 7 Males with preapical tooth on hind tibia and inner part of hind femora densely pubescent. Southern China, Myanmar, Laos, Thailand, and Vietnam. Figs 3–4. ..... *S. fulgida* Weber, 1801

- Males without preapical tooth on hind tibia and hind femora glabrous. With certainty found in Bhutan, NE India and Nepal, records from SE Asia needs verification. Fig. 1. .... *S. carbunculus* Hope, 1842
- 8 Elytra with several coarse punctures. Dorsal colouration very variable but never with wedge-shaped patch along suture. Whole tropical Asia from India to Australia. Fig. 2. .... *S. femorata* (Drury, 1773)
- Elytra entirely impunctate. Elytra dark green with multicolorous wedge-shaped patch along suture. Indonesia, Malaysia and Philippines. .... *S. buquetii* Lesson, 1831

### Sagrinae species recorded from Laos

#### [*Sagra carbunculus* Hope, 1842]

**Published faunistic data.** “Laos” (CHEN 1942).

**Notes.** CHEN (1942) published records from Laos and Cambodia of this species, among others, without exact locality, which constitute the first records of *S. carbunculus* from these countries. This was the only existing record for Laos and was repeated by CHEN & PU (1962) and KIMOTO & GRESSITT (1979). Unfortunately, we had no opportunity to verify Chen’s material and see whether he had mislabelled or misidentified specimens. The latter could have easily been the case, since females of *S. carbunculus* are nearly inseparable from those of *S. fulgida*. So far we have not seen any specimen of *S. carbunculus* from former French Indochina and the species seems to be restricted to mountain regions of NE India, Nepal, China and possibly also Myanmar. Its occurrence in Laos requires confirmation based on recent specimens. Hence, the species is treated here as only possibly occurring in Laos.

*Sagra carbunculus* is closest to *S. fulgida* and, like *S. mouhoti*, differs in male hind femora lacking a preapical tooth. The latter differs from *S. carbunculus* in very coarsely and densely punctate pronotum, appearing nearly dull and punctures touching each other at least in apical third while *S. carbunculus* and *S. fulgida* have shiny and coarsely but sparsely punctate pronotum. Females are quite difficult to distinguish, however, typical populations of *S. fulgida* differ in much sparser and finer punctuation of elytra while the southern populations have a coarser elytral surface with impressed wrinkles. Also we have not seen specimens of *S. carbunculus* that are completely metallic blue, which is a very common coloration in *S. fulgida*.

#### [*Sagra femorata* (Drury, 1773)]

**Published faunistic data.** “Laos” (CHEN 1942); BORIKHAMXAY: Pakkading, CHAMPASACK: Pakse, Paksong, Houei Kong, KHAMMUANE: Phon Tiou, VIENTIANE: Ban Thonpheng, Ban Van Heua, Vientiane, XAYABURY: Paklay, Sayaboury (KIMOTO & GRESSITT 1979).

**New faunistic data.** ATTAPEU: Thong Kai Ohk, Ban Kachung (Mai) env., 15°01–02'N, 107°26–27'E, 1200–1450 m, 10.–24.vi.2011, 1 spec., M. Brancucci, M. Geiser, D. Hauck, Z. Kraus, A. Phanthala & E. Vongphachan lgt. (NHMB). BOKEO: Ban Toup, Bokeo Nature Reserve, 20°27–28'N, 100°45'E, 500–700 m,

4.–18.v.2011, 3 spec., M. Brancucci, M. Geiser, D. Hauck, Z. Kraus, A. Phanthala & E. Vongphachan lgt. (NHMB). **BORIKHAMXAY**: 8 km NE of Ban Nape, 18°21'N, 105°08'E, ca. 600 m, 7 spec., P. Pacholátko lgt. (NHMB); Nam Kading NPA, Tad Paloy campsite, 18°21–23'N, 104°09'E, 250–400 m, 24.–28.v.2011, 1 spec., M. Geiser, D. Hauck, A. Phantala & E. Vongphachan lgt. (NHMB). **HOUAPHANH**: Ban Saluei to Phou Pane Mt., 20°12.0–13.5'N, 103°59.5–104°01.0'E, 1340–1870 m, 15.iv.–15.v.2008, 10 spec., Lao collector lgt. (NMPC), 10.v.–16.vi.2009, 100 spec., M. Brancucci & local coll. lgt. (NHMB), 20°11–13'N, 103°59'–104°01'E, 1300–1900 m, 9.–17.vi.2009, 7 spec., M. Geiser lgt. (NHMB); Phou Pane Mt., 20°12'N, 104°01'E, 1500–1900 m, v.2007, 16 spec., Lao collector lgt. (NMPC), 17.v.–3.vi.2007, 9 spec., M. Brancucci lgt. (NHMB), 20°13'N, 104°00'E, 1350–1500 m, 1.–16.vi.2009, 44 spec., M. Brancucci lgt. (NHMB), 20°13'09–19" N, 103°59'54"–104°00'03"E, 1480–1550 m, 9.–16.vi.2009, 1 spec., D. Hauck lgt. (NHMB); Phu Loei, Ban Sakok N.P., 20°10'N 103°12'E, 23.–26.v.2001, 3 spec., J. Bezděk lgt. (JBC). **KHAMMUANE**: Nakai-Nam Theun NPA, Ban Navang env., 17°57–59'N, 105°13–16'E, 600–750 m, 18.–21.v.2012, 1 spec., M. Brancucci & M. Geiser lgt. (NHMB); Takek [= Thakhek], 4 spec. (IRSN). **LOUANGNAMTHA**: Luang Namtha, 800–1200 m, 5.–31.v.1997, 7 spec. (JBC); Namtha to Muang Sing, 21°09'N, 101°19'E, 900–1200 m, 5.–31.v.1997, 15 spec., V. Kubáň lgt. (NHMB); Nam Mat (Haut-Mékong), 15.iv.1918, 5 spec., 24.iv.1918, 1 spec., R. Vitalis de Salvaza lgt. (NMPC). **LUANGPRABANG**: 5 km W of Ban Song Cha, 20°33–34'N, 102°14'E, ca. 1200 m, 24.–30.iv.1999, 1 spec., 24.iv.–16.v.1999, 18 spec., 1.–9.v.1999, 1 spec., 10.–16.v.1999, 2 spec., V. Kubáň lgt. (NHMB); Louang Prabang, ix.1917, 9 spec., R. Vitalis de Salvaza lgt. (BMNH), 600 m, 20.vii.2003, 1 spec., 22.vii.2003, 1 spec., 6.viii.2003, 1 spec., 20.vi.2004, 1 spec., Šlachta lgt. (LSC); Louang Prabang-A Theng, 1888, 1 spec., A. Pavie lgt. (IRSN); Ban Hou, 2 spec., x.1918, 1 spec., R. Vitalis de Salvaza lgt. (NMPC); Muang Ngoy Neua env., Ban Kioukhan, 20°45'N, 102°42'E, ca. 800 m, secondary forest, on low vegetation, 7.viii. 2004, 1 spec., M. Geiser lgt. (BMNH); Pak Lung, 1 spec., R. Vitalis de Salvaza lgt. (NMPC); Pak Neun, 1 spec., R. Vitalis de Salvaza lgt. (NMPC); Thong Khang, 19°35'N, 101°58'E, 11.–21.v.2002, ca. 750 m, 5 spec., V. Kubáň lgt. (NHMB), 19°33–34'N, 101°57'E, 670–1160 m, 30.vi.–1.vii.2010, 1 spec., M. Brancucci & M. Geiser lgt. (NHMB). **OUDOMXAY**: 17 km NEE of Oudom Xai, 20°45'N, 102°09'E, ca. 1100 m, 1.–9.v.2002, 1 spec., V. Kubáň lgt. (NHMB). **PHONGSALY**: Ban Sano Mai, 21°21'N, 102°03'E, 19.–26.v.2004, ca. 1150 m, 10 spec., P. Pacholátko lgt. (NHMB), 5 spec. M. Brancucci lgt. (NHMB); Boun Neua, 21°38'N, 101°57'E, ca. 1100 m, 26.v.2004, 1 spec. M. Brancucci lgt. (NHMB); Phongsaly env., 21°41–42'N, 102°06–08'E, ca. 1500 m, 18.v.–20.vi.2003, 3 spec., V. Kubáň lgt. (NHMB), 6.–17.v.2004, 1 spec., P. Pacholátko lgt. (NHMB). **SARAVANE**: Xe Xap NPA, ca. 15 km NE of Ta-oy, Ban Doub env., 400–1000 m, 16°08'N, 106°40–43'E, 25.–31.v. 2012, 1 spec., M. Brancucci, M. Geiser, K. Phanthavong & S. Xayalath lgt. (NHMB). **SAVANNAKHET**: Tché-Poné [= Xépôn], 1914, 3 spec., L. Dussault lgt. (NHMB). **VIENTIANE**: Vang Vieng env., ca. 2 km SW of the village, forest edge, on shrubs, 16.viii.2004, 1 spec., M. Geiser lgt. (BMNH); Vientiane, 60 spec., 1918, 13 spec., R. Vitalis de Salvaza lgt. (NMPC, 6 LSC), 25.v.1915, 1 spec., 29.v.1915, 1 spec., R. Vitalis de Salvaza lgt. (BMNH), 6.–17.vii.1989, 1 spec. T. Scholz lgt. (LSC); Vientiane-Sikhay, 6.viii.1989, 1 spec. T. Scholz lgt. (LSC); Vientiane-Thangone, 11.vi.1989, 1 spec. T. Scholz lgt. (LSC); "Vientian", 1 spec. (BMNH). **XAYABURY**: Hongsa env., 19°40–44'N, 101°20'E, 550–750 m, 2.–3.vii.2010, 1 spec., D. Hauck lgt. (NHMB); Paklay, 3 spec., R. Vitalis de Salvaza lgt. (NMPC, 1 LSC), viii.1917, 18 spec., R. Vitalis de Salvaza lgt. (BMNH, 2 LSC); Xayaboury env., 19°13'N, 101°42'E, ca. 300 m, 27.–30.vi.2010, 1 spec., D. Hauck lgt. (NHMB). **XIENGKHUANG**: Ban Tha Chôk to Ban Na Sala, 19°32–33'N, 103°25–27'E, 23.–26.v.2010, 1 spec., 930–1175 m, M. Geiser & D. Hauck lgt. (NHMB); "Xieng Khouang", 3 spec., R. Vitalis de Salvaza lgt. (NMPC), 13.v.1919, 1 spec., R. Vitalis de Salvaza lgt. (BMNH). **UNKNOWN LOCALITIES**: "Laos", 1 spec. (NHMB), 1 spec. (IRSN); "Haut-Laos", 11 spec., 21.iii.1920, 5 spec., 23.iii.1920, 1 spec., 26.iii.1920, 9 spec., 31.iii.1920, 3 spec., 13.v. 1920, 3 spec., 10.vii.1920, 1 spec., R. Vitalis de Salvaza lgt. (NMPC, 2 LSC); Ban Quang, 24.iv.1918, 1 spec., R. Vitalis de Salvaza lgt. (NMPC); Hat Lon Li, 2 spec. (NMPC, LSC); Triton (Haut-Laos), 31.iii.1922, 1 spec., R. Vitalis de Salvaza lgt. (NMPC).

**Notes.** A widespread and very polymorphic species in SE Asia. Individual forms and populations were described as distinct nominal taxa. However, all were shown to be products of intraspecific variability, connected by intermediate forms and often two or more former "species" occur together on one plant and emerge from one gall. *Sagra femorata* can be easily separated from other species by its finely punctate pronotum, which appears impunctate at low magnifications.

### *Sagra fulgida* Weber, 1801

**Published faunistic data.** New species to Laos.

**New faunistic data.** **HOUAPHANH:** Ban Saluei, 900–1400 m, 10.–25.vi.2010, 2 spec., S. Jakl lgt. (LSC); Ban Saluei to Phou Pane Mt., 20°12–13.5'N, 103°59.5–104°01'E, 1340–1870 m, 10.v.–16.vi.2009, 8 spec., M. Brancucci & local coll. lgt. (NHMB, 3 LSC); Phou Pane Mt., 20°15'N, 104°02'E, 1500–2000 m, 26.iv.–11.v.2001, 1 spec., J. Bezděk lgt. (JBC), 20°12'N, 104°01'E, 1500–1900 m, v.2007, 2 spec., Lao collector lgt. (NMPC), 17.v.–3.vi.2007, 3 spec., M. Brancucci lgt. (NHMB), 20°13'N, 104°00'E, 1350–1500 m, 1.–16.vi.2009, 6 spec., M. Brancucci lgt. (NHMB, 2 LSC). **LUANGPRABANG:** 5 km W of Ban Song Cha, 20°33–34'N, 102°14'E, ca. 1200 m, 1.–16.v.1999, 1 spec., V. Kubáň lgt. (NHMB). **OUDOMXAY:** 17 km NEE of Oudom Xai, 20°45'N, 102°09'E, ca. 1100 m, 1.–9.v.2002, 4 spec., V. Kubáň lgt. (NHMB). **PHONGSALY:** Ban Sano Mai, 21°21'N, 102°03'E, 19–26.v.2004, ca. 1150 m, 6 spec., P. Pacholátko lgt. (NHMB); Phongsaly env., 21°41–42'N, 102°06–08'E, ca. 1500 m, 28.v.–20.vi.2003, 8 spec., P. Pacholátko lgt. (NHMB, 1 LSC), 28.v.–20.vi.2003, 1 spec., M. Brancucci lgt. (NHMB), 6.–17.v.2004, 9 spec., P. Pacholátko lgt. (NHMB, 1 LSC). **XIENGKHUANG:** 30 km NE of Phonsavan, 19°37–8'N, 103°20'E, 1400–1500 m, 10.–30.v.2009, 1 spec., Z. Kraus lgt. (NHMB).

**Notes.** *Sagra fulgida* is a widespread species in SE Asia and quite polymorphic. Individual forms were described under several names, however, these were recently synonymised with the nominal species (SEKERKA 2010, SEKERKA & VOISIN 2014). Typical specimens (also described as *S. leechi* Jacoby, 1888; Fig. 4) have very smooth and polished elytra with very fine and sparse punctuation, and green or golden green elytra. The form with blue elytra was described as subspecies *janthina* Chen, 1942, however, except for colour there are no morphological differences from the nominotypical taxon. The typical form and its colour aberrations occur in SE China. The form distributed in Yunnan and former Indochina was described under the name *minuta* Pic, 1930 (= *insuturalis* Pic, 1953, *subalutacea* Pic, 1953; see SEKERKA & VOISIN (2014) for details; Fig. 3) and differs from the typical form in the irregular surface of the elytra with impressed wrinkles and coarse punctuation. It was treated as subspecies by CHEN & PU (1962). However, the elytral structure of *S. fulgida* becomes gradually coarser from E China (Fujian, Jiangxi, Zhejiang) to SE China (Guangdong, Guangxi, Guizhou, Hubei, Sichuan) and, the populations from Yunnan southwards (= *S. minuta*) are the most coarsely punctate.

Laotian populations of *Sagra fulgida* can easily be separated from the other small-sized *Sagra* species by the irregular and quite coarse surface sculpture of the elytra, with small but distinct impressed wrinkles and punctures. Other species have elytra finely to moderately punctate, but never with impressed wrinkles. The species is often misidentified as *S. odontopus*, but the latter has an enlarged and horse-shoe shaped mesosternal apex (small and round in *S. fulgida*) and metallic blue colour (all specimens of *S. fulgida* we have seen from Laos had purple elytra). Specimens of *S. mouhoti* with reduced sutural stripe have similar colour, but differ in having pronotum densely punctate and dull while that of *S. fulgida* is shiny and sparsely punctate.

### [*Sagra humeralis* Jacoby, 1904]

**Notes.** The species is known from China: Guizhou, Yunnan and Zhejiang (JACOBY 1904, CHEN 1935). CHEN (1935) also added “Tonkin” (probably according to ACHARD 1913) and this record was repeated by subsequent authors who interpreted the locality as

northern Vietnam (CHEN & PU 1962, KIMOTO & GRESSITT 1979). However, ACHARD (1913) published a redescription of *S. humeralis* and noted it was described from “Mouy Tsé (Tonkin)”. This locality is now situated in southern Yunnan, at that time part of the French protectorate of Tonkin. Therefore Vietnam should be deleted from the species’ known range, as no known specimen originates from present-day Vietnam. On the other hand it is quite likely that the species could be found in the mountains of Laos or Vietnam, adjacent to the Chinese border, thus is included here as a possible candidate for the Laotian fauna.

*Sagra humeralis* can be easily separated from others by its dull black body with metallic purple spot on humeri. So far this species is only known from a few specimens.

### *Sagra jansoni* Baly, 1860

**Published faunistic data.** BORIKHAMXAY: Pakkading, CHAMPASACK: Khong Island, Pakse, KHAMMUANE: Phon Tiou, VIENTIANE: Ban Van Heua, Phou Khau Khouei, XAYABURY: Sayaboury (KIMOTO & GRESSITT 1979).

**New faunistic data.** HOUAPHANH: Phou Pane Mt., 20°12'N, 104°01'E, 1500–1900 m, v.2007, 1 spec., Lao collector lgt. (NMPC). KHAMMOUANE: Takek [=Thakhek], 2 spec. (IRSN, 1 LSC). LUANGPRABANG: Pak Neun, ix.1918, 2 spec., R. Vitalis de Salvaza lgt. (NMPC). XAYABURY: Paklay, 1 spec., R. Vitalis de Salvaza lgt. (NMPC), viii.1917, 8 spec., R. Vitalis de Salvaza lgt. (BMNH, 1 LSC). **UNKNOWN LOCALITIES:** “Haut-Laos”, 4 spec., 31.iii.1920, 11 spec., R. Vitalis de Salvaza lgt. (NMPC, 4 LSC); Hat Lon Li (Haut-Laos), ix.1918, 1 spec., R. Vitalis de Salvaza lgt. (NMPC).

**Note.** *Sagra jansoni* can be readily separated from other species with a coarsely punctate pronotum by its elongate body, that is more than twice as long as wide.

### *Sagra mouhoti* Baly, 1861

**Published faunistic data.** “Laos” (CHEN & PU 1962); CHAMPASACK: Pakse, LOUANGNAMTHA: Muong Sing (KIMOTO & GRESSITT 1979).

**New faunistic data.** XIENGKHUANG: “Xieng Khouang”, 13.v.1919, 1 spec., R. Vitalis de Salvaza lgt. (BMNH); Ban Tha Chôk to Ban Na Sala, 19°32–35'N, 103°25–27'E, 930–1175 m, 2 spec., M. Geiser & D. Hauck lgt. (NHMB, LSC).

**Notes.** KIMOTO & GRESSITT (1979) incorrectly listed the locality Muang Sing as being in the Luangprabang province. It is situated in the Louangnamtha province.

This species has the most coarsely and densely punctate pronotum of all small Asiatic *Sagra* species. The pronotum also appears dull, while in other species it is shiny and sparsely punctate. Typical specimens of *S. mouhoti* have purple elytra with a broad, blue sutural stripe, however, the stripe is sometimes reduced and such specimens are often misidentified as southern populations of *S. fulgida* (= *S. minuta*). But the latter has much sparser and finer punctuation of the pronotum and hind tibia in males with a preapical tooth that is absent in *S. mouhoti*.

### [*Sagra moghanii* Chen et Pu, 1962]

**Note.** This species may be recorded from Laos in future, as it was described from southern Yunnan (CHEN & PU 1962). It is closest to *S. odontopus*, as both share enlarged

and horse-shoe shaped mesosternal apex. We have not seen any specimen of *S. mohganii* but, according to the description, it differs in the structure of hind legs, as given in the key.

### *Sagra odontopus* Gistel, 1831

**Published faunistic data.** BORIKHAMXAY: Pakkading, CHAMPASACK: Houei Kong, Khong Sedone, Pakse, KHAMMUANE: Phon Tiou, VIENTIANE: Ban Tonpheng, Ban Van Heua, Phou Khau Khouei, Vientiane, XAYABURY: Paklay (KIMOTO & GRESSITT 1979).

**New faunistic data.** HOUAPHANH: Ban Saluei to Phou Pane Mt., 20°12.0–13.5'N, 103°59.5–104°01'E, 1340–1870 m, 10.v.–16.vi.2009, 1 spec., M. Brancucci & local coll. lgt. (NHMB); Ban Kangpabong env., 25 km SE Vieng Xai, 20°19'N, 104°25'E, 14.–18.v.2001, 3 spec., J. Bezděk lgt. (JBC, LSC). LUANGPRABANG: Luang Prabang, 1 spec., R. Vitalis de Salvaza lgt. (LSC); SARAVANE: Xe Xap NPA, ca. 15 km NE of Ta-oy, Ban Doub env., 400–1000 m, 16°08'N, 106°40–43'E, 25.–31.v. 2012, 2 spec., M. Brancucci, M. Geiser, K. Phanthavong & S. Xayalath lgt. (NHMB, LSC); VIENTIANE: Ban Vangheua, Phou Kham Khouay N.P., 55 km N of Vientiane, 18°27'N, 102°49'E, 1000 m, 4.–18.v.2005, 1 spec., P. Kresl lgt. (JBC); Vientiane, 6 spec., R. Vitalis de Salvaza lgt. (NMPC, 1 LSC); XIENGKHUANG: Ban Tha Chôk to Ban Na Sala, 19°32–35'N, 103°25–27'E, 930–1175 m, 23.–26.v.2010, 1 spec., M. Geiser & D. Hauck lgt. (NHMB). **UNKNOWN LOCALITIES:** “Laos”, 1 spec., Mouhot lgt. (NHMB); “Haut-Laos”, 13.v.1920, 1 spec., 21.v.1920, 1 spec., R. Vitalis de Salvaza lgt. (LSC); Hat Lon Li, ix.1918, 2 spec., R. Vitalis de Salvaza lgt. (NMPC).

**Notes.** *Sagra odontopus* can be easily recognised by the enlarged and horse-shoe shaped apex of the mesosternum as other similar Laotian species have the apex small, round and normally convex. It has also uniformly metallic blue dorsum while Laotian populations of *S. fulgida* have purple elytra.

KIMOTO & GRESSITT (1979) published numerous specimens of *S. odontopus* from various localities across Laos. On the other hand they listed no records of *S. fulgida*, what is curious since that species appears to be the more common of the two in Laos. It would be desirable to re-examine the material they studied, to determine whether all records truly refer to *S. odontopus*, which has often been confused with *S. fulgida*.

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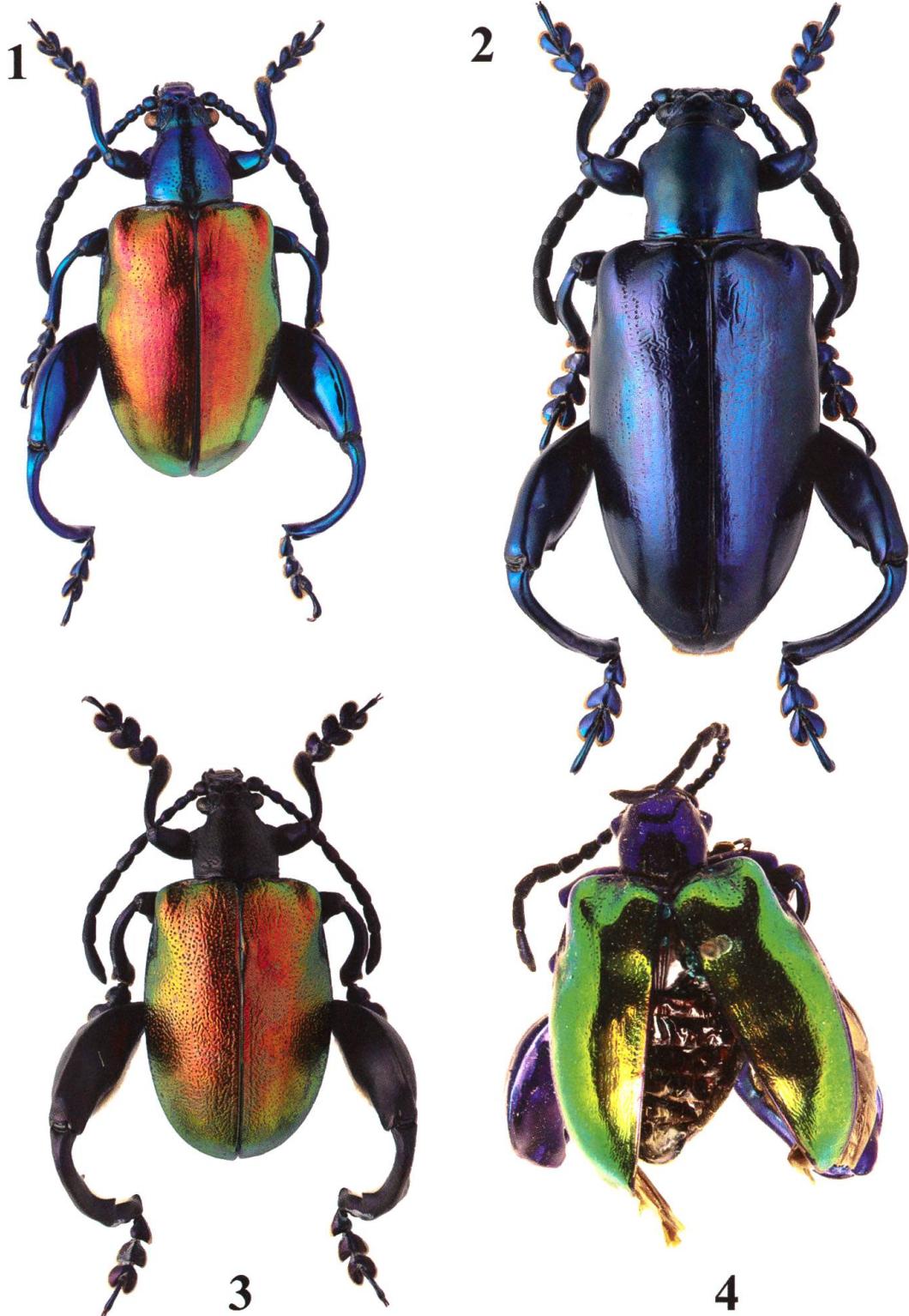
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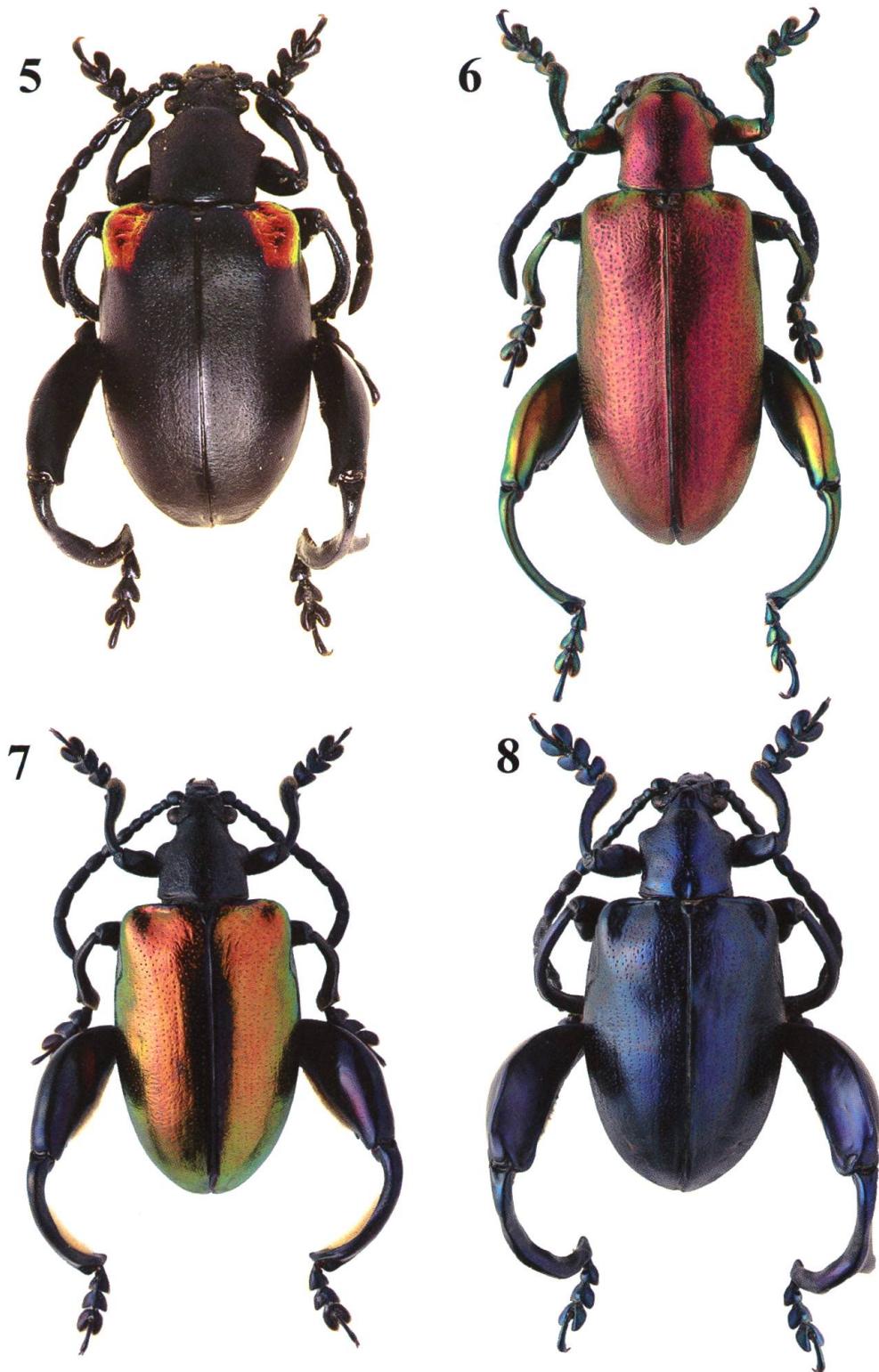
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**Figs 1–4.** 1 – *Sagra carbunculus* Hope, 1842 (India: Kurseong; female, LSC); 2 – *S. femorata* (Drury, 1773) (Laos: Luang Prabang; female, LSC); 3 – *S. fulgida* Weber, 1801 (= *S. minuta* Pic, 1930) (Laos: Phongsaly env.; male, LSC); 4 – *S. fulgida* Weber, 1801 (syntype of *S. leechi* Jacoby, 1888; female, BMNH).



**Figs 5–8.** 5 – *Sagra humeralis* Jacoby, 1904 (China: Yunnan, Wei-Xi; male, BMNH); 6 – *S. jansoni* Baly, 1860 (Thailand: Soppong; female, LSC); 7 – *S. mouhoti* Baly, 1861 (Thailand: Nam Nao; male, LSC); 8 – *S. odontopus* Gistel, 1831 (Thailand: Chiang Mai; male, LSC).

