The Genus *Alucita* of Japan (Lepidoptera, Alucitidae)

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**Synopsis.** Two new species, *Alucita pusilla* and *A. straminea*, are described. The genitalia of three known Japanese species, *A. japonica*, *A. spilodesma*, and *A. flavofascia*, are briefly described and illustrated for the first time. The Japanese *Alucita* is divided into two groups: Group A — *A. pusilla*, *A. japonica*, and *A. spilodesma*; group B — *A. straminea* and *A. flavofascia*. A key to the Japanese species and a brief description of the genus are also given.

**Introduction**

*Alucita* LINNAEUS, 1758 is the largest genus in the family Alucitidae, being represented by more than 100 described species and distributed over almost all the faunal region. Three species have so far been recorded from Japan; two of them, *A. japonica* and *A. flavofascia*, appear to be endemic, and the remaining one, *A. spilodesma*, is mainly found in the Oriental Region (India, the Philippines, and Taiwan). In this paper, two new species, *A. pusilla* and *A. straminea* from the Ryukyu Is., are added to the Japanese fauna.

**Genus Alucita LINNAEUS**


Antenna filiform. Labial palpus obliquely ascending; 3rd segment pointed. Maxillary palpus very short, externally invisible*. Forewing with vein Sc free or fused with R1 at base or on basal 1/3 (Figs. 8a, d, e and h); radial veins complete*; 2nd cleft reaching near base. Hindwing with veins Sc+R1 and Rs+M1 stalked, or Sc+R1 and Rs fused before the beginning of 1st cleft (Figs. 8b, g and i); 2nd cleft reaching near base.

Male genitalia: Eighth tergite and sternite modified in shape as shown in Figs. 6e and 6f; 8th sternite with a pair of hair tufts laterally. Tegumen rounded laterally. Uncus triangular basally, with a long apical projection. Gnathos well developed, protruding. Juxta bifurcate. Valva with an elongate valvula.

* In his paper on New Guinean species, DIAKONOFF (1954) regarded the absence of maxillary palpus and veins R2–R4 as diagnostic characters of the genus. All the Japanese species, however, possess them.

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Female genitalia: Papilla analis pointed. Ductus seminalis arising from caudal part of corpus bursae or from anterior part of ductus bursae.

Remarks. *Alueita* is distinguished from other genera with six segments in hindwing by the deep constriction of the second cleft in both the fore- and hindwings (the cleft reaching near base).

Japanese species are divided into two groups on the basis of the presence or absence of ocellus and the male secondary sexual characters:

Group A: Ocelli present; forewing with vein Sc free; male hindwing with anal fold (Figs. 8b and 8c). Species included: *A. pusilla*, *A. japonica*, and *A. spilodesma*.

Group B: Ocellus absent; forewing with veins Sc and R1 fused at base or on basal 1/3; male forewing with costal fold (male unknown in *A. straminea*). Species included: *A. straminea* and *A. flavofascia*.

It will not be decided whether each of these two groups is monophyletic until more extensive revisional study of the genus has been done.

Key to Japanese Species of *Alucita*

1. Ocelli present; thorax and abdomen greyish brown or fuscous, mixed with white or yellow to ochre ................................................................. 2
   — Ocellus absent; thorax and abdomen creamy white or yellow to ochre, scattered with blackish brown ............................................................. 4
2. Wings white mixed, with greyish olive near base, with some greyish olive bars; expanse about 7 mm ................................................................. *pusilla* n. sp.
   — Wings fuscous mixed with yellow or ochre, with some fuscous bars edged with white lines .......................................................... *straminea* n. sp.
3. Head yellow or ochreous, with 4 or 5 transverse fuscous bands; thorax with 2 median transverse yellow bands; expanse 12–15 mm ...... *spilodesma* (Meyrick)
   — Head fuscous mixed with yellowish white; thorax without any bands; expanse 12–14 mm ..................... *japonica* (Matsumura)
4. Head yellow, with an orange band between eyes; thorax yellow, with 2 transverse brownish purple bands; forewing creamy white, with some straw yellow or pale brownish purple fasciae; hindwing creamy white, with conspicuous brownish purple markings on 2nd to 5th segments; expanse 14–20 mm ........... *flavofascia* (Inoue)
   Head creamy white, without any bands; thorax straw yellow, without any bands; forewing creamy white, with some straw yellow bands; hindwing creamy white, with some straw yellow bands; expanse 14–17 mm ........... *straminea* n. sp.

*Alucita pusilla* n. sp.

(Figs. 1, 6 and 7)

♂♀. Expanse about 7 mm. Head brownish olive mixed with white; crown roughly scaled. Ocelli present. Antenna filiform, alternately white and brownish olive. Labial palpus about 2.5 times as long as diameter of eye, porrect, brownish olive mixed with white. Thorax brownish olive to greyish brown, mixed with white, white on postero-dorsal margin. Legs glossy white; outside of foreleg brownish olive; inner side and spurs of midtibia pale fuscous; each segment of mid- and hindtarsi pale fuscous at base. Abdomen brownish olive scattered with white; posterior margin of each segment white; ventral surface white.

Forewing: First cleft from about middle; 2nd from near base; 3rd from about 2/5; 4th from about 1/3; 5th within 1/3. Ground color white, scattered with brownish olive near base. Markings brownish olive mixed with white scales. A common stalk of 1st and 2nd segments with 2 outwardly oblique costal bars; 1st bar at 1/4, becoming paler beneath; 2nd bar at 2/5, becoming paler beneath. First segment with 5 bars and a terminal spot; 1st bar in middle, broad; 2nd and 4th narrow, pale; 3rd at about apical 1/4, broad; 5th near apex, broad. Second to 4th segments crossed by 4 pale-colored bars; 1st bar in middle, broad; 2nd of 3rd and 4th segments at about apical 1/3, narrower than that of 2nd segment; 3rd near apex, broad; 4th at apex, narrow. A common stalk of 3rd and 4th segments with a broad and pale-colored bar
at 1/3. Fifth segment with 5 bars; 1st bar at 2/5; 2nd in middle; 3rd at apical 1/3; 4th at apical 1/4; 5th at apex, narrow. Sixth segment with 5 bars; 1st bar at 1/3; 2nd before middle; 3rd beyond middle; 4th at apical 1/4, broad; 5th at apex. Cilia white, brownish olive on each bar except tip of each apical bar. Underside white, mixed with fuscous scales near base; markings more distinct than upperside, pale fuscous, fuscous on costal margin.

Hindwing: Veins Sc+R1 separate from Rs+M1 near base, and then Sc+R1 fused completely with Rs before the beginning of 1st cleft. First cleft within 1/3; 2nd from near base; 3rd from about 1/3; 4th from about 1/4; 5th from near base. Ground color white. Markings brownish olive, scattered with white scales. First to 5th segments crossed by 5 pale-colored bars; 1st bar at 1/3, paler than the others; 2nd before middle; 3rd beyond middle; 4th at apical 1/5; 5th at apex. Sixth segment with 4 bars; 1st bar at apical 1/4; 2nd in middle; 3rd at apical 1/4; 4th at apex. Cilia as in forewing. Underside similar to upperside in color, but markings more distinct.

Male genitalia (Fig. 6): Eighth abdominal segment as in Figs. 6e and 6f. Tegumen narrow, longer than wide. Uncus almost straight in lateral view; tip rather broad, slightly 4-forked downward. Valva slender; a basal projection (ampulla) well developed, 1/2 length of valvula; valvula slender, clavate. Phallus as in Fig. 6d.

Female genitalia (Fig. 7): Antrum finely granulated. Ductus bursae as long as length of corpus bursae. Corpus bursae globular, membranous, without signum.

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**Fig. 6.** Male genitalia of *A. pusilla* n. sp. a: Ring, lateral aspect. b: Tegumen and uncus, dorsal aspect. c: Right valva, inner aspect. d: Phallus, lateral aspect. e: Eighth tergite, dorsal aspect. f: Eighth sternite (hair tufts removed), ventral aspect. (Scale: 0.125 mm.)
Ductus seminalis arising from ductus bursae.

Paratypes: 2♀, Sonai, Iriomote Is., Ryukyus, 2–3. I. 1980 (I. Kanazawa); 1♂, Urauchi, Iriomote Is., Ryukyus, 29. III. 1980 (K. Yasuda); 1♀, same locality, 10. IV. 1981 (S. Hashimoto); 1♂ (abdomen missing), same locality as holotype, 16. XII. 1977 (T. Saito); 1♂ (abdomen missing), same locality and data as holotype (F. Komai).

Type depository: All the types are deposited in the collection of the Entomological Laboratory, University of Osaka Prefecture.

Distribution: Japan (Iriomote Is.).

Remarks. *A. pusilla* closely resembles *A. fumosa* (Diakonoff, 1948) from Buru Is. in female genitalia, and *A. japonica* (Matsumura, 1931) in male genitalia. *A. pusilla* differs from *A. fumosa* by its narrow antrum (longer than wide) and rather short ductus bursae (as long as length of corpus bursae), and the absence of a pale ochreous preapical dot on forewing. From *A. japonica*, *A. pusilla* is easily distinguished by its very small size (expanse about 7 mm).

Fig. 7. Female genitalia of *A. pusilla* n. sp. a: Whole genitalia, lateral aspect. b: Ductus bursae and corpus bursae, ventral aspect. (Scale: 0.25 mm.)

Fig. 8. Wing venations. a-c: *A. japonica*. d-g: *A. flavofascia*. h-i: *A. straminea* n. sp.
**Alucita japonica** (MATSUMURA)

*(Figs. 2, 8a-c, 9, 10a-b and 10d)*


Male genitalia (Fig. 9): Eighth abdominal segment as in Figs. 9e and 9f. Tegumen narrow, longer than wide. Uncus long, gradually broad towards tip, slightly arched in lateral view; tip strongly 4-forked downward. Valva slender; a basal projection (ampulla) 1/3 length of valvula; valvula slender, clavate. Phallus slightly arched; coecum 1/2 length of phallus.

Female genitalia (Figs. 10a, b and d): Eighth tergite very short. Corpus bursae long, membranous, granulated on posterior half, with signum as in Fig. 10b. Ductus bursae short, 1/4 length of corpus bursae. Ductus seminalis arising from dorso-caudal part of ductus bursae.

Material examined: 5♂, 4♀, Amihari-spa, Iwate Pref., 20. VIII. 1979

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Fig. 9. Male genitalia of *A. japonica*. a: Ring, lateral aspect. b: Tegumen and uncus, dorsal aspect. c: Right valva, inner aspect. d: Phallus, lateral aspect. e: Eighth tergite, dorsal aspect. f: Eighth sternite (hair tufts removed), ventral aspect. (Scale: a–c, e, f, 0.125 mm; d, 0.25 mm.)
(S. Hashimoto): 2♂, 4♀, same locality, 21. VIII. 1979 (S. Hashimoto); 1♀, Hikagedaira, Gifu Pref., 1. V. 1979 (T. Saito); 1♂, 2♀, same locality, 10. V. 1980 (S. Hashimoto); 1♀, Mt. Makio-san, Osaka Pref., 13. VIII. 1981 (S. Hashimoto); 1♀, same locality, 14. VIII. 1981 (S. Hashimoto); 1♂, Shioiri, Kagawa Pref., 6. VII. 1979 (S. Hashimoto).

Distribution: Japan (Hokkaido, Honshu, Shikoku and Kyushu).

Remarks. As mentioned above, *A. japonica* closely resembles *A. pusilla* in male genitalia, but the female genitalia are quite distinctive.

![Fig. 10. Female genitalia of Alucita spp. a-b and d: A. japonica (a, 7th to 10th abdominal segments, lateral aspect; b, signum; d, whole genitalia, ventral aspect). c and e: A. spilodesma (c, 7th to 10th abdominal segments, lateral aspect; e, whole genitalia, ventral aspect). f: A. flavofascia (whole genitalia, lateral aspect). (Scale: a, c-f, 0.5 mm; b, 0.05 mm.)](image)

**Alucita spilodesma** (MEYRICK)

(Figs. 3, 10c, 10e and 11)

*Orneodes spilodesma* MEYRICK, 1908, Trans. ent. Soc. Lond., 1907: 510; MEYRICK, 1910, Gen. Ins., 108: 3, fig. 16; MEYRICK, 1913, Lep. Cat., 17: 42; CLARKE, 1955, Cat. Type specimens
pl. 173, fig. 37; INOUE, 1982, Moths of Japan, 1: 288, 2: 216, pl. 32, figs. 3-4.

Male genitalia (Fig. 11): Eighth tergite very short; sternite as in Fig. 11i. Tegumen almost circular in dorsal view. Uncus long, curved near base, pointed at tip. Gnathos straight, sharply pointed at tip. Valva with a strongly arched valvula; tip of valvula varied in shape as in Figs. 11b-e. Phallus slender, with many small spines near tip; coecum 1/3 length of phallus.

Female genitalia (Figs. 10c and 10e): Eighth tergite very short. Corpus bursae triangular in ventral view, membranous, granulated on caudal half, with signum as in Fig. 10e. Ductus bursae short, about 1/8 length of corpus bursae. Ductus seminalis arising from caudal part of corpus bursae.

Material examined: 1♂, 1♀, Totsugawa, Nara Pref., 7. VII. 1981 (S. HASHIMOTO); 1♀, Minoo, Osaka Pref., 16. XII. 1978 (T. SAITO); 1♂, 1♀, Mt. Makio-san, Osaka Pref., 14. VII. 1981 (S. HASHIMOTO); 1♂, same locality, 13. VIII. 1981 (S. HASHIMOTO); 1♂, 2♀, Kii-oshima Is., Wakayama Pref., 16. VII. 1979 (S. HASHIMOTO); 1♀, same locality, 4. VI. 1982 (H. HARA); 2♂, Satamisaki, Kagoshima.

Distribution: Japan (Hokkaido, Honshu, Shikoku, Kyushu, Tanegashima Is., and Yakushima Is.), Taiwan*, the Philippines and India.

Alucita straminea n. sp.

(Figs. 4, 8h-i, and 12)

♀. Expanse 14–17 mm. Head creamy white, slightly irrorated with pale fuscous; frons darker; vertex roughly scaled. Ocellus absent. Antenna filiform, creamy white. Labial palpus almost twice as long as diameter of eye, cylindrical, glossy yellowish white, irrorated with pale fuscous on 1st and 2nd segments; 3rd segment with a pale fuscous median band. Thorax creamy white, irrorated with fuscous especially on tegula. Legs glossy creamy white; insides of foretarsus and tip of midfemur fuscous. Abdomen creamy white suffusedly irrorated with straw yellow, with fuscous or pale fuscous patches on dorsal surface of 1st and 2nd segments; posterior margin of each segment white except that of terminal segment; ventral surface glossy creamy white.

Forewing: Veins Sc and R1 fused basally, separate at about 3/10. First cleft from about middle; 2nd from near base; 3rd from about middle; 4th from about 1/3; 5th from near base. Ground color creamy white, sparsely scattered with straw yellow, blackish brown near base. Six costal marks straw yellow, partially sprinkled with blackish brown or brown scales on them; 1st mark at 1/6; 2nd at 1/4, united with 4th beneath; 3rd at 1/3; 4th at about 2/5; 5th near apex; 6th at apex, narrow. Second segment with 4 straw yellow bars; 1st bar near middle, scattered with blackish brown scales; 2nd at about apical 1/3; 3rd near apex; 4th at apex, narrow. Third to 5th segments crossed by 5 straw yellow bars; 1st bar at about 2/5, sprinkled with blackish brown scales; 2nd near middle, sprinkled with blackish brown scales; 3rd at about apical 1/4; 4th at about apical 1/8; 5th at apex, narrow; 2nd bar of 2nd segment broadest. A common stalk of 3rd, 4th and 5th segments with a straw yellow bar sprinkled with blackish brown scales at 1/4. Sixth segment with 4 straw yellow bars; 1st bar at about 2/5, mixed with blackish brown scales, broad; 2nd at about apical 1/3; 3rd at about apical 1/6; 4th at apex. Cilia almost straw yellow, slightly paler on ground color. Ventral surface straw yellow, scattered with fuscous scales from base to 3/5; markings indistinct; cilia as in upperside.

Hindwing: Veins Sc+R1 and R5+M1 fused with each other except on area between basal 1/6 and 1/3. First cleft from about 1/3; 2nd from near base; 3rd from about 1/3; 4th and 5th from near base. Ground color creamy white. Markings straw yellow, sprinkled with pale fuscous scales. First to 5th segments crossed by 5 bars; 1st bar at 1/3; 2nd at almost middle, narrow except that of 3rd segment; 3rd at about apical 1/3; 4th at about apical 1/6; 5th at apex. Sixth segment with

* This species is here first recorded from Taiwan (1♂, Miaoli Pref., Shitoushan, 14. VI. 1982, T. Tanabe).
3 bars; 1st at middle; 2nd at apical 1/4, broad; 3rd at apex. A common stalk of 3rd and 4th segments with a bar near base. Cilia as in forewing. Underside glossy yellowish white; markings indistinct; cilia as in upperside.

Female genitalia (Fig. 12): Corpus bursae long, membranous, with signa comprising of 7 to 9 spines, and with some sclerotized stripes bearing small spines at caudo-ventral portion. Ductus bursae very short, 1/6 length of corpus bursae. Ductus seminalis arising from caudo-dorsal part of corpus bursae. A membranous part between papillae anales bearing numerous folds.

Male: Unknown.

Holotype: ♂, labelled “RYUKYU, Urauchi, Iriomote-jima I., 10. IV. 1981, S. HASHIMOTO.”


Type depository: The holotype and 6 paratypes are deposited in the collection of the Entomological Laboratory, University of Osaka Prefecture. Two paratypes are deposited in the collection of the Zoological Laboratory, Meijo University.

Distribution: Japan (Ishigaki Is., and Iriomote Is.).

Remarks. *A. straminea* is similar to *A. flavofascia* (INŒ, 1958) in coloration, but it is distinguished by the characters given in the key. Numerous folds of the membranous part between the papillae anales in female genitalia are characteristic.
Alucita flavofascia (INOUE)

(Figs. 5, 8e-g, 10f and 13)

Orneodes flavofascia INOUE, 1958, Tinea., 4: 258.

Male genitalia (Fig. 13): Eighth tergite very short, simple in shape (arched plate); sternite as in Fig. 13g. Tegumen short, wider than long. Uncus long, clavate, slightly arched. Saccus as in Fig. 13b. Valva slender; valvula slender, clavate. Phallus with slender arched cornutus; coecum 1/3 length of phallus.

Female genitalia (Fig. 10f): Corpus bursae flattened laterally, guitar-shaped in lateral view, with a sclerotized concave line on each side. Ducts seminalis arising from dorsal part of junction between ductus bursae and corpus bursae.

Material examined: 1♂, Hattori, Osaka Pref., emerged on 2. VII. 1976 (T. SAITO); 2♀, same locality, emerged on 9. VII. 1976 (T. SAITO); 1♀, same locality, emerged on 27. VI. 1979 (T. SAITO); 2♂, same locality, emerged on 28. VI. 1979 (T. SAITO); 1♀, same locality, emerged on 29. VI. 1979 (T. SAITO); 1♂, same locality, emerged on 3. VII. 1979 (T. SAITO).
Distribution: Japan (Honshu and Kyushu).

Acknowledgments

I wish to express my thanks to Prof. S. Ito of the University of Osaka Prefecture for his constant guidance. I also express my sincere gratitude to Dr. H. Kuroko, University of Osaka Prefecture, and to Prof. H. Inoue, Otsuma Woman’s University, for their useful advice and critical readings of the manuscript. My thanks are also due to the following persons who kindly offered me the material: Dr. T. Saito, Entomological Museum of Osaka Prefectural Minno Park, Mr. Y. Arita, Meijo University, Mr. I. Kanazawa, Kyushu University, Dr. F. Komai, Messrs. E. Nishida, K. Yasuda, T. Tanabe and H. Hara, University of Osaka Prefecture.

References


摘要

日本産 Alucita 属 (橋本里志)

Alucita 属は広く全世界から知られ、100種以上の記載種から成る大きな属である。従来、わが国からは3種が知られていた。うち2種、ヤマトヒュウジトリバ (Alucita japonica) とアヤヒュウジトリバ
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*Alucita flavofascia* は日本からのみ知られ，残りの 1 種，ニジュウシトリバ (*Alucita spilodesma*) は東洋区を中心に分布している。今回，琉球列島から得られた 2 新種を記載すると共に，*Alucita* 属の記載ならびに既知種 3 種の交尾器を図示し簡単な説明を与えた。また，日本産 *Alucita* 属を成虫の形質に基づいて，次の 2 つのグループに分類した。

**グループ A:** 単眼を有すること，前翅の Sc 脈は基部より遊離すること，雄交尾器に anal fold を持つことによって特徴づけられる。*A. pusilla, A. japonica, A. spilodesma* の 3 種が含まれる。

**グループ B:** 単眼を欠くこと，前翅の Sc 脈と R1 脈は基部あるいは基部から1/3の所で融合すること，雄前翅に costal fold を持つことによって特徴づけられる。*A. straminea, A. flavofascia* の 2 種が含まれる。

*Alucita pusilla Hashimoto* は白地にオリーブ色の斑紋を持つ，開張およそ 7 mm の小蛾である。本種は雄交尾器において，ヤマトニジュウシトリバ (*A. japonica*) に似るが，成虫の大きさによって容易に区別される。分布：西表島。

*Alucita straminea Hashimoto* は成虫の色彩において，アヤニジュウシトリバ (*A. flavofascia*) に似るが，アヤニジュウシトリバから，頭部にオレンジ色の帯を持たないこと，前後翅に褐色を帯びた紫色の斑紋を欠くことにより区別される。分布：石垣島，西表島。