

The Pterophoridae fauna (Lepidoptera) of Thailand

P.Ya. Ustjuzhanin¹, V.N. Kovtunovich²

¹Altai State University, Lenina 61, Barnaul, RU–656049, Russia

²Moscow Society of Nature Explorers, Bol'shaya Nikitskaya 6, Moscow, RU–103009 Russia

E-mail: petrust@mail.ru (corresponding author)

Submitted: 17.09.2017. Accepted: 30.11.2017

We give a full list of Pterophoridae species of Thailand fauna, including type habitats, synonymy, worldwide distribution (adding new data). For 4 species new for Thailand we provide data of the collected material. Now the plume moths fauna of Thailand includes 38 species.

Key words: Lepidoptera; Pterophoridae; plume moths; Thailand; distribution; new data

Introduction

Due to its tropical and sub-equatorial climate, Thailand is very rich and diverse in flora and fauna. Its considerable length from north to south (over 1500 km) and a large vertical drop (more than 2500 m) led to the emergence of a wide variety of natural zones. The Pterophoridae of Thailand are relatively well studied. One of the first publications on the Pterophoridae of Thailand indicated 5 species: *Deuterocopus socotranus*, *Platyptilia* [*Stenoptilodes*] *taprobanes*, *Nippoptilia vitis*, *Sphenarches anisodactylus*, *Megalorhipida leucodactyla* (as *Trichoptilus defectalis*). All these specimens were collected in the province Chiang Mai of north-western Thailand Yano (1961). The next paper, specifically dedicated to the fauna of plume moths of Thailand, has recently been published by Ernst Arenberger (2010). This study gives an overview of Pterophoridae 28 species from Thailand. Then, two more species of the genus *Xyroptilia*, *dohertyi* and *siami* were described from Thailand Kovtunovich & Ustjuzhanin (2006). Having examined new Pterophoridae specimens from Thailand, the authors of this article have added three more new species to the Thailand fauna of plume moths: *Deuterocopus atrapex*, *Platyptilia ignifera*, *Oxyptilus causodes* and *Buckleria paludum*.

As a result, taking into account all the published data, we provide a list of 38 Pterophoridae species now known for the Thailand fauna. The species indicated for the fauna of Thailand for the first time are marked with an asterisk *.

Material and Methods

In writing this work, we have analyzed all the major literature sources, which contain data on the distribution of plume moths in Thailand Yano (1961, 1962, 1963), Yano et al. (1996); Gielis (2003); Li et al. (2003); Ustjuzhanin et Kovtunovich (2009); Arenberger (2010). In determining the new material collected by the authors of this article and by our colleagues, we used modern literature (Arenberger 1995, 1998, 2002, 2005, 2010). In some difficult cases of determination, we compared the examined material with the specimens of the Pterophoridae collection funds of the Natural History Museum, UK, London (BMNH). The examined material is deposited in the Natural History Museum (BMNH) and in the private collection of Ustjuzhanin and Kovtunovich.

Annotated list of species

Ochyrotica connexiva (Walsingham, 1891)

Steganodactyla connexiva Walsingham, 1891: 242. (Type locality: Burma).

Distribution. Bhutan, India, Burma, Thailand.

* *Deuterocopus atrapex* Fletcher, 1910

Deuterocopus atrapex Fletcher, 1910. 19. (Type locality: Sri Lanka).

Material. 1 ♂, N.Thailand, 800m Nan, km 61 on Pua to Bo Kleua rd (Hwy 1081), 9.ix 1990, I.J. Kitching & A.M. Cotton.

Distribution. India, Sri Lanka, Thailand, Australia.

Notes. New for Thailand.

Deuterocopus planetus Meyrick, 1908*Deuterocopus planeta* Meyrick, 1908: 473. (Type locality: India).*Deuterocopus torridus* Meyrick, 1913: 106. (Type locality: Irian Jaya, Indonesia).**Distribution.** India, Sri Lanka, Burma, Indonesia, New Guinea.***Deuterocopus socotranus*** Rebel, 1907*Deuterocopus socotranus* Rebel, 1907: 115. (Type locality: Yemen, Sokotra).*Deuterocopus viticola* Meyrick, 1911: 104. (Type locality: Sri Lanka).*Deuterocopus triannulatus* Meyrick, 1913: 107. (Type locality: Australia).*Deuterocopus deltophilus* Meyrick, 1930: 565. (Type locality: Uganda).*Deuterocopus henrioti* Bigot & Boireau, 2006: 16–17. (Type locality: Cote d'Ivoire).**Distribution.** Yemen, Oman, Japan, India, Sri Lanka, Thailand, Taiwan, Burma, Indonesia, Rep. S. Africa, Somalia, Malawi, Uganda, Zambia, Zimbabwe, Mozambique, Ivory Coast, New Guinea, Australia.*** *Platyptilia ignifera*** Meyrick, 1908*Platyptilia ignifera* Meyrick, 1908: 481. (Type locality: India).**Material.** 1 ♀, Phuket, lower reaches of a rivulet between Nai Thon and La Yang, 8°02'N 98°16'E, 19.ii.2009, N. Vikhrev.**Distribution.** Japan, India, Thailand.**Notes.** New for Thailand.***Platyptilia farfarella*** Zeller, 1867*Platyptilus farfarellus* Zeller, 1867: 334. (Type locality: Poland).*Platyptilia molopias* Meyrick, 1906: 135. (Type locality: Sri Lanka).*Platyptilia petila* Yano, 1963: 851. (Type locality: Solomon Islands).*Platyptilia periacta* Meyrick, 1910: 411. (Type locality: Cape Town, S. Africa).*Platyptilia claripicta* Fletcher, 1910: 400. (Type locality: Seychelles).**Distribution.** Europe, Asia, Sri Lanka, Indonesia, Thailand, Philippines, Solomon Islands, Rep. S. Africa, Swaziland, Madagascar, Mauritius, Uganda, Kenya, Tanzania, Malawi, San Tome Isl., Seychelles, Nigerian, Ghana.***Stenoptilia zophodactyla*** (Duponchel, 1840)*Pterophorus zophodactylus* Duponchel, 1840: 668. (Type locality: France).*Pterophorus loewii* Zeller, 1847: 38. (Type locality: Italy).*Pterophorus canalis* Walker, 1864: 944. (Type locality: Australia).*Mimeseoptilus semicostata* Zeller, 1873a: 323. (Type locality: Texas, USA).**Distribution.** Europe, Nepal, Japan, India, Vietnam, Philippines, Thailand, Australia, New Zealand. Rep. S. Africa, Kenya, Madagascar, U.S.A., Mexico, Ecuador, Paraguay.***Lantanophaga pusillidactyla*** (Walker, 1864)*Oxyptilus pusillidactylus* Walker, 1864: 933. (Type locality: Jamaica).*Platyptilia tecnidion* Zeller, 1877: 13. (Type locality: Virgin Islands).*Platyptilia hemimetra* Meyrick, 1886: 18. (Type locality: Reunion Isl).*Platyptilia lantana* Busck, 1914: 103. (Type locality: Hawai'i Islands).*Platyptilia amphilogia* Meyrick, 1909: 365. (Type locality: Rep. S. Africa).*Platyptilia teleactna* Meyrick, 1932: 250. (Type locality: Indonesia, Java).*Platyptilia lantanadactyla* Amsel, 1951: 66. (Type locality: Morocco).**Distribution.** Spain, Canary Islands, Madeira, Morocco, Israel, India, Sri Lanka, Thailand, Indonesia, New Guinea, Hawaii Islands, Galapagos Islands, Swaziland, Tanzania, Reunion Island, Seychelles, U.S.A., Bermuda Islands, Paraguay, Brazil, Dominica, Ecuador, Mexico, Peru, Jamaica, Puerto Rico, Virgin Islands, Galapagos Islands, Hawai'i Islands.***Stenoptilodes taprobanes*** (Felder & Rogenhoffer, 1875)*Amblyptilia taprobanes* Felder & Rogenhofer, 1875: plate 140, fig. 54. (Type locality: Sri Lanka).*Platyptilia brachymorpha* Meyrick, 1888: 240. (Type locality: India).*Platyptilia seeboldi* Hofmann, 1898: 33. (Type locality: Syria).*Platyptilia terlizzii* Turati, 1926: 67. (Type locality: Libya).*Amblyptilia zavatterii* Hartig, 1953: 67. (Type locality: Italy).*Platyptilia legrandi* Bigot, 1962b: 86. (Type locality: Seychelles).*Stenoptilodes vittata* Service, 1966: 11. (Type locality: Nigeria).**Distribution.** France, Spain, Portugal, Canary Islands, Libya, Finland, Italy, Sicily, Malta, Bulgaria, Greece, Crete, Cyprus, Turkey, Indonesia, Sri Lanka, Thailand, India, New Guinea, Australia, Hawai'i Islands, Tchad, Sao Tome, Cote d'Ivoire, Nigeria, Tanzania, Kenya, Madagascar, Seychelles, U.S.A., Paraguay, Bolivia.

Nippoptilia cinctipetalis (Walker, 1864)*Oxyptilus cinctipetalis* Walker, 1864: 935. (Type locality: Australia).*Nippoptilia minor* Hori, 1933. (Type locality: Japan).*Trichoptilus eochrodes* Meyrick, 1935. (Type locality: Hunan, China).*Oxyptilus caryornis* Meyrick, 1935. (Type locality: Tien-Mu-Shan, China).**Distribution.** Australia, Japan, Palau, China, Thailand.***Nippoptilia regula*** (Meyrick, 1906)*Oxyptilus regulus* Meyrick, 1906: 135. (Type locality: Sri Lanka).**Distribution.** Nepal, Sri Lanka, Thailand, Vietnam, Australia, Tanzania.***Nippoptilia vitis*** (Sasaki, 1913)*Stenoptilia vitis* Sasaki, 1913: 3. (Type locality: Japan).*Oxyptilus formosanus* Matsumura, 1931: No. 2061. (Type locality: Japan).**Distribution.** Japan, Korea, Nepal, India, Thailand, Taiwan.***Xyroptilia dohertyi*** Kovtunovich & Ustjuzhanin, 2006*Xyroptilia dohertyi* Kovtunovich & Ustjuzhanin, 2006: 263. (Type locality: Renong, Thailand).**Distribution.** Thailand.***Xyroptilia siami*** Kovtunovich & Ustjuzhanin, 2006*Xyroptilia siami* Kovtunovich & Ustjuzhanin, 2006: 262. (Type locality: Chiang Mai, Thailand).**Distribution.** NW Thailand (Myanmar), China (Yunan).***Asiaephorus longicucullus*** Gielis, 2000*Asiaephorus longicucullus* Gielis, 2000: 371. (Type locality: Nepal).**Distribution.** Nepal, Thailand, Japan, India.***Asiaephorus sythoffi*** (Snellen, 1903)*Platyptilia (Amblyptilia) sythoffi* Snellen, 1903: 54. (Type locality: Java, Indonesia).**Distribution.** Indonesia, India, Thailand.***Sphenarches anisodactylus*** (Walker, 1864)*Oxyptilus anisodactylus* Walker, 1864: 934. (Type locality: Sri Lanka).*Pterophorus diffusalis* Walker, 1864: 945. (Type locality: Australia).*Sphenarches synophrys* Meyrick, 1886: 17. (Type locality: New Hebrides).*Megalorhipida rishwani* Makhan, 1994: 353. (Type locality: Surinam).**Distribution.** Nepal, Japan, China, Sri Lanka, India, Taiwan, Thailand, Vietnam, Malaysia, Indonesia, Solomon Islands, New Guinea, Bismarck Islands, Australia, Cameroun, Seychelles, Reunion Island, Madagascar, Kenya, Tanzania, Zaire, Gambia, Guinea, Nigeria, Tchad, Malawi, Swaziland, Cote d'Ivoire, Ghana, U.S.A., Brazil, Dominica, Grenada, Panama, Virgin Islands, Bahamas, St. Thomas, Puerto Rico, Peru, Paraguay, Fiji Islands, New Hebrides, Tonga Islands, New Caledonia, Palau, Bonin Island, Guam.***Sphenarches bilineatus*** Yano, 1963*Sphenarches bilineatus* Yano, 1963: 868. (Type locality: Samoa).**Distribution.** Samoa, Thailand.***Sphenarches zandlistis*** (Meyrick, 1905)*Oxyptilus zandlistis* Meyrick, 1905: 582. (Type locality: Burma).**Distribution.** Nepal, India, Sri Lanka, Thailand, Burma, Indonesia, Australia.****Oxyptilus causodes*** Meyrick, 1905*Oxyptilus causodes* Meyrick, 1905: 582. (Type locality: Sri Lanka).**Material:** 1 ♂, 1 ♀, 100 km N Chiang Mai, Chiang Dao, 20-30.vii.2008, S. Murzin.**Distribution.** India, Sri Lanka, Thailand.**Notes.** New for Thailand.***Stangeia xerodes*** (Meyrick, 1886)*Trichoptilus xerodes* Meyrick, 1886: 14. (Type locality: Toowoomba, Australia).*Trichoptilus esakii* Hori, 1936: 79. (Type locality: Japan).*Trichoptilus dryites* Meyrick, 1936: 625. (Type locality: Indonesia).**Distribution.** Japan, China, China, Indonesia, Sri Lanka, Thailand, Australia, New Guinea, Fiji Islands, Rep. S. Africa.

Stenodacma pyrrhodes (Meyrick, 1889)*Trichoptilus pyrrhodes* Meyrick, 1889: 1113. (Type locality: Australia).*Oxyptilus kinbane* Matsumura, 1931: No. 2063. (Type locality: Japan).**Distribution.** Pakistan, Nepal, Korea, Japan, India, Sri Lanka, Thailand, Vietnam, China, Taiwan, Australia.***Megalorhipida leucodactyla*** (Fabricius, 1794)*Pterophorus leucodactylus* Fabricius, 1794: 346. (Type locality: Virgin Islands).*Pterophorus defectalis* Walker, 1864: 943. (Type locality: Sierra Leone).*Pterophorus congrualis* Walker, 1864: 943. (Type locality: Sierra Leone).*Pterophorus oxydactylus* Walker, 1864: 944. (Type locality: Sri Lanka).*Aciptilia hawaiiensis* Butler, 1881: 408. (Type locality: Hawaii Islands).*Trichoptilus ochrodactylus* Fish, 1881: 142. (Type locality: Texas, U.S.A.).*Trichoptilus centetes* Meyrick, 1886: 16. (Type locality: New Guinea).*Trichoptilus compsochares* Meyrick, 1886: 16. (Type locality: Cape Verde Islands).*Trichoptilus adelphodes* Meyrick, 1887: 266. (Type locality: Australia).*Trichoptilus ralumensis* Pagenstecher, 1900: 239. (Type locality: Bismarck Islands).*Trichoptilus derelictus* Meyrick, 1926: 276. (Type locality: Ecuador, Galapagos Islands).*Megalorhipida palaestinensis* Amsel, 1935: 283. (Type locality: Israel).**Distribution.** Spain, Morocco, Israel, Lebanon, Jordan, Saudi Arabia, Yemen, Dubai, Oman, Iran, Pakistan, Somalia, Congo, Nigeria, Cote d'Ivoire, Cameroun, Tchad, Liberia, Sierra Leone, Gambia, Nigeria, Cape Verde Islands, Kenya, Tanzania, Swaziland, Rep. S. Africa, Uganda, Madagascar, Seychelles, Reunion, Mauritius, Ethiopia, China, Taiwan, Vietnam, Thailand, Malaysia, India, Sri Lanka, Maladivias, New Guinea, Solomon Islands, Australia, U.S.A., Argentina, Chile, Paraguay, Brazil, Ecuador, Colombia, Panama, French Guyana, Mexico, Peru, Venezuela, Bahamas, Jamaica, St. Thomas, St. Vincent, Puerto Rico, Virgin Islands, Surinam, Galapagos Islands, Mariana Islands, Wake Island, Marshall Islands, Gilbert Islands.***Trichoptilus regalis*** (Fletcher, 1909)*Oxyptilus regalis* Fletcher, 1909: 25. (Type locality: Sri Lanka).*Oxyptilus chordites* Meyrick, 1913: 106. (Type locality: Sri Lanka).**Distribution.** China, India, Sri Lanka, Thailand, Indonesia.***Prichotilus bidens*** (Meyrick, 1930)*Trichoptilus bidens* Meyrick, 1930: 564. (Type locality: India).**Distribution.** India, Thailand.****Buckleria paludum*** (Zeller, 1841)*Pterophorus paludum* Zeller, 1839: 277. (Type locality: Germany).*Trichoptilus paludicola* Fletcher, 1907: 20. (Type locality: Sri Lanka).*Pselnophorus dolichos* Matsumura, 1931: No. 2071. (Type locality: Japan).**Material:** 1 ♀, Chiang Dao Resort. 600m, 28.05-08.vi.2009; 2 ♀N. Thailand, 100 km N Chiang Mai, 600m, 20-31.07.2008. leg. Murzin S.**Distribution.** Europe, Iran, south of western Siberia, the Far East of Russia, Japan, India, Sri Lanka, Thailand.**Notes.** New for Thailand.***Exelastis pumilio*** (Zeller, 1873)*Mimeseoptilus pumilio* Zeller, 1873: 324. (Type locality: Texas, U.S.A.).*Marasmarcha liophanes* Meyrick, 1886: 19. (Type locality: Reunion Island).*Mimaesoptilus gilvidorsis* Hedemann, 1896: 8 (not Zeller, 1877). (Type locality: Virgin Islands, St. Croix).**Distribution.** Nepal, Tchad, Gambia, Tanzania, Mali, Zimbabwe, Swaziland, Rep. S. Africa, Seychelles, Reunion Island, Madagascar, Nigeria, Kenya, Philippines, Thailand, New Guinea, U.S.A., Argentina, Brazil, Ecuador, Bolivia, Colombia, Surinam, Costa Rica, Cuba, Puerto Rico, Guadelupe, Mexico, Jamaica, Virgin Islands, Fatu Hiva, Guam, Palau.***Adaina microdactyla*** (Hubner, [1813])*Alucita microdactyla* Hubner, [1813]: pi. 5, figs. 26, 27. (Type locality: Europe).*Pterophorus carphodactylus* Stephens, 1834: 374. (Type locality: England).*Adaina montivola* Meyrick, 1937: 170. (Type locality: China).*Adaina subflavescens* Meyrick, 1930: 568. (Type locality: Indonesia).*Oidaematophorus madecasseus* Gibeaux, 1994: 130. (Type locality: Madagascar).**Distribution.** Ireland, Great Britain, Netherlands, Belgium, Luxemburg, France, Spain, Portugal, Morocco, Norway, Sweden, Finland, Denmark, Germany, Switzerland, Italy, Corse, Sardinia, Malta, Estland, Latvia, Lithuania, Poland, Czechia, Slovakia, Austria, Hungary, Slovenia, Croatia, Romania, Bulgaria, Greece, Russia (European part), Turkey, Israel, Iran, Georgia, Nepal, China, Japan, Madagascar, Vietnam, Indonesia, Philippines, Taiwan, New Guinea, Solomon Islands.

Gypsochares catharotes (Meyrick, 1908)*Pselinophorus catharotes* Meyrick, 1908: 491. (Type locality: India).**Distribution.** Pakistan, Nepal, India, Thailand, Rep. S. Africa, Kenya.***Pterophorus albidus*** (Zeller, 1852)*Aciptilus albidus* Zeller, 1852: 397. (Type locality: Southern Africa).*Alucita endogramma* Meyrick, 1922: 549. (Type locality: Fiji).*Alucita endophaea* Meyrick, 1930: 567. (Type locality: Mozambique).*Aciptilia suffiata* Yano, 1963: 200. (Type locality: Okinawa, Japan).**Distribution.** Japan, Thailand, Vietnam, Indonesia, Philippines, Kei, Irian Jaya, Australia, Fiji Islands, South Africa, Gambia, Mozambique, Nigeria, Kenya, Malawi, Tanzania, Zaire, Uganda, Cameroon, Tchad, Cote d'Ivoire, Zimbabwe, Zanzibar, Madagascar, Reunion Island.***Pterophorus chosokeialis*** (Strand, 1922)*Alucita chosokeialis* Strand, 1922: 15. (Type locality: Taiwan).*Alucita chionadelpha* Meyrick, 1929: 708. (Type locality: Vietnam).*Pterphorus attenuatus* Hao, Kendrick, Li, 2008: 38. (Type locality: Hainan, China)**Distribution.** Japan, China, Taiwan, Vietnam.***Pterophorus elaeopus*** (Meyrick, 1908)*Alucita elaeopa* Meyrick, 1908: 490. (Type locality: India).**Distribution.** India, Thailand, Malaysia, Indonesia.***Pterophorus leucadactylus*** (Walker, 1864)*Aciptilus leucadactylus* Walker, 1864: 949. (Type locality: Sri Lanka).**Distribution.** India, Sri Lanka, Thailand, Vietnam, Indonesia.***Pterophorus lacteipennis*** (Walker, 1864)*Aciptilus lacteipennis* Walker, 1864: 949. (Type locality: India).*Aciptilus simlalis* Walker, 1864: 949. (Type locality: Sarawak).*Aciptilia malacensis* Zeller, 1877: 485. (Type locality: Malacca).**Distribution.** Burma, Malaysia, Singapore, Sarawak, Taiwan, Thailand, Indonesia, New Guinea, Australia.***Pterophorus melanopodus*** (Fletcher, 1907)*Alucita melanopoda* T.B. Fletcher, 1907: 284. (Type locality: Sri Lanka).**Distribution.** Sri Lanka, India, Singapore, Taiwan, Thailand, Indonesia, New Guinea.***Cosmoclostis leucomochla*** Fletcher, 1947*Cosmoclostis leucomochla* Fletcher, 1947: 46. (Type locality: Sri Lanka).**Distribution.** Sri Lanka, Burma, Philippines, Thailand.***Cosmoclostis pesseuta*** Meyrick, 1906*Cosmoclostis pesseuta* Meyrick, 1906: 134. (Type locality: Sri Lanka).*Cosmoclostis premnicola* Fletcher, 1932: 1. (Type locality: India).**Distribution.** Sri Lanka, India, Thailand.***Diacrotricha fasciola*** Zeller, 1852*Diacrotricha fasciola* Zeller, 1852: 399. (Type locality: Java, Indonesia).**Distribution.** Indonesia, Philippines, Taiwan, China, Malaysia, Sri Lanka, Thailand, India, New Guinea.

Discussion

Thus, as a result of our examination of the material on Pterophoridae, the plume moths fauna of Thailand now includes 38 species, 4 of which are indicated as new for the country. There is no doubt that there is a need for further revision and research, so the Pterophoridae fauna of this region will be supplemented with many other new species, previously unknown for Thailand.

Acknowledgements

The authors express their gratitude to their colleagues: N. Vikhrev, S. Murzin (Moscow, Russia), A. Korshunov (Kemerovo, Russia), O. Kosterin (Novosibirsk, Russia) for providing material for examination.

References

- Arenberger, E. (1995). Pterophoridae. In Amsel, H. G., Gregor, F. & Reisser, H. (Eds). *Microlepidoptera Palaearctica*, 9(xxv), 258 pp., 153 pls. Wien.
- Arenberger, E. (1998). The types of the species of *Cosmoclostis* Meyrick (Lepidoptera) and their genitalia. *Entomologica Scandinavica*, 28(4), 367–379. Abb. 1–47.
- Arenberger, E. (2002). Pterophoridae 2. Deuterocopinae, Platyptiliinae: Trichoptilini, Oxyptilini, Tetraschalini. [In] Gaedike, R. (Hrsgb.): *Microlepidoptera Palaearctica*, 11, 287 Seiten. 96 Tafeln. Goecke & Evers, Keltern.
- Arenberger, E. (2005). Pterophoridae 3. Platyptiliinae: Platyptiliini: Stenoptilia. [In] Gaedike, R. (Hrsgb.), *Microlepidoptera Palaearctica*, 12, 191 Seiten. 50 Tafeln. Goecke & Evers, Keltern.
- Arenberger, E. (2010). Stichprobenartige Untersuchungen der Fauna Thailand (Lepidoptera: Pterophoridae). *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen*, 62, 1–16. Wien.
- Gielis, C. (2003). Pterophoroidea & Alucitoidea. [In] *World Catalogue of Insects*, 4, 198 Seiten. Apollo Books, Stenstrup.
- Kovtunovich, V. & Ustjuzhanin, P. (2006). The genus *Xyroptila* Meyrick, 1908 in the world fauna: new species, new records and taxonomical comments (Lepidoptera, Pterophoridae). *Atalanta*, 37(1/2), 249–276. Würzburg.
- Li, H. Hao, S. & Wang, S. (2003) Catalogue of the Pterophoridae of China (Lepidoptera: Pterophoroidea). *Shilap*, 31(122), 169–192.
- Ustjuzhanin, P. & Kovtunovich, V. (2009). The plume moths (Lepidoptera: Pterophoridae) of Vietnam, with description of a new species of *Xyroptilia* Meyrick, 1908. *Entomofauna, Suppl.*, 16, 3–9.
- Yano, K. (1961). On the species of the genus *Nippoptilia* Matsumura from Japan, with description of a new species (Lepidoptera, Pterophoridae). *Publication, Entomological Laboratory, College of Agriculture, University of Osaka Prefecture*, 6, 73–78.
- Yano, K. (1962). Pterophoridae (Lepidoptera) of Chieng Mai, northwestern Thailand. *Nature and Life in Southeast Asia*, 2, 101–192.
- Yano, K. (1963). Taxonomic and biological studies of Pterophoridae of Japan (Lepidoptera). *Pacific Insects*, 5(1), 65–209. Abb. 1–96. Honolulu.
- Yano, K., Clarke, J. & Yoshiyasu, Y. (1996). Insects of Micronesia 9 (3), Lepidoptera: Pterophoridae. *Micronesica*, 28, 157–177.

Citation:

Ustjuzhanin, P. Ya., Kovtunovich, V. N. (2017). The Pterophoridae fauna (Lepidoptera) of Thailand, Alucitidae. *Ukrainian Journal of Ecology*, 7(4), 649–654.



This work is licensed under a Creative Commons Attribution 4.0. License
