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Checklist of hawkmoths (Lepidoptera: Bombycoidea: Sphingidae) in the Central Highlands of Vietnam

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Abstract: Study on hawkmoths (Sphingidae family) in the Central Highlands of Vietnam (Kon Tum, Gia Lai, Dak Lak, Dak Nong, and Lam Dong provinces) was carried out during the years 2016–2022. Light traps and butterfly nets were used to collect specimens of the Sphingidae family in the night and day times. An update checklist of Sphingidae was based on collected specimens in the studied area and combine the review data. Totally, 113 Sphingidae species from the Central Highlands of Vietnam are recorded. Among them, 78 species are recorded from collected specimens and 35 species without collected specimens are compiled from the literatures. Addition, 14 species are herein added to the known list, including one very rare species, Eurypteryx geoffreyi Cadiou & Kitching, 1990, and two endemic species, Griseosphinx marchandi Cadiou, 1996 and Callambulyx schintlmeisteri Brechlin, 1997.

Keywords: Endemic species, Eurypteryx, Griseosphinx, light trap, national park, rare species, review, specimens, updated list.
INTRODUCTION

The family Sphingidae, commonly known as hawkmoths, consists of more than 1,700 species of small to huge moths (wingspans ranging 25–200 mm) that are found worldwide except for Antarctica (Kitching et al. 2018). Zolotuhin & Ryabov (2012) reported 174 hawkmoth species from Vietnam, of which 91 were recorded from the Central Highlands. The Central Highlands includes five provinces, Kon Tum, Gia Lai, Dak Lak, Dak Nong, and Lam Dong (Figure 1), and is topographically dominated by the Annamese Mountains (Truong Son Ranges). The World Wide Fund for Nature has highlighted the rainforests on the northern and southern Truong Son Ranges as global ecoregions that have unique species, communities, and geographical conditions, with globally outstanding biodiversity (Olson et al. 2001).

The moths of the Central Highlands region have not been extensively studied, with very few publications mentioning Sphingidae. Hoang et al. (2011) reported 259 species of Lepidoptera belonging to 27 families, including 22 species and subspecies of Sphingidae, from a survey along the Ho Chi Minh trail through four provinces in the Central Highlands (Kon Tum, Gia Lai, Dak Lak, and Dak Nong). In this paper, the available data on the geographic distributions and taxonomy of the Sphingidae from the Central Highlands of Vietnam was reviewed. Field surveys were undertaken to add to these data and combine the review data with the field data to provide an updated checklist.

MATERIALS AND METHODS

The study area

The Central Highlands extend from the northern borders of Quang Nam province to the southern borders of Gia Lai province. The climate is monsoon tropical with a warm winter, a rainy summer, and a very high annual level of precipitation (3,500–4,500 mm). Two main vegetation types are found: evergreen forest at low and medium altitudes and evergreen mountain forest (1,000–2,500 m) on silicate soils. Surveys were undertaken in the National Parks (NP), Nature Reserves (NR), and forests in four provinces of the Central Highlands region (Kon Tum, Gia Lai, Dak Nong, and Lam Dong provinces) during the years 2016–2022. The region covered by this study comprises Tu Mo Rong district in 2018, Kon Plong district in 2016 and 2019, Dak Glei district in 2019 (Kon Tum province), Kon Ka Kinh NP in 2019, and Kon Chu Rang NR in 2016 and 2019 (Gia Lai province), Nam Nung NR in 2017 and 2020 (Dak Nong province), Bidoup-Nui Ba NP in 2020 and 2022, and the Di Linh Plateau in 2020 (Lam Dong province).

Methods

Specimens were collected using light traps consisting of two 250-watt mercury-vapour lamps powered by a small generator. The light sources were placed in front of a 200 x 300 cm white linen sheet and, if required, protected from the rain by an umbrella. Beck & Linsenmair (2005) showed that the abundance of specimens at light influenced by moonlight and moonless nights produced the highest specimen counts, so to avoid the negative effect of the moon, our collecting was carried out from a week before the new moon until a week after. The traps were run from about half an hour after the sunset to half an hour before sunrise, totaling an average sampling time of about ten hours per night. In addition, some species are active during the daytime, so were collected using a butterfly net. Specimens were also collected along trails in the study areas where their host plants were flowering for one hour after sunrise and one hour before sunset. Specimens were killed by ammonia or ethyl acetate and then dried and preserved in the Vietnam National Museum of Nature, Vietnam Academy of Science and Technology.

Taxonomic study

Identifications were undertaken using the taxonomic literature: Rothschild & Jordan (1903), Bell & Scott (1937), Kitching & Spitzer (1995), Inoue et al. (1997), Kitching & Cadiou (2000), Zolotuhin & Ryabov (2012), and the Sphingidae Taxonomic Inventory website (Kitching 2023). Higher classification and nomenclature follow Kitching et al. (2018). For species whose external morphology is indistinct, genitalia dissection was undertaken, following Clarke (1941) and Robinson (1976).

RESULTS

Around 113 species belonging to three subfamilies, comprising 11 Sphinginae, 36 Smerinthinae, and 66 Macroglossinae. We added 14 species to those reported by previous studies, including a very rare species, *Eurypteryx geoffreyi* Cadiou & Kitching, 1990, and two endemic species, *Griseosphinx marchandi* Cadiou, 1996 and *Callambulyx schintlemeisteri* Brechlin, 1997. They are indicated in the following list by an asterisk.

Subfamily Sphinginae Latreille, 1802

Genus *Acherontia* [Laspeyres], 1809

1. *Acherontia lachesis* (Fabricius, 1798) (Image 1.1)
   *Sphinx lachesis* Fabricius, 1798, *Supplementum Entomologiae Systematicae*: 434. Type locality: “India orientali”.
   Materials: 1 male, 1 female, xii.2020, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 400 m, coll. Q.T. Le.
   Distribution: Eastern Pakistan, Sri Lanka, India, Nepal, Bhutan, Myanmar, China, Hong Kong, southern Japan, Thailand, Laos, Vietnam, Malaysia, Philippines, and Indonesia to Papua New Guinea.
   Local distribution: Lao Cai, Cao Bang, Lang Son, Vinh Phuc, Quang Ninh, Ninh Binh, Nghe An, Thua Thien Hue, and the Central Highlands (Kon Tum, Gia Lai, Lam Dong, Dak Nong).

2. *Acherontia styx* (Westwood, 1847) (Image 1.2)
   *Sphinx styx* Westwood, 1847, *The Cabinet of Oriental Entomology*: 88, pl. 42, fig. 3. Type locality: “East Indies”.
   Materials: 1 male, xii.2020, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 400 m, coll. Q.T. Le.
   Distribution: Iraq, Saudi Arabia to Iran, Pakistan, India, Nepal, Bhutan, Bangladesh, Myanmar, China, Thailand, Vietnam, and Philippines.
   Local distribution: Lao Cai, Vinh Phuc, Thua Thien Hue, and the Central Highlands (Lam Dong).

Genus *Agrius* Hübner, [1819]

3. *Agrius convolvuli* (Linnaeus, 1758) (Image 1.3)
   *Sphinx convolvuli* Linnaeus, 1758, *Systema Naturae*
Genus Megacorma Rothschild & Jordan, 1903

4. Megacorma obliqua (Walker, 1856) (Image 1.4)
   Macrosila obliqua Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 208. Type locality: Ceylon [Sri Lanka].
   Materials: 2 males, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.
   Local distribution: Lao Cai, Lang Son, Vinh Phuc, Ninh Binh, Nghe An, Thua Thien Hue, Quang Tri, and the Central Highlands (Kon Tum, Dak Nong).

Genus Hyloicus Hübner, [1819]

5. Hyloicus centrovietnama (Brechlin, 2015)
   Materials examined: None
   Remarks: This species was previously recorded as Sphinx caligineus (Butler, 1877) by Hoang et al. (2011).
   Distribution: China, Thailand, Vietnam, and Laos.
   Local distribution: the Central Highlands.

Genus Meganoton Boisdruval, [1875]

6. Meganoton nyciphanes (Walker, 1856) (Image 1.6)
   Macrosila nyciphanes Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 209. Type locality: Silhet [Bangladesh].
   Materials: 2 male, 1 female, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.
   Local distribution: Lao Cai, Thua Thien Hue, Quang Nam, Quang Binh, the Central Highlands (Lam Dong, Dak Nong), and Dong Nai.

Genus Cerberonoton Zolotuhin & Ryabov, 2012

7. Cerberonoton rubescens (Butler, 1876) (Image 1.7)
   Diluidia rubescens Butler, 1876, Proceedings of the Zoological Society of London, 1875: 623. Type locality: [North India].
   Distribution: India, Thailand, and Vietnam
   Local distribution: Lao Cai, Yen Bai, Lang Son, Quang Ninh, Vinh Phuc, Ninh Binh, Nghe An, Quang Binh, Thua Thien Hue, Quang Nam, the Central Highlands (Kon Tum, Gia Lai), and Dong Nai.

Genus Notonagemia Zolotuhin & Ryabov, 2012

8. Notonagemia analis (Felder, C. & Felder, R., 1874) (Image 1.8)
   Sphinx analis Felder, C. & Felder, R., 1874, Lepidoptera. Heft IV. Atlas der Heterocera Sphingidae-Noctuidae, pl.78, fig. 4. Type locality: Shanghai [China].
   Distribution: China, Taiwan, Thailand, Vietnam, Malaysia, Singapore, and Indonesia.
   Local distribution: Lao Cai, Vinh Phuc, Nghe An, Quang Tri, Thua Thien Hue, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Dak Nong), and Dong Nai.

Genus Psilogramma Rothschild & Jordan, 1903

9. Psilogramma increta (Walker, 1865) (Image 1.9)
   Anceryx increta Walker, 1865, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 31: 36. Type locality: Shanghai [China].
   Distribution: Northern Pakistan, throughout India, Nepal, Bhutan, Myanmar, eastern China to Korea, Hong Kong, Taiwan, Japan, Laos, and Vietnam.
   Local distribution: Cao Bang, Lang Son, Vinh Phuc, Thai Nguyen, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, the Central Highlands (Lam Dong), and Dong Nai.

10. Psilogramma discistriga (Walker, 1856) (Image 1.10)
    Macrosila discistriga Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 209 Type locality: Silhet [Bangladesh].
Image 1. Species pictures of the subfamily Sphinginae Latreille, 1802.
1—Acherontia lachesis (Fabricius, 1798) | 2—Acherontia styx (Westwood, 1847) | 3—Agrius convolvuli (Linnaeus, 1758) | 4—Megacorma obliqua (Walker, 1856) | 6—Meganoton nycliphas (Walker, 1856) | 7—Cerberonoton rubescens (Butler, 1876) | 8—Notonagemia analis (Felder C. & Felder R., 1874) | 9—Psilogramma increta (Walker, 1865) | 10—Psilogramma discistriga (Butler, 1875) | 11—Dolbina inexacta (Walker, 1856). © T.Q. Le.

Materials: 1 male, x.2017, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.
Distribution: throughout India, Sri Lanka, China, Thailand, Vietnam, Sundaland, Philippines, and Australia.
Local distribution: Cao Bang, Lao Cai, Vinh Phuc, Ninh Binh, Nghe An, Quang Binh, Thua Thien Hue, Quang Nam, the Central Highlands (Gia Lai, Lam Dong, Dak Nong), and Dong Nai.

Genus Dolbina Staudinger, 1887
11. Dolbina inexacta (Walker, 1856) (Image 1.11)
Macrosila inexacta Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 208. Type locality: [N. India].
Materials: 1 male, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 400 m, coll. Q.T. Le.
Distribution: Pakistan, throughout India, Nepal, Bhutan, Myanmar, southern China, Taiwan, Thailand,
and Vietnam.

Local distribution: Cao Bang, Lao Cai, Ninh Binh, Bac Giang, Nghe An, Quang Tri, Thua Thien Hue, Da Nang, and the Central Highlands (Lam Dong).

Subfamily Smerinthinae Grote & Robinson, 1865
Genus Ambulyx Westwood, 1847

12. **Ambulyx canescens** (Walker, 1865)* (Image 2.12)
   
   
   Materials: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.
   
   
   Local distribution: Quang Nam, and the Central Highlands (Dak Nong).

13. **Ambulyx liturata** Butler, 1875 (Image 2.13)
   
   
   
   Distribution: Northeastern India, Nepal, Bhutan, Myanmar, southern China, Hong Kong, Thailand, Vietnam, Laos, and Cambodia.
   
   Local distribution: Lao Cai, Vinh Phuc, Lang Son, Quang Ninh, Thua Thien Hue, Quang Nam, Khanh Hoa, and the Central Highlands (Kon Tum, Lam Dong, Dak Nong).

14. **Ambulyx moorei** Moore, 1858 (Image 2.14)
   
   Ambulyx moorei Moore, 1858, in *Horsfield & Moore, A catalogue of the Lepidopterous Insects in the Museum of the Hon. East-India Company*, 1: 266. Type locality: [Indonesia,] Java [Jawa].
   
   
   Distribution: Northeastern India, Nepal, Bhutan, China, Taiwan, Hong Kong, Japan, Korea, Thailand, Vietnam, Laos, and Cambodia.
   
   Local distribution: Lao Cai, Son La, Lang Son, Vinh Phuc, Thua Thien Hue, Quang Nam, the Central Highlands (Kon Tum, Gia Lai, Lam Dong), and Dong Nai.

15. **Ambulyx ochracea** Butler, 1885 (Image 2.15)
   
   
   
   Distribution: Northeastern India, Nepal, Bhutan, China, Taiwan, Hong Kong, Japan, Korea, Thailand, Vietnam, Laos, and Cambodia.
   
   Local distribution: Lao Cai, Son La, Lang Son, Vinh Phuc, Thua Thien Hue, Quang Nam, the Central Highlands (Kon Tum, Gia Lai, Lam Dong), and Dong Nai.

16. **Ambulyx pryeri** Distant, 1887 (Image 2.16)
   
   Ambulyx pryeri Distant, 1887, *Annals and Magazine of Natural History*, 20: 271. Type locality: North Borneo [Malaysia].
   
   Materials: 1 female, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.
   
   Distribution: Malaysia, Philippines, Indonesia, Singapore, Thailand, and Vietnam.
   
   Local distribution: Vinh Phuc, Thua Thien Hue, Quang Nam, and the Central Highlands (Dak Nong).

17. **Ambulyx schauffelbergeri** Bremer & Grey, 1853* (Image 2.17)
   
   
   
   Distribution: China, Japan, Korea, and Vietnam.
   
   Local distribution: Nghe An and the Central Highlands (Kon Tum, Dak Nong).

18. **Ambulyx sericeipennis** Butler, 1875 (Image 2.18)
   
   
   
   Distribution: Northern Pakistan, Nepal, Bhutan, northern India, Myanmar, China, Taiwan, Thailand, Vietnam, Laos, Cambodia, Indonesia (Java), and Philippines.
   
   Local distribution: Lao Cai, Lang Son, Vinh Phuc, Quang Ninh, Nghe An, Quang Tri, Thua Thien Hue, Khanh Hoa, and the Central Highlands (Kon Tum, Gia Lai, Lam Dong).

19. **Ambulyx substrigilis** Westwood, 1847 (Image 2.19)
   
   Sphinx substrigilis Westwood, 1847, *The Cabinet of Oriental Entomology*: [61], pl. 30, fig. 2. Type locality:
Image 2. Species pictures of the genus *Ambulyx* of the subfamily Smerinthinae Grote & Robinson, 1865.


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Sylhet [Bangladesh].

Materials: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: Sri Lanka, northern and southern India, Nepal, Bhutan, Bangladesh, Thailand, Vietnam, Malaysia, Philippines, and Indonesia.

Local distribution: Lai Chau, Lao Cai, Lang Son, Vinh Phuc, Ninh Binh, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, and the Central Highlands (Dak Nong), and Dong Nai.

20. *Ambulyx tobii* (Inoue, 1976) * (Image 2.20)


Type locality: [♂] Japan: Nakatsugawa, Awajishima, Sumoto City.


Distribution: China, Taiwan, Japan, Korea, and Vietnam.

Local distribution: Vinh Phuc, Thua Thien Hue, and the Central Highlands (Gia Lai, Dak Nong).

**Genus Amplypterus Hübner, [1819]**

21. *Amplypterus mansoni* (Clark, 1924) (Image 3.21)


Local distribution: Lao Cai, Thua Thien Hue, and the Central Highlands (Kon Tum, Gia Lai, Lam Dong).

22. *Amplypterus panopus* (Cramer, 1779) (Image 3.22)

*Sphinx panopus* Cramer, 1779, *Uitlandsche Kapellen*, 3: 50, pl. 224, figs A, B. Type locality: Java [Indonesia].
Materials: 2 females, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.


Local distribution: Lao Cai, Lang Son, Vinh Phuc, Hanoi, and the Central Highlands (Dak Nong).

Genus *Anambulyx* Rothschild & Jordan, 1903

23. *Anambulyx elwesi* (Druce, 1882)

*Ambulyx elwesi* Druce, 1882, *Entomologist’s Monthly Magazine*, 19: 17. Type locality: Darjiling [India].

Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: northern Pakistan, northern and northeastern India, Nepal, Bhutan, Myanmar, southwestern China, northern Thailand, and Vietnam.

Local distribution: Lao Cai, Lang Son, Vinh Phuc, Thua Thien Hue, and the Central Highlands (Gia Lai, Lam Dong).

Genus *Barbourion* Clark, 1934

24. *Barbourion lemaii* (Le Moult, 1933) (Image 3.24)

*Callambulyx lemaii* Le Moult, 1933, *Novitates Entomologicae*, 3: 19, pl.1, fig. 7. Type locality: Chapa [Tonkin] (Sa Pa: Vietnam).


Distribution: Myanmar, China, Thailand, Vietnam, and Laos.

Local distribution: Lao Cai, Vinh Phuc, Thua Thien Hue, and the Central Highlands (Kon Tum, Gia Lai, Lam Dong).

Genus *Callambulyx* Rothschild & Jordan, 1903


Materials: 1 male, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 700 m, coll. Q.T. Le.

Distribution: Myanmar, China, Thailand, Vietnam, Laos, and Indonesia (Sumatra).

Local distribution: Lang Son, Vinh Phuc, Nghe An, and the Central Highlands (Lam Dong).

Genus *Craspedortha* Mell, 1922

28. *Craspedortha porphyria* (Butler, 1876) (Image 3.28)

*Daphnusa porphyria* Butler, 1876, *Transactions of the Zoological Society of London*, 9: 640. Type locality: Darjeeling [India].


Distribution: India, Nepal, China, Thailand, Vietnam, and Laos.

Local distribution: Lao Cai, Bac Giang, Ninh Binh, Nghe AnQuang Binh, Thua Thien Hue, Quang Nam, Khanh Hoa, and the Central Highlands (Kon Tum, Gia Lai, Lam Dong), Dong Nai.
Remarks: This species was recorded previously by Hoang et al. (2011).
- Distribution: Thailand, Laos, China, and Vietnam.
- Local distribution: Lang Son, Quang Ninh, Quang Binh, Quang Tri, and the Central Highlands.

Genus Parum Rothschild & Jordan, 1903
30. Parum colligata (Walker, 1856)

Daphnusa colligata Walker, 1856, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 8: 238. Type locality: [Northern China].

Materials examined: None

Remarks: This species was recorded previously by Hoang et al. (2011).
- Distribution: India, Myanmar, China, Japan, Taiwan, Korea, Thailand, Vietnam, Laos, and Phillipines.
- Local distribution: Lao Cai, Yen Bai, Cao Bang, Lang Son, Thai Nguyen, Vinh Phuc, Quang Ninh, Ninh Binh, Nghe An, Quang Binh, Quang Nam, the Central Highlands, and Dong Nai.

Genus Cypa Walker, 1865

31. Cypa decolor (Walker, 1856)* (Image 3.31)

*Smerinthus decolor* Walker, 1856, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 8: 255. Type locality: Hindostan [India].


- Local distribution: Quang Binh, Thua Thien Hue, the Central Highlands (Gia Lai, Dak Nong), and Binh Phuoc.
32. *Cypa enodis* Jordan, 1931
*Cypa enodis* Jordan, 1931, *Novitates Zoologicae*, 36: 240. Type locality: Assam [India].
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Local distribution: Lai Chau, Lao Cai, Lang Son, Thua Thien Hue, and the Central Highlands (Gia Lai).

Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: Myanmar, Thailand, and Vietnam.
Local distribution: Thua Thien Hue and the Central Highlands.

Genus *Rhodoprasina* Rothschild & Jordan, 1903
34. *Rhodoprasina callantha centrovietnam* Brechlin, 2015 (Image 3.34)
Distribution: Thailand, Vietnam and Laos.
Local distribution: Lai Chau, Lao Cai, and the Central Highlands (Kon Tum, Gia Lai).

Genus *Smerinthulus* Huwe, 1895
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: Vietnam
Local distribution: the Central Highlands

*Smerinthulus baokimae* Brechlin, 2015, *Entomo-Satsphingia*, 8: 5. Type locality: Da Nang, Ba Na Hills. [Vietnam].
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: Vietnam and Laos
Local distribution: Lao Cai and the Central Highlands.

Genus *Smerinthulus* Latreille, [1802]
37. *Smerinthulus szechuanus* (Clark, 1938)
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: China and Vietnam
Local distribution: the Central Highlands

Genus *Clanis* Hübner, [1819]
38. *Clanis bilineata* Walker, 1866
*Basiana bilineata* Walker, 1866, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 35: 1857. Type locality: Darjeeling [India].
Materials examined: None
Remarks: This species was recorded previously by Hoang et al. (2011).
Distribution: India, Nepal, China, Thailand, and Vietnam.
Local distribution: Lao Cai, Lang Son, Quang Ninh, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, the Central Highlands, and Dong Nai.

Distribution: China, Thailand, Vietnam, and Laos.
Local distribution: Lao Cai, Vinh Phuc, Quang Ninh, Nghe An, Thua Thien Hue, Quang Nam, the Central Highlands (Gia Lai).

40. *Clanis undulosa gigantea* Rothschild, 1894
*Clanis gigantea* Rothschild, 1894, *Novitates Zoologicae*, 1: 96. Type locality: Assam [N India].
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: Northeastern India, Nepal, Bhutan, China, Thailand, Vietnam, and Malaysia.
Local distribution: Lai Chau, Lao Cai, Hoa Binh, Thua Thien Hue, and the Central Highlands.
Genus *Leucophlebia* Westwood, 1847

41. *Leucophlebia lineata* Westwood, 1847

*Leucophlebia lineata* Westwood, 1847, *The Cabinet of Oriental Entomology*: [46], pl. 22, fig.2. Type locality: Assam [India].

Materials examined: None

Remarks: This species was recorded previously by both Hoang et al. (2011) and Zolotuhin & Ryabov (2012).

Distribution: Sri Lanka, India, Nepal, China, Taiwan, Thailand, Vietnam, Malaysia, Philippines, and Indonesia.

Local distribution: Lao Cai, Vinh Phuc, Hanoi, Quang Tri, the Central Highlands, and Dong Nai.

Genus *Daphnusa* Walker, 1856

42. *Daphnusa sinocontinentalis* Brechlin, 2009 (Image 4.42)


Distribution: India, Myanmar, China, Thailand, Vietnam, Laos, and Cambodia.

Local distribution: Vinh Phuc, Quang Ninh, Bac Giang, Ninh Binh, Thanh Hoa, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, the Central Highlands (Gia Lai, Dak Nong), Dong Nai.

Genus *Marumba* Moore, 1882

43. *Marumba crisata* (Butler, 1875)

*Triptogon crisata* Butler, 1875, *Proceedings of the Zoological Society of London*, 1875: 253. Type locality: Darling [India].

Materials examined: 1 male, v.2020, Dak Nong.
province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: India, Nepal, Bhutan, China, Thailand, Vietnam, Laos, Indonesia and Singapore.

Local distribution: Lai Chau, Lao Cai, Lang Son, Vinh Phuc, Nghe An, and the Central Highlands (Dak Nong).

44. Marumba dyras (Walker, 1856) (Image 4.44)


Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: India, Nepal, Bhutan, Andaman & Nicobar Islands, Myanmar, China, Taiwan, Thailand, Vietnam, Cambodia, Laos, Malaysia, Indonesia, and Philippines.

Local distribution: Tuyen Quang, Lang Son, Quang Ninh, Ninh Binh, Nghe An, Quang Tri, Thua Thien Hue, the Central Highlands (Gia Lai, Lam Dong, Dak Nong), and Dong Nai.

45. Marumba sperchius (Ménétriés, 1857) (Image 4.45)

Smerinthus sperchius Ménétriés, 1857, *Classis Insectorum Ordo Lepidopterorum*, 2: 137, pl. 13, fig. 5. Type locality: [Japan].

Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: Northern Pakistan, northern India, Nepal, Bhutan, Russian Far East, China, Taiwan, Korea, Japan, Thailand, Vietnam, Laos, and Indonesia (Sumatra).

Local distribution: Hoa Binh, Lai Chau, Lao Cai, Vinh Phuc, Lang Son, Thua Thien Hue, and the Central Highlands (Gia Lai, Lam Dong, Dak Nong).

Genus Morwennius Cassidy, Allen & Harman, 2002

46. Morwennius decoratus (Moore, 1872) (Image 4.46)


Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: India, China, Laos, Thailand, Vietnam, and Indonesia (Sumatra).

Local distribution: Ninh Binh, and the Central Highlands (Dak Nong).

Genus Phyllosphinxia Swinhoe, 1897

47. Phyllosphinxia dissimilis berdievi Zolotuhin & Ryabov, 2012 (Image 4.47)


Materials examined: 1 male, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.

Distribution: Myanmar, China, Thailand, Vietnam, and Laos.

Local distribution: Lai Chau, Lao Cai, Nghe An, Ha Tinh, Quang Binh, and the Central Highlands (Lam Dong).

Subfamily Macroglossinae Harris, 1839

Genus Acosmerycoides Mell, 1922

48. Acosmerycoides harterti (Rothschild, 1895) (Image 4.48)

*Ampelophaga harterti* Rothschild, 1895, *Deutsche Entomologische Zeitschrift, Iris*, 7: 299. Type locality: Assam [India].


Distribution: India, Bhutan, Myanmar, China, Taiwan, Thailand, Vietnam, Laos and Malaysia.

Local distribution: Lang Son, Vinh Phuc, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Dak Nong), and Dong Nai.

Genus Ampelophaga Bremer & Grey, 1853

49. Ampelophaga khasiana Rothschild, 1895 (Image 4.49)

*Ampelophaga khasiana* Rothschild, 1895, *Novitates Zoologicae*, 2: 482. Type locality: Assam [India].

Materials examined: 1 male, v.2019, Kon Tum province, Dak Glei District, 15.067°N, 107.733°E, 1,053 m, coll. V.L Vu.

Distribution: India, Nepal, Bhutan, Myanmar, China and Vietnam.

Local distribution: Lai Chau, Lao Cai, Lang Son, Cao Bang, Quang Tri, Khanh Hoa, and the Central Highlands (Kon Tum).

50. Ampelophaga rubiginosa Bremer & Grey, 1852* (Image 4.50)

*Ampelophaga rubiginosa* Bremer & Grey, 1853, in Motschulsky (ed.), *Études Entomologiques*, 1: 61. Type locality: [North China].

Materials examined: 1 male, v.2022, Lam Dong province, Chua Thien Hue, Quang Nam, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Dak Nong).
province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.

Distribution: Afghanistan, Pakistan, India, Nepal, Bhutan, Myanmar, Peninsula, the Russian Far East, China, Hong Kong, Japan, Korea, Thailand, Laos, Malaysia, and Indonesia (northern Sumatra).

Local distribution: Lai Chau, Lao Cai, Vinh Phuc, Thua Thien Hue, and the Central Highlands (Lam Dong, Gia Lai).

Genus *Elibia* Walker, 1856
51. *Elibia dolichoides* (Felder, C. & Felder, R., 1874) (Image 4.51)


Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).


Local distribution: Cao Bang, Vinh Phuc, Bac Giang, Ninh Binh, Nghe An, Thua Thien Hue, Quang Nam, and the Central Highlands.

52. *Elibia dolichus* (Westwood, 1847) (Image 4.52)

*Sphinx dolichus* Westwood, 1847, *The Cabinet of Oriental Entomology*: [61], pl. 30, fig. 1. Type locality: Silhet [Bangladesh].


Distribution: India, Nepal, Bangladesh, China, Thailand, Vietnam, Malaysia, Philippines and Indonesia (Sumatra, Borneo, Java).

Local distribution: Quang Ninh, Nghe An, Quang Binh, Quang Tri, the Central Highlands (Kon Tum, Gia Lai), and Dong Nai.

Genus *Enpinanga* Rothschild & Jordan, 1903
53. *Enpinanga assamensis* (Walker, 1856)* (Image 4.53)


Distribution: India, Sri Lanka, Bangladesh, southern China, Hong Kong, Thailand, Vietnam, Laos, Cambodia, and Malaysia.

Local distribution: Vinh Phuc, Bac Giang, Quang Ninh, Nghe An, and the Central Highlands (Gia Lai, Lam Dong).

54. *Enpinanga borneensis* (Butler, 1879)


Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: Thailand, Vietnam, Malaysia, and Indonesia (Sumatra, Borneo, Java).

Local distribution: the Central Highlands.

Genus *Acosmeryx* Boisduval, [1875]
55. *Acosmeryx anceus subdentata* Rothschild & Jordan, 1903 (Image 5.55)


Distribution: India, Nepal, Bhutan, China, Thailand, Vietnam, Malaysia, Philippines, and Indonesia.

Local distribution: Lai Chau, Lao Cai, Lang Son, Quang Ninh, Vinh Phuc, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, the Central Highlands (Kon Tum, Gia Lai, Lam Dong, Dak Nong), and Dong Nai.

56. *Acosmeryx castanea* Rothschild & Jordan, 1903


Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: China, Taiwan, Japan, Korea, and Vietnam.

Local distribution: Ninh Binh, Quang Nam, and the Central Highlands (Kon Tum).

57. *Acosmeryx naga* (Moore, [1858]) (Image 5.57)


Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: India, Nepal, Bhutan, Russian Far East,
China, Taiwan, Japan, Korea, Thailand, Vietnam, and Malaysia.

Local distribution: Lai Chau, Lao Cai, Cao Bang, Lang Son, Vinh Phuc, Nghe An, Thua Thien Hue, Khanh Hoa, and the Central Highlands (Kon Tum, Gia Lai, Dak Nong).

58. *Acosmeryx omissa* Rothschild & Jordan, 1903* (Image 5.58)


Materials examined: 1 male, v.2019, Kon Tum province, Dak Glei District, 15.067°N, 107.733°E, 1,053 m, coll. V.L Vu.


Local distribution: Lao Cai, Ninh Binh, Nghe An, Quang Binh, and the Central Highlands (Kon Tum, Dak Nong).

59. *Acosmeryx pseudomissa* Mell, 1922 (Image 5.59)


Materials examined: 1 male, v.2019, Kon Tum province, Dak Glei District, 15.067°N, 107.733°E, 1,053 m, coll. V.L Vu.

Distribution: China, Thailand, Vietnam, and Laos.

Local distribution: Vinh Phuc, Ninh Binh, Nghe An, Quang Nam, and the Central Highlands (Kon Tum, Gia Lai, Dak Nong).

60. *Acosmeryx pseudonaga* Butler, 1881 (Image 5.60)

*Acosmeryx pseudonaga* Butler, 1881, *Illustrations of Typical Specimens of Lepidoptera Heterocera in the Collection of the British Museum*, 5: 2. Type locality: [Bhutan].

Materials examined: 1 male, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E,
1,700 m, coll. Q.T. Le.

Distribution: Western and northeastern India, Bhutan, China, Thailand, Vietnam, Laos, Malaysia, and Indonesia.

Local distribution: Lao Cai, Tuyen Quang, Vinh Phuc, Quang Ninh, Ninh Binh, Thanh Hoa, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, the Central Highlands (Kon Tum, Gia Lai, Lam Dong, Dak Nong), and Dong Nai.

61. Acosmeryx shervillii Boisduval, 1875 (Image 5.61)
Acosmeryx shervillii Boisduval, 1875, *Histoire Naturelle des Insectes. Species général des Lépidoptères Hétérocères*, 1: 217. Type locality: [India].

Materials examined: 1 male, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.

Distribution: Northern India, Sri Lanka, Nepal, Bhutan, southern China, Hong Kong, Thailand, Vietnam, Malaysia, and Indonesia (Sumatra, Borneo, Java).

Local distribution: Hoa Binh, Tuyen Quang, Cao Bang, Lang Son, Quang Ninh, Vinh Phuc, Ninh Binh, Thanh Hoa, Quang Binh, Quang Tri, Thua Thien Thien Hue, Quang Nam, the Central Highlands (Lam Dong, Gia Lai, Dak Nong), and Dong Nai.

62. Acosmeryx sericeus (Walker, 1856) (Image 5.62)


Distribution: Northeastern India, Nepal, Bangladesh, southern China, Thailand, Vietnam, and Malaysia.

Local distribution: Lai Chau, Lao Cai, Lang Son, Bac Giang, Quang Ninh, Vinh Phuc, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, and the Central Highlands (Kon Tum, Gia Lai, Lam Dong, Dak Nong).

Genus Dahira Moore, 1888

63. Dahira obliquifascia siamensis Melichar & Haxaire, 2021 (Image 6.63)


Distribution: Myanmar, China, Thailand, Vietnam, and Laos.

Local distribution: Khanh Hoa and the Central Highlands (Kon Tum, Gia Lai).

64. Dahira orlovi (Zolotuhin & Ryabov, 2012)

Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012) as *Dahira pinratanai orlovi*. The subspecies *orlovi* was raised to species *orlovi* (Haxaire et al., 2021).

Distribution: Vietnam.

Local distribution: the Central Highlands (Gia Lai)

Genus Angonyx Boisduval, [1875]

65. Angonyx testacea (Walker, 1856) (Image 6.65)


Distribution: India, Nepal, Myanmar, China, Taiwan, Thailand, Vietnam, Malaysia, Philippines, and Indonesia (Sumatra, Borneo, Java).

Local distribution: Lai Chau, Lao Cai, Lang Son, Bac Giang, Quang Ninh, Vinh Phuc, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, and the Central Highlands (Kon Tum, Gia Lai, Lam Dong, Dak Nong).

Genus Daphnis Hübner, [1819]

66. Daphnis hypothous crameri Eitschberger & Melichar, 2010 (Image 6.66)


Distribution: India, Sri Lanka, Nepal, Bhutan, Myanmar, southern China, Taiwan, Hong Kong, Thailand, Vietnam, Malaysia, Philippines, western Indonesia, and the Western Palearctic region.

Local distribution: Lai Chau, Lao Cai, Yen Bai, Cao Bang, Lang Son, Thai Nguyen, Vinh Phuc, Hanoi, Ninh Binh, Nghe An, Thua Thien Hue, Quang Nam, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Lam Dong, Dak Nong), and Dong Nai.
67. *Daphnis nerii* (Linnaeus, 1758)

*Sphinx nerii* Linnaeus, 1758, *Systema Naturae* (Edn 10), 1: 490. Type locality: “Unknown”.

Materials examined: None
Remarks: This species was recorded previously by Hoang et al. (2011).


Local distribution: Hanoi, Thua Thien Hue, the Central Highlands, and Ho Chi Minh City.

68. *Daphnis placida placida* (Walker, 1856)

*Darapsa placida* Walker, 1856, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 8: 186. Type locality: Samatra [Indonesia, Sumatra].

Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: India (Andaman & Nicobar Islands), southern China, Thailand, Vietnam, Philippines, Indonesia (Sumatra, Java, Bali, Flores, Timor), northern Australia, Vanuatu, New Caledonia, and Loyalty Islands and Malaysia.

Local distribution: the Central Highlands (Kon Tum)

Genus *Eurypteryx* Felder, C. & Felder, R., 1874

69. *Eurypteryx geoffreyi* Cadiou & Kitching, 1990* (Image 6.69)

Materials examined: 1 female, v.2020, Lam Dong
province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.

DISTRIBUTION: Thailand and Vietnam
Local distribution: Lao Cai and the Central Highlands (Lam Dong).

Genus Macroglossum Scopoli, 1777

70. Macroglossum affictitia (Butler, 1875)

Macroglossum affictitia Butler, 1875, Proceedings of the Zoological Society of London, 1875: 240, pl. 36, fig. 7.
Type locality: Canara [India, Karnataka].
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
DISTRIBUTION: India, Myanmar, Thailand, and Vietnam.
Local distribution: the Central Highlands of Vietnam (Lam Dong).

71. Macroglossum belis (Linnaeus, 1758) (Image 6.71)

Sphinx belis Linnaeus, 1758, Systema Naturae (Edn 10), 1: 493. Type locality: “In calidis regionibus”.
Materials examined: 1 female, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12,016°N, 107,716°E, 920 m, coll. Q.T. Le.
DISTRIBUTION: India, Sri Lanka, Myanmar, Thailand, Vietnam, and Cambodia.
Local distribution: Lao Cai, Vinh Phuc, Ninh Binh, Da Nang, and the Central Highlands (Dak Nong).

72 Macroglossum corythus (Walker, 1856)

Macroglossum corythus Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 92. Type locality: Ceylon [Sri Lanka].
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
DISTRIBUTION: Western and northeastern India, Nepal, Bhutan, Bangladesh, Andaman Islands, eastern & southern China, Taiwan, Hong Kong, Japan, Thailand, Vietnam, Malaysia, Philippines, Indonesia, Wallacea, and Sundaland.
Local distribution: Lao Cai, Yen Bai, Lang Son, Bac Giang, Hai Phong, Vinh Phuc, Ninh Binh, Nghe An, Thua Thien Hue, Da Nang, and the Central Highlands.

73. Macroglossum divergens heliophila Boisduval, ((1875))

Macroglossa heliophila Boisduval, 1875, Histoire Naturelle des Insectes. Species général des Lépidoptères Hétérocères, 1: 354. Type locality: [Indonesia].
Materials examined: None
Remarks: This species was recorded previously as Macroglossum heliophila Boisduval, ([1875]) by Zolotuhin & Ryabov (2012).
DISTRIBUTION: Northeastern India, Sri Lanka, China, Taiwan, Japan, Thailand, Vietnam, Philippines, and New Guinea.
Local distribution: Ninh Binh, Nghe An, Thua Thien Hue, and the Central Highlands (Gia Lai).

74. Macroglossum fritzei Rothschild & Jordan, 1903

Macroglossum fritzei Rothschild & Jordan, 1903, Novitates Zoologicae, 9: 654. Type locality: Loo Choo Islands [Ryūkyū Islands: Japan].
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
DISTRIBUTION: China, Japan, Thailand, Vietnam, and Borneo.
Local distribution: Quang Ninh, Vinh Phuc, Nghe An, Da Nang, and the Central Highlands (Gia Lai, Lam Dong).

75. Macroglossum gyrans Walker, 1856

Macroglossum gyrans Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 91. Type locality: [Northern India].
Materials examined: None
Remarks: This species was recorded previously by Hoang et al. (2011).
DISTRIBUTION: India, Sri Lanka, Nepal, Myanmar, Thailand, Vietnam, Malaysia, and Indonesia (Sumatra, Borneo, Java) to Timor.
Local distribution: the Central Highlands (Gia Lai).

76. Macroglossum mitchellii imperator Butler, 1875

Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: India, China, Taiwan, Thailand, Vietnam, Malaysia, and Sumatra.

77. Macroglossum neotroglodytus Kitching & Cadiou, 2000

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78. Macroglossum pyrrhosticta Butler, 1875
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: Southern & northeastern India, Sri Lanka, Nepal, Bhutan, southern China, Taiwan, Thailand, Vietnam, Malaysia, Philippines, and Indonesia.
Local distribution: Son La, Ha Giang, Vinh Phuc, Nghe An, and the Central Highlands (Kon Tum).

79. Nephele hespera (Fabricius, 1775)
Sphinx hespera Fabricius, 1775, Systema Natuarae: 546. Type locality: “India orientali”.
Materials examined: None
Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).
Distribution: Afghanistan, Pakistan, Sri Lanka, throughout India, Nepal, Bhutan, the Andaman Islands, Myanmar, southern China, Hong Kong, Thailand, Vietnam, Laos, Malaysia, Sumatra, and Java.
Local distribution: Lao Cai, Vinh Phuc, Ninh Binh, Nghe An, and the Central Highlands (Gia Lai).

80. Eupanacra busiris (Walker, 1856) (Image 6.80)
Panacra busiris Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 158. Type locality: Silhet [Bangladesh].
Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.
Distribution: North & northeastern India, Nepal, Myanmar, China, Thailand, Vietnam, Laos, Malaysia, and Indonesia.
Local distribution: Cao Bang, Vinh Phuc, Nghe An, Thua Thien Hue, the Central Highlands (Kon Tum, Lam Dong, Dak Nong), and Dong Nai.

81. Eupanacra sinuata (Rothschild & Jordan, 1903) (Image 6.81)
Panacra sinuata Rothschild & Jordan, 1903, Novitates Zoologicae, 9: 537. Type locality: [N India].
Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.
Distribution: India (Arunachal Pradesh, Himachal Pradesh, Assam, Sikkim, Manipur, Meghalaya, Uttarakhando, West Bengal), Nepal, China, northern Thailand, Vietnam Laos, and Malaysia.
Local distribution: Lai Chau, Lao Cai, Hoa Binh, Vinh Phuc, Quang Binh, Thua Thien Hue, Khanh Hoa, and the Central Highlands (Kon Tum, Lam Dong, Dak Nong).

82. Eupanacra variolosa (Walker, 1856) (Image 6.82)
Panacra variolosa Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 8: 156. Type locality: Silhet [Bangladesh].
Distribution: India (Punjab, Himachal Pradesh), the Andaman Islands, Indo-Australian tropics and eastwards into Polynesia as far as Pitcairn and Henderson Island.
Local distribution: Khanh Hoa, the Central Highlands (Kon Tum), and Dong Nai.

83. Gnathothlibus erotus (Cramer, 1777) (Image 6.83)
Sphinx erotus Cramer, 1777, Utlandsche Kapellen, 2: 12, pl. 104, fig. B. Type locality: No locality given.
Distribution: India (Punjab, Himachal Pradesh), the Andaman Islands), Indo-Australian tropics and eastwards into Polynesia as far as Pitcairn and Henderson Island.
Local distribution: Khanh Hoa, the Central Highlands (Kon Tum), and Dong Nai.

84. Cecchenena aegrota (Butler, 1875) (Image 7.84)
Materials examined: 2 males, 2 females, v.2016, Gia Lai province, K’Bang District, Kon Chu Rang NR, 14.471°N,
85. *Cechenena helops* (Walker, 1856) (Image 7.85)


Materials examined: 2 males, 2 females, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.


Local distribution: Lao Cai, Lang Son, Thai Nguyen, Vinh Phuc, Ninh Binh, Thanh Hoa, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Lam Dong), and Dong Nai.

86. *Cechetra lineosa* (Walker, 1856) (Image 7.86)


Materials examined: 2 males, 1 female, v.2022, the Central Highlands of Vietnam, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.

Distribution: Northern India, Nepal, Bhutan, Bangladesh, Myanmar, southern China, Taiwan, Thailand, Vietnam, Malaysia, and Indonesia.

Local distribution: Lai Chau, Lao Cai, Lang Son, Thai Nguyen, Vinh Phuc, Ninh Binh, Thanh Hoa, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Lam Dong), and Dong Nai.

87. *Cechetra minor* (Butler, 1875) (Image 7.87)


Distribution: India, Nepal, Bhutan, China, Taiwan, and Japan, Thailand, and Vietnam.

Local distribution: Lao Cai, Lang Son, Vinh Phuc, Ninh Binh, Nghe An, Thua Thien Hue, Quang Nam, and the Central Highlands (Kon Tum, Gia Lai).

88. *Cechetra subangustata continentalis* Ivshin & Krutov, 2018 (Image 7.88)


Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.


Local distribution: Lao Cai, Yen Bai, Lang Son, Vinh Phuc, Nghe An, Quang Tri, Thua Thien Hue, and the Central Highlands (Dak Nong, Lam Dong, Dak Nong).

89. *Griseosphinx Cadiou & Kitching, 1990* [1816]


Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: Vietnam

Local distribution: Cao Bang, Bac Kan, Thai Nguyen, Ninh Binh, Quang Binh, and the Central Highlands (Dak Nong).

90. *Hippotion boerhaviae* (Fabricius, 1775) (Image 7.90)

*Sphinx boerhaviae* Fabricius, 1775, *Systema Naturae*: 542. Type locality: Locality not stated.

Materials examined: 2 males, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.


Local distribution: Lao Cai, Yen Bai, Lang Son, Vinh Phuc, Nghe An, Quang Tri, Thua Thien Hue the Central Highlands (Dak Nong, Lam Dong), and Dong Nai.

91. *Hippotion celerio* (Linnaeus, 1758)* (Image 7.91)

*Sphinx celerio* Linnaeus, 1758, *Systema Naturae* (Edn 10), 1: Type locality: Unknown.

Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N,
107.716°E, 920 m, coll. Q.T. Le.

Distribution: Africa, southern Europe, Arabian Peninsula, Pakistan, India, Nepal, Bhutan, southern China, Hong Kong, and southern Japan, Vietnam, and Australia.

Local distribution: Lao Cai, Vinh Phuc, Hanoi, Thua Thien Hue, and the Central Highlands (Dak Nong).

93. **Hippotion rosetta** (Swinhoe, 1892) (Image 7.93)


Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).


Local distribution: Lao Cai, Hanoi, and the Central Highlands (Kon Tum).
Binh, Nghe An, Quang Binh, Thua Thien Hue, the Central Highlands (Lam Dong, Kon Tum), and Dong Nai.

94. *Hippotion velox* (Fabricius, 1793)* (Image 7.94)


Distribution: India, China, Taiwan, Thailand, Vietnam, Malaysia, Philippines, Indonesia, and Singapore.

Local distribution: Lao Cai, Quang Binh, and the Central Highlands (Lam Dong).

Genus *Pergesa* Walker, 1856

95. *Pergesa acteus* (Cramer, 1779) (Image 8.95)

*Sphinx acteus* Cramer, 1779, *Uitlandsche Kapellen*, 3: 93, pl.248, fig. A. Type locality: [Java].


Distribution: India, Sri Lanka, Nepal, Bhutan, Myanmar, China, Taiwan, Hong Kong, Japan, Thailand, Vietnam, Malaysia, Philippines, Indonesia, Sundaland, and Moluccas.

Local distribution: Lai Chau, Lao Cai, Cao Bang, Lang Son, Quang Ninh, Vinh Phuc, Ninh Binh, Nghe An, Thua Thien Hue, the Central Highlands (Kon Tum, Gia Lai, Dak Nong), and Dong Nai.

Genus *Rhagastis* Rothschild & Jordan, 1903

96. *Rhagastis acuta* (Walker, 1856)* (Image 8.96)


Distribution: India, Nepal, Bhutan, eastern Bangladesh, Myanmar, China (Guizhou, Yunnan, Hainan), Thailand, Vietnam, Laos, Cambodia, Malaysia, Philippines (Palawan) and Indonesia (Sumatra, Java).

Local distribution: Nghe An, Quang Binh, Quang Nam, and the Central Highlands (Gia Lai).

97. *Rhagastis albomarginatus* (Rothschild, 1894)

*Metopius albomarginatus* Rothschild, 1894, *Novitates Zoologicae*, 1: 78. Type locality: Assam [India].

Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: India, Nepal, Bhutan, Myanmar, China, Hong Kong, Vietnam, Sumatra, Java, Borneo.

Local distribution: Lai Chau, Lao Cai, Lang Son, Bac Giang, Vinh Phuc, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, and the Central Highlands.

98. *Rhagastis castor aurifera* (Butler, 1875) (Image 8.98)


Distribution: Northeastern India, Nepal, Bhutan, southern China, Thailand, and Vietnam.

Local distribution: Lao Cai, Cao Bang, Lang Son, Vinh Phuc, Quang Ninh, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, and the Central Highlands (Kon Tum, Gia Lai, Dak Nong).


Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: Northern Pakistan, India, Nepal, Bhutan; southwestern China, Thailand, and northern Vietnam.

Local distribution: Lai Chau, Cao Bang, and the Central Highlands (Gia Lai).

100. *Rhagastis olivacea* (Moore, 1872)


Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).


Local distribution: Lai Chau, Lao Cai, Vinh Phuc, and the Central Highlands (Kon Tum).


Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Local distribution: Lao Cai, Cao Bang, Lang Son, Quang Ninh, Nghe An, Quang Binh, Khanh Hoa, and the Central Highlands (Gia Lai, Lam Dong).

Genus Theretra Hübner, [1819]

102. Theretra alecto (Linnaeus, 1758) (Image 8.102)

*Sphinx alecto* Linnaeus, 1758, *Systema Naturae* (Edn 10), 1: 492. Type locality: [India].

Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: Greece, Bulgaria, Turkey, Iran, Turkmenistan, Uzbekistan, Kyrgyzstan, Afghanistan, Iraq, Lebanon, Israel, and Egypt, Pakistan, India, Sri Lanka, Nepal, Bhutan, China, Taiwan, Hong Kong, Japan, Vietnam, Philippines, Indonesia.

Local distribution: Lao Cai, Cao Bang, Lang Son, Quang Ninh, Nghe An, Quang Binh, Khanh Hoa, and the Central Highlands (Gia Lai, Lam Dong).

103. Theretra boisduvalii (Bugnion, 1839) (Image 8.103)


Materials examined: 1 male, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.

Distribution: Greece, India, Sri Lanka, Taiwan, Thailand, Vietnam, Laos and Indonesia.

Local distribution: Lao Cai, Vinh Phuc, Ninh Binh, and the Central Highlands (Lam Dong).

104. Theretra clotho (Drury, 1773) (Image 8.104)

*Sphinx clotho* Drury, 1773, *Illustrations of Natural History. Wherein are exhibited upwards of two hundred and forty figures of exotic insects*, 2: Index [91], pl. 28: 1. Type locality: Madras [India].

Materials examined: 1 male, 1 female, x.2017, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: Northern Pakistan, India, Sri Lanka, Nepal, Bhutan, Myanmar, southern China, Taiwan, South Korea, Japan, Thailand, Vietnam, Malaysia, Singapore, Indonesia, Sundaland, Philippines, and Sundaland.

Local distribution: Lao Cai, Vinh Phuc, Quang Ninh, Ninh Binh, Quang Tri, Thua Thien Hue, Quang Nam, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Dak Nong), and Dong Nai.

105. Theretra lucasii (Walker, 1856) (Image 8.105)


Distribution: India, Sri Lanka, Nepal, Bangladesh, Myanmar, China, Hong Kong Taiwan, Thailand, Vietnam, Laos, Cambodia, , Philippines, and Indonesia, Sumatra, Borneo, Java, the Lesser Sunda Islands.

Local distribution: Lang Son, Quang Ninh, Ninh Binh, Nghe An, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, the Central Highlands (Gia Lai), and Dong Nai.

106. Theretra lycetus (Cramer, 1775) (Image 8.106)

*Sphinx lycetus* Cramer, 1775, *Uitlandsche Kapellen*, 1: 96. Type locality: Bengal [India], Coromandel, Ceylon [Sri Lanka].

Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.


Local distribution: Lai Chau, Lao Cai, Lang Son, Vinh Phuc, Ninh Binh, and the Central Highlands (Dak Nong).

107. Theretra nessus (Drury, 1773) (Image 8.107)

*Sphinx nessus* Drury, 1773, *Illustrations of Natural History. Wherein are exhibited upwards of two hundred and forty figures of exotic insects*, 2: index [91], pl. 76, fig. 1. Type locality: Madras [India].

Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: India, Sri Lanka, Nepal, Bhutan, Myanmar, southern China, Taiwan, South Korea, Japan, Thailand, Vietnam, Malaysia, Singapore, Indonesia, Sundaland, Philippines, and Australia.

Local distribution: Lai Chau, Lao Cai, Lang Son, Vinh Phuc, Ninh Binh, Hai Phong, Nghe An, Quang Tri, Thua Thien Hue, Quang Nam, Khanh Hoa, the Central Highlands (Kon Tum, Gia Lai, Lam Dong, Dak Nong), and Dong Nai.

108. Theretra oldenlandiae (Fabricius, 1775)* (Image 8.108)

*Sphinx oldenlandiae* Fabricius, 1775, *Systema Naturae*: 542. Type locality: “Indiae Oldenlandiis”.

Materials examined: 1 male, xii.2020, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m.
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95—*Pergesa acteus* (Cramer, 1779) | 96—*Rhagastis acuta* (Walker, 1856) | 98—*Rhagastis castor aurifera* (Butler, 1875) | 103—*Theretra boisduvalii* (Bugnon, 1839) | 104—*Theretra clotho* (Drury, 1773) | 105—*Theretra lucasi* (Walker, 1856) | 106—*Theretra lycetus* (Cramer, 1775) | 107—*Theretra nessus* (Drury, 1773) | 108—*Theretra oldenlandiae* (Fabricius, 1775) | 109—*Theretra pallicosta* (Walker, 1856) | 112—*Theretra sumatrensis* (Joicey & Kaye, 1917) | 113—*Theretra tibetiana* Vaglia & Haxaire, 2010.

**Image 8. Species pictures of the genera Hippotion, Pergesa, and Rhagastis of the subfamily Macroglossinae Harris, 1839.**

- **95. **Pergesa acteus** (Cramer, 1779)
- **96. **Rhagastis acuta** (Walker, 1856)
- **98. **Rhagastis castor aurifera** (Butler, 1875)
- **103. **Theretra boisduvalii** (Bugnon, 1839)
- **104. **Theretra clotho** (Drury, 1773)
- **105. **Theretra lucasi** (Walker, 1856)
- **106. **Theretra lycetus** (Cramer, 1775)
- **107. **Theretra nessus** (Drury, 1773)
- **108. **Theretra oldenlandiae** (Fabricius, 1775)
- **109. **Theretra pallicosta** (Walker, 1856)
- **112. **Theretra sumatrensis** (Joicey & Kaye, 1917)

**Distribution:**
Northern Afghanistan, northern Pakistan, India, Sri Lanka, Nepal, Bhutan, Myanmar, China, Taiwan, Hong Kong, South Korea, Japan, Vietnam, Laos, Malaysia, The Solomon Islands, New Guinea, and Philippines.

Local distribution: Lai Chau, Lao Cai, Vinh Phuc, Ninh Binh, Nghe An, Thua Thien Hue, and the Central Highlands (Gia Lai, Lam Dong).

**109. **Theretra pallicosta** (Walker, 1856) (Image 8.109)

*Chaerocampa pallicosta* Walker, 1856, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 8: 145. Type locality: Silhet [Bangladesh], Hong Kong [China].


Distribution: India, Sri Lanka, Nepal, Bangladesh, Myanmar, China, Hong Kong, Thailand, Vietnam, Malaysia, and Indonesia.

Local distribution: Lao Cai, Lang Son, Vinh Phuc, Quang Ninh, Ninh Binh, Nghe An, Thua Thien Hue, and the Central Highlands (Gia Lai, Lam Dong).

**110. **Theretra silhetensis** (Walker, 1856)

*Chaerocampa silhetensis* Walker, 1856, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 8: 143. Type locality: Ceylon [Sri Lanka], [North India], Silhet [Bangladesh].

Materials examined: None

Remarks: This species was recorded previously by Hoang et al. (2011).

Distribution: India, Sri Lanka, Nepal, Bhutan, Bangladesh, Myanmar, the Andaman Islands, China, Taiwan, Japan, Thailand, Vietnam, Malaysia, and Indonesia.
Local distribution: Lao Cai, Cao Bang, Lang Son, Vinh Phuc, Bac Giang, Quang Binh, Thua Thien Hue, the Central Highlands (Kon Tum), and Dong Nai.

111. Theretra suffusa (Walker, 1856)

_Chaerocampa suffusa_ Walker, 1856, _List of the Specimens of Lepidopterous Insects in the Collection of the British Museum_, 8: 146. Type locality: [Hong Kong].

Materials examined: None

Remarks: This species was recorded previously by Zolotuhin & Ryabov (2012).

Distribution: India, Sri Lanka, Nepal, southern China, Taiwan, southern Japan (Ryukyu Archipelago), Thailand, Vietnam, Cambodia, Laos, Malaysia, Singapore, Indonesia (Sumatra, Java, Kalimantan, Sulawesi), and Palawan.

Local distribution: Lang Son, Vinh Phuc, Ninh Binh, Quang Binh, Quang Tri, and the Central Highlands (Kon Tum).

112. Theretra sumatrensis (Joicey & Kaye, 1917) * (Image 8.112)*


Materials examined: 1 male, v.2022, Lam Dong province, Bidoup-Nui Ba NP, 20.333°N, 105.583°E, 1,700 m, coll. Q.T. Le.


Local distribution: Lai Chau, Lao Cai, Lang Son, Vinh Phuc, Ninh Binh, Nghe An, Thua Thien Hue, Quang Nam, and the Central Highlands (Lam Dong).

113. Theretra tibetiana Voglia & Haxaire, 2010 (Image 8.113)*

_Theretra tibetiana_ Voglia & Haxaire, 2010, _The European Entomologist_, 3(1): 60. Type locality: Tibet [China].

Materials examined: 1 male, v.2020, Dak Nong province, Krong No District, Nam Nung NR, 12.016°N, 107.716°E, 920 m, coll. Q.T. Le.

Distribution: Northeastern India, Bhutan, China, Thailand, and Vietnam.

Local distribution: Lao Cai, Lang Son, Nghe An, Thua Thien Hue, Quang Nam, the Central Highlands (Kon Tum, Dak Nong), and Dong Nai.

**DISCUSSION**

Hoang et al. (2011) reported 23 species of hawkmoth in the Central Highlands of Vietnam, including one unidentified species, _Smerinthulus_ sp.1. Therefore, this species is not listed in the Result.

The genus _Eurypteryx_ Felder & Felder, 1874 (Sphingidae: Macroglossinae) is limited to the Oriental and Australian regions (Jiang & Wang 2020) and currently comprises two species in Vietnam, _Eurypteryx geoffreyi_ Cadiou & Kitching, 1990 and _Eurypteryx bhaga_ (Moore, 1866) (Zolotuhin & Ryabov 2012). Both species are rare in Vietnam. Zolotuhin & Ryabov (2012) reported that the only male of _Eurypteryx geoffreyi_ was collected at an elevation of about 1,600 m in the disturbed humid primary forest on Fansipan mountain in northwestern Vietnam. In our surveys, we collected a female specimen of the species at an elevation of about 1,450 m in an evergreen broad-leaf forest while feeding on flowers of a low tree at Giang Ly ranger station in Bidoup-Nui Ba National Park, Lam Dong province. Its distribution is broader than previous records suggest, not limited to the north-west but also occurring in the Central Highlands and maybe has an even wider distribution.

Contrasted with prior studies, our updated list includes 16 species documented in both the 2011 and 2012 lists. The total of 78 species closely aligns with Zolotuhin & Ryabov’s (2012) report, with 12 species matching Hoang et al.’s (2011) list. The key highlight is the addition of 14 new species to the Sphingidae checklist for the Central Highlands of Vietnam.

**REFERENCES**


16–19.


Hoang, V.T., T.D. Tran & D.T. Ta (2011). Kể qua điều tra bọ Cánh vảy (Lepidoptera, Insetica) dọc cung đường Hồ Chí Minh qua khu vực Tây Nguyên (In English: Result of the survey on butterflies and moths (Lepidoptera, Insecta) along the Ho Chi Minh trail in the Central Highlands of Vietnam.)
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Vaglia, T., J. Hawaire, I. Kitching & M. Lyous (2010). Contribution à la connaissance des Theretra Hübner, 1819, des complexes clotho (Drury, 1773), boisduvali (Bugnion, 1839) et rhesus (Boisduval, [1875]) d'Asie continentale et du sud-est (Lepidoptera, Sphingidae). The European Entomologist 3(1): 4177


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