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# Addition a New Species of *Dicnecidia* Diakonoff, 1982 (Lepidoptera: Tortricidae: Olethreutinae) from Thailand and a New Record of the Genus from Thailand and Laos

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**ABSTRACT. –** *Dicnecidia narathiwatensis* Thonongtor and Pinkaew **sp. nov.** is described based on a single male specimen from Narathiwat Province, southernmost Thailand. In addition, *D. fumidana* Kuznetzov, 1997, previously recorded only from Vietnam, is recorded for the first time from Thailand and Laos. Illustrations of adults and genitalia are provided. The discovery of the new species increases the total number of described *Dicnecidia* to four.

**KEYWORDS: Eucosmini, *Dicnecidia*, new species, new record, Narathiwat Province**

## INTRODUCTION

The genus *Dicnecidia* Diakonoff was established with *D. cataclasta* Diakonoff, 1982 as its type species. Previously, the genus included three species: *D. cataclasta* Diakonoff from Sri Lanka (Diakonoff, 1982), *D. fumidana* Kuznetzov, 1997 from Vietnam (Kuznetzov, 1997), and *D. browni* Pinkaew and Muadsub, 2024 from Thailand (Pinkaew et al., 2024). Members of the genus are characterized by a subrectangular forewing with a slightly to gently curved costa, an obtuse apex, and a straight termen. In males, abdominal segment VIII possesses two lateral lobes on the posterior margin, each bearing dense scale sockets. The male genitalia have a distinctly bilobed uncus, membranous to moderately large socii, and a membranous or weakly sclerotized gnathos. The valva is broad and rounded in its basal half, featuring a conspicuous, smooth ventrobasal lobe, a distinct or indistinct curved neck, and a moderately large, hooked cucullus with a prominent dorsal lobe. Additionally, the valva bears a ventral process with one or two strong spines apically. The phallus is moderately long, straight to slightly curved, and cornuti may be present or absent. During surveys of olethreutine moths in Thailand and Laos, a single male specimen of a new species of *Dicnecidia* was discovered from Thailand, along with numerous male and female specimens of *D. fumidana*, representing new country records for Thailand and Laos. The purpose of the present study is to describe a new species and to document the new record of *D. fumidana*.

## MATERIALS AND METHODS

Specimens of *Dicnecidia* were collected in various habitats in Thailand and Laos using mercury vapor light traps. All specimens are deposited in the Kasetsart Kamphaeng Saen Insect Collection (KKIC), Nakhon Pathom, Thailand. Geographic coordinates (latitude, longitude) and elevation were recorded using a GARMIN GPSMAP 76CS. Genitalia dissections and preparations followed the methods of Common (1990). Adults were photographed using a Canon EOS 5D Mark II camera equipped with an MP-E65 macro lens. Labial palpi were photographed with a Leica S8 APO stereomicroscope fitted with a Leica MC170 HD camera module. Genitalia were examined and photographed using a Leica DM750 microscope connected to an ICC50 HD camera module. Specimens were examined and measured under an Olympus SZ51 stereomicroscope. Forewing length was measured from the outer edge of the tegula at the wing base to the outermost edge of the fringe scales at the apex. Images were edited using Adobe Photoshop CC. Terminology for forewing pattern elements follows Brown and Powell (1991) as refined by Baixeras (2002). Terminology for genital structures follows Horak (1991, 2006).

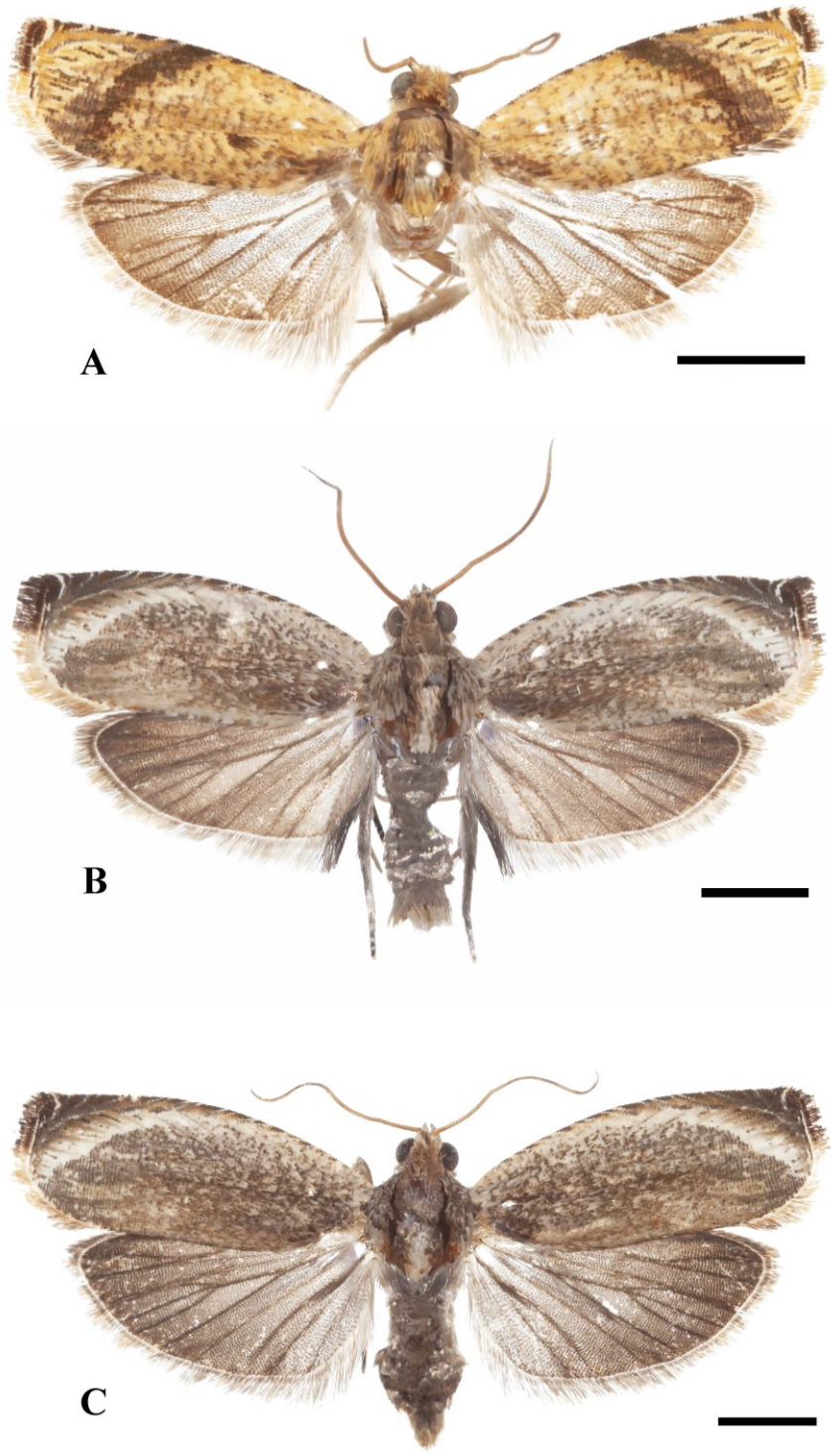


**FIGURE 1.** Wing pattern of *Dicnecidia* spp. A. *D. narathiwatensis* **sp. nov.**, male (holotype). B. *D. fumidana*, male (np12791). C. *D. fumidana*, female (np10188). Scale bars = 2 mm.

## RESULTS

***Dicnecidia narathiwatensis* Thonongtor and Pinkaew sp. nov.**
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(Figs 1A, 2A, 3A, 4A, 5A–B)

**Material Examined.** – **Holotype:** ♂. **THAILAND:** Narathiwat Prov., Bala Wildlife Research Station, 5°47′49″N, 101°50′03″E, alt. 60 m, 23–29 Jan. 2012, N. Pinkaew et al. leg., np6660 (genitalia slide NP2913). Deposited in KKIC.

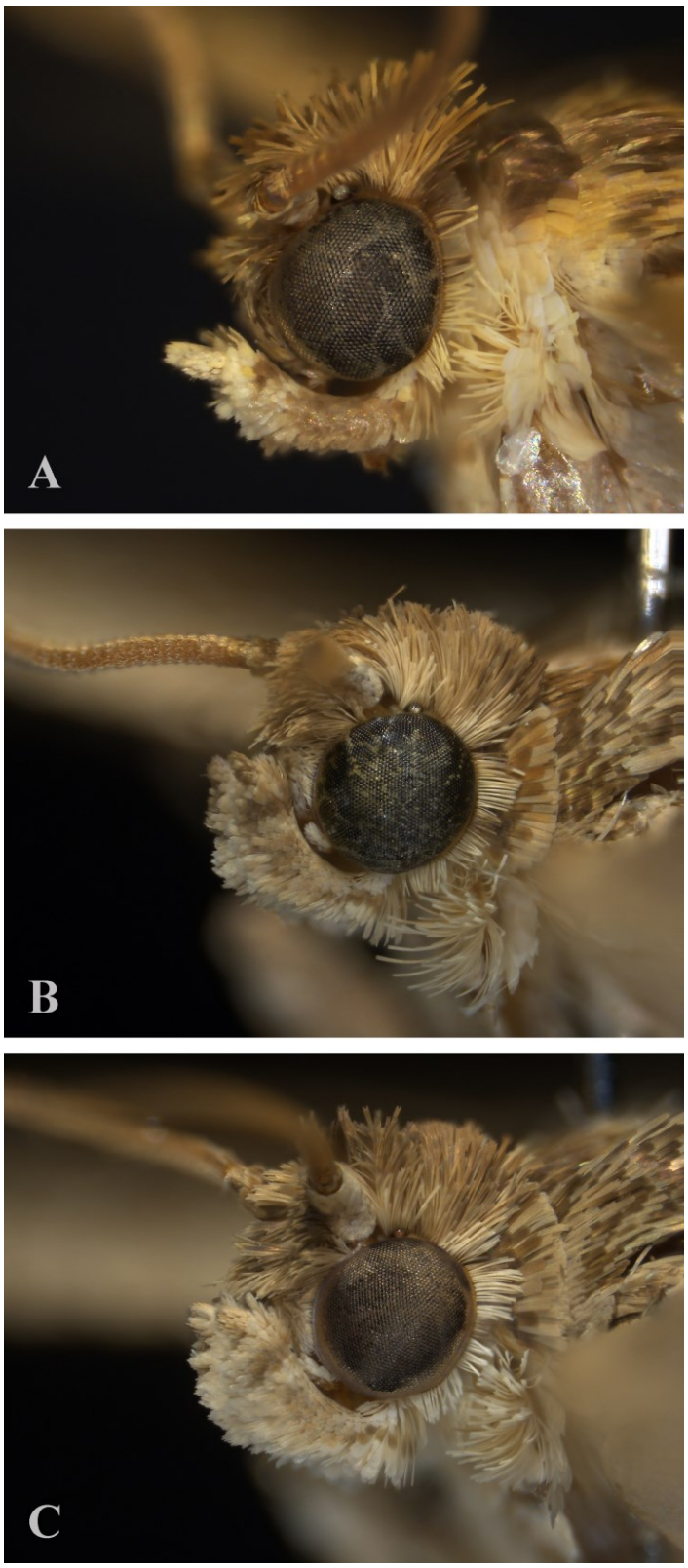


**FIGURE 2.** Head of *Dicnecidia* spp. A. *D. narathiwatensis* **sp. nov.**, male (holotype). B. *D. fumidana*, male (np12794). C. *D. fumidana*, female (np10188).

**Etymology.** – This specific epithet refers to Narathiwat Province, the type locality of the species.

**Diagnosis.** – The forewing pattern of *Dicnecidia narathiwatensis* **sp. nov.** is similar to that of *D. browni*, especially the arched fascia from the costa to the tornus

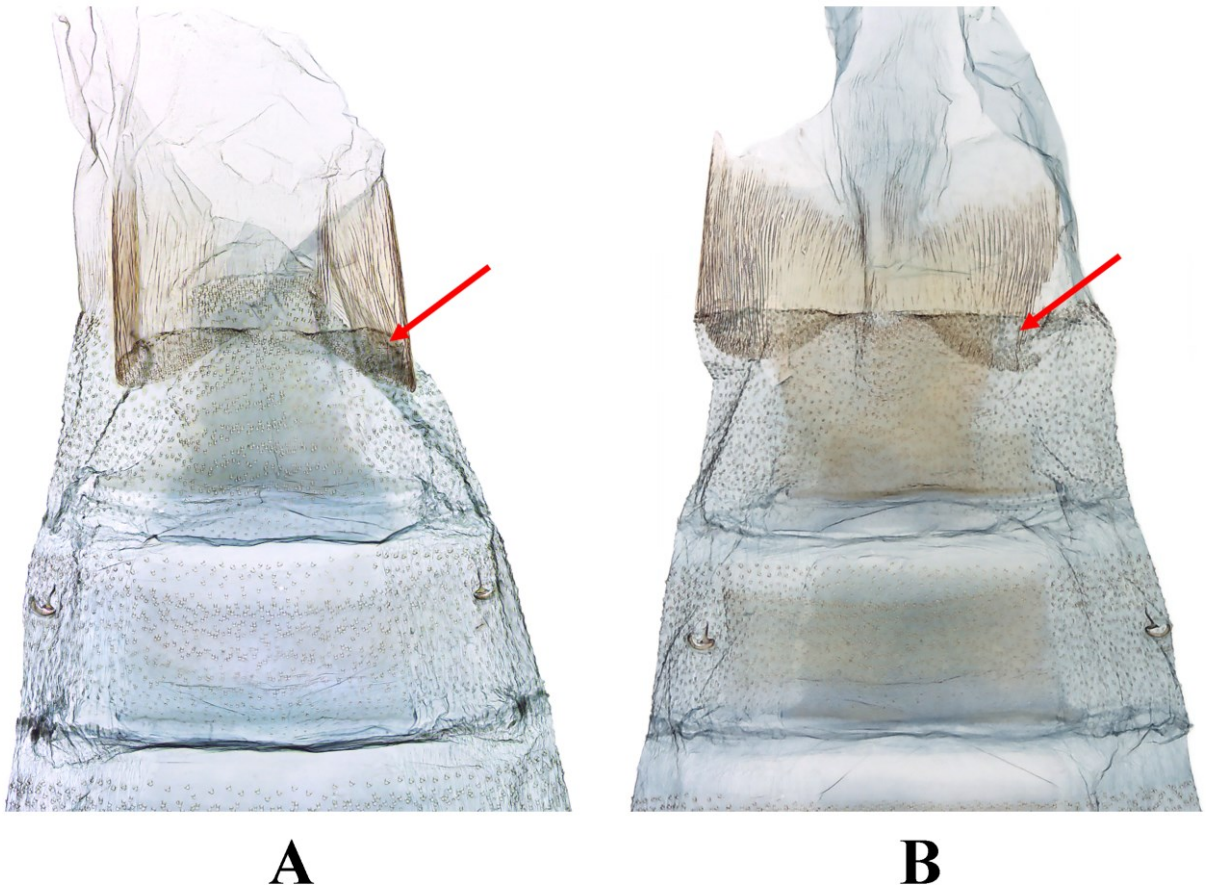


**FIGURE 3.** Posterolateral lobe on the male abdominal segment VIII. A. *Dicnecidia narathiwatensis* **sp. nov.**, (holotype). B. *Dicnecidia fumidana* (NP4183).

but the overall coloration is much paler. The male genitalia of *D. narathiwatensis* **sp. nov.** can be distinguished from those of other species in the genus by several features: the uncus is bifurcate and subparallelogram; the socii form a moderately large, subtriangular lobe; and the valva is simple, with an elongate, moderately broadened cucullus, a rounded apex, and a narrow ventral projection process that bears a terminal narrow blunt spine and a slightly longer, sharpened spine basally.

**Description.** – *Head* (Fig 2A): Lower frons yellowish white, upper frons and vertex mostly pale brown mixed with brown and dark brown; labial palpi porrect, with first segment yellowish white, second segment slightly widened to apex, pale brown, with transverse band beyond middle and at apex, creamy white, apical segment rather elongate, creamy white.

*Thorax*: Pronotal collar brown; mesonotum and tegulae pale brown mixed with brown. Forewing subrectangular, length 5.6 mm in male (n = 1) (Fig 1A); costal margin slightly curved; rounded apically; termen rather straight; tornus rounded; strigulae 6–9 more distinct than 1–5, white alternating with dark brown streaks, strigula 9 with distinct outer white streak, narrow, curved inward, extending from costa near apex to termen at $M_1$; ground color yellowish brown, base of wing to inner margin of median fascia with diffused irregular spots and short transverse narrow striae, dark brown, basoventrally with an oblique, brown patch; median fascia moderately widened, curve outward from middle of costa between strigulae 5 and 6 to inner margin before tornus, then to outer margin of median fascia with a transverse band, slivery brown, extending as narrow band from costa at strigula 6 to $M_2$ and enlarged from $M_2$ and tornus, with a rather narrow, longitudinal submarginal band, extending outward, slightly curved from strigula 6 to termen at $M_1$, brownish orange, with a curved row of narrow lines, rather short, between $R_2$ to $CuA_2$, dark brown, with a transverse narrow line along termen between $M_2$ and $CuA_1$, fringe scales dark brown between apex and $M_1$, yellowish brown between $M_1$ and $CuA_2$, and pale brown at tornus; underside pale brown with small spots, yellowish white along apical half of costa; hindwing brown with transparent area

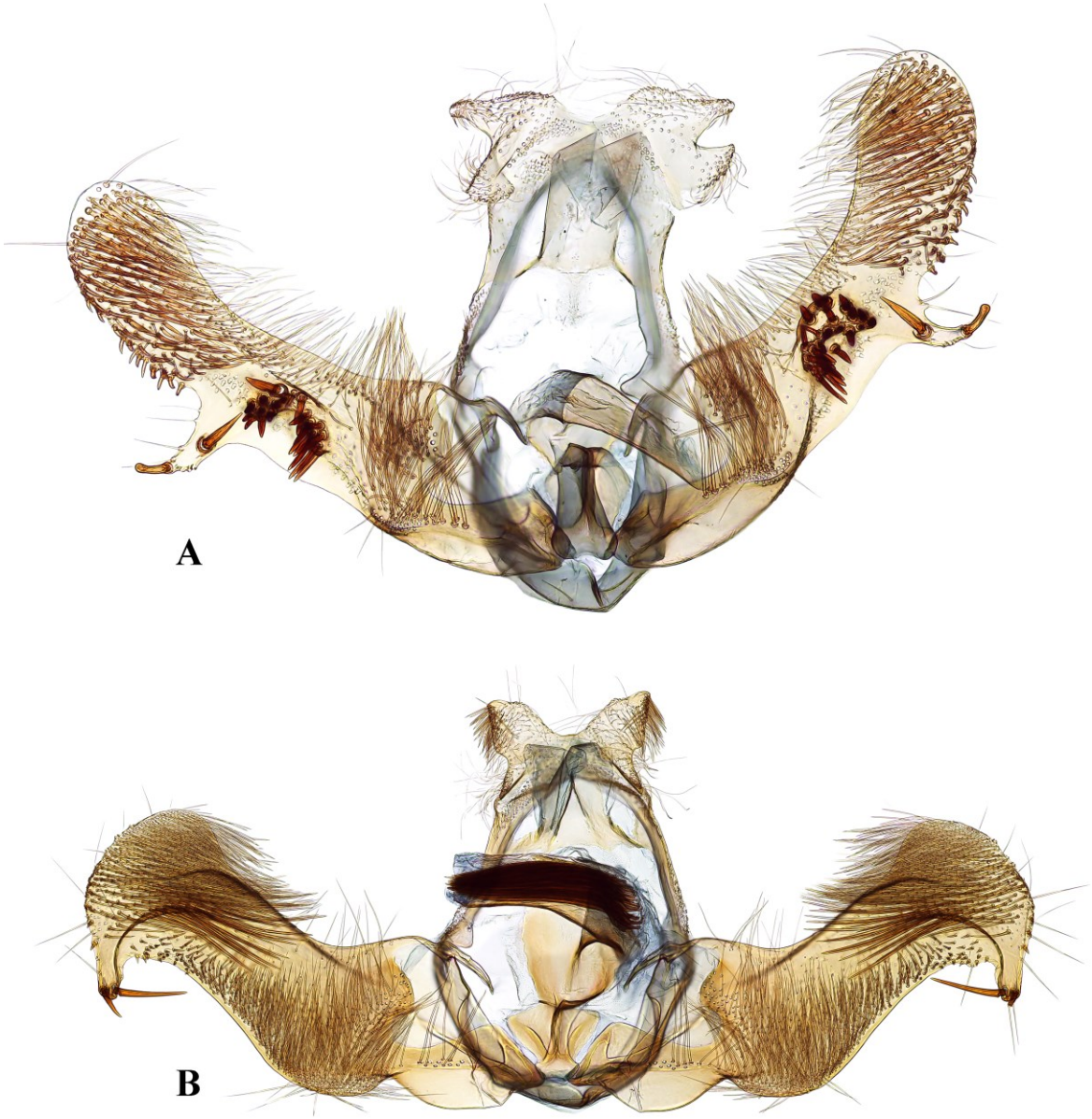


**FIGURE 4.** Morphological features of male genitalia of *Dicnecidia* spp. A. *D. narathiwatensis* **sp. nov.**, (holotype). B. *D. fumidana* (NP4183).

over basal half covered with modified narrow scales between veins, dark brown, fringe scales pale brown; underside pale brown with transparent area and modified scales as upperside.

*Abdomen*: Sternum of segment VIII with two moderately large, lateral lobes on posterior margin, with dense scale sockets (Fig 3A). Male genitalia (Fig 4A) with tegumen subtriangular, rather narrow, with moderately dense scale sockets basolaterally, less dense apicaolaterally; uncus bifurcate, subparallelogram, densely setose; socius a moderately large, subtriangular lobe, densely setose apically, with a deep V-shaped lateral excavation between uncus and socius (Figs 5A–B); gnathos arising from 1/2 of tegumen, weakly sclerotized, fused medially; vinculum moderately wide; juxta subtriangular, moderately large; caulis short; anellus moderately wide, roundish cup-shaped, surrounding basal 1/5 of phallus; phallus moderately long (about 1/3 of valva length) and wide, slightly tapering apically, without cornuti; valva somewhat parallel-sided beyond sacculus, curved; sacculus moderately large, smooth, with a large patch of long spiniform setae below ventral margin of basal excavation reaching near upper margin; median area of

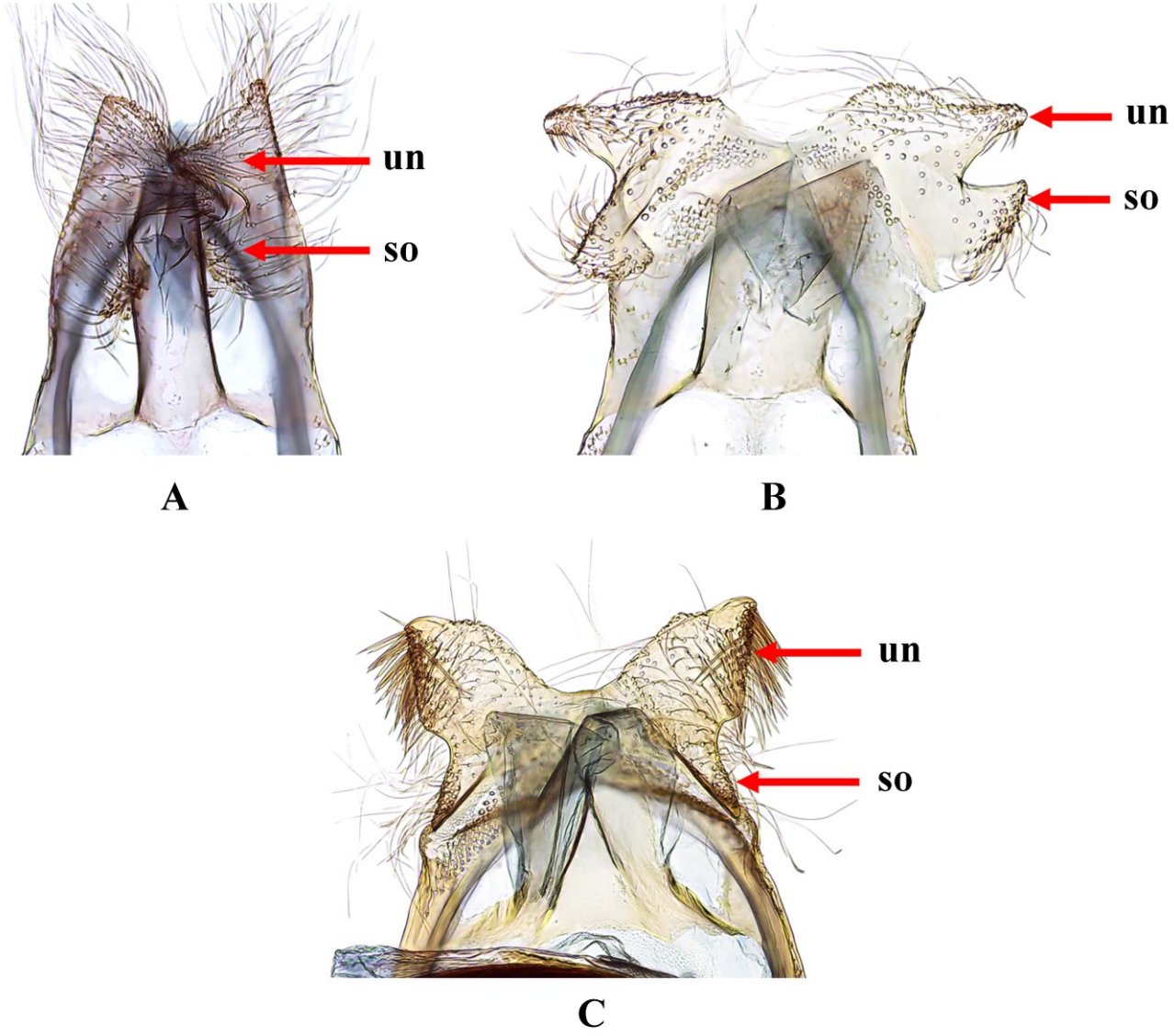


**FIGURE 5.** Enlarged uncus and socii of male genitalia of *Dicnecidia* spp. A. *D. narathiwatensis* **sp. nov.**, (holotype, folded habitus on first slide mounted). B. *D. narathiwatensis* **sp. nov.**, (holotype, expanded habitus after remounted) C. *D. fumidana* (NP4183). (un = uncus, so = socii).

valva with a moderately large group of stout spines; neck indistinct; cucullus with slightly broadened rounded apex, dense spines and setae, apical margin with sparsely long setae, with a moderately long, narrow, digitate ventral process, directed ventrally, with a moderately long, blunt tipped spine at apex and a rather long, strong spines at base of ventral process.

**Remarks.** – This new species was collected in evergreen forest of Bala Wildlife Research Station, a part of Hala-Bala Wildlife Sanctuary, Narathiwat Province.

***Dicnecidia fumidana* Kuznetzov**
(Figs 1B–C, 2B–C, 3B, 4B, 5C, 6)

**Material Examined.** – **THAILAND:** 10♂, 2♀**:** Ubon Ratchathani Prov., Sirindhorn Dam, 15°12′46″N, 105°26′16″E, alt. 140 m, 6–7 Mar. 2019, np12789 (♀, genitalia slide NP4183), np12790 (♂), np12791 (♂), np12792 (♂), np12793 (♂), np12794 (♂), 3–4 Jun. 2019, np12900 (♂), np12901 (♂); Sa Kaeo Prov., Pang Sida N.P., 14°02′25″N, 105°15′56″E, alt. 310 m, 26 Apr. 2017, np10009 (♂), 14°07′37″N, 102°15′30″E, alt. 610 m, 25 Apr. 2017, np10188 (♀, genitalia slide NP4180), Nakhon Phanom Prov., Ban Hat Kuan Community Forest, 17°35′56″N, 104°23′49″E, alt. 165

**FIGURE 6.** Female genitalia of *Dicnecidia fumidana* (NP4180).

m, 17 Jul. 2023, np13914 (♂); Phu Langka N.P., 17°59′05″N, 104°08′24″E, alt. 170 m, 20 Jul. 2023, np13915 (♀); Trat Prov., Koh Kood Is. 16 Apr. 2009, np3019 (♂, genitalia slide NP3059). All specimens collected by N. Pinkaew et al. and deposited in KKIC. **LAOS:** 8♂, 4♀: Borlikhumxay Prov., Phou Khao Khouay N.P., 18°27′10″N, 103°08′66″E, alt. 312 m, 2 Jun. 2016, pp00027 (♀, genitalia slide PP00193), pp00028 (♀, genitalia slide PP00246), pp00034 (♂, genitalia slide PP00192), Xaisomboun Prov., Phou Khao Khouay N.P., 18°30′15″N, 102°57′93″E, alt. 628 m, 3 Jun. 2016, pp00074 (♂), pp00077 (♂), pp00078 (♂), pp00085 (♂, genitalia slide PP00045), 18°23′69″N, 103°04′30″E, alt. 211 m, 4 Jun. 2016, pp00116 (♂), pp00119 (♀, genitalia slide PP00059), pp00121 (♀, genitalia slide PP00191); Vientiane Prov., Phou Khao Khouay N.P., 18°21′12″N, 102°48′85″E, alt. 740 m, 11 Jun. 2016, pp00175 (♂), 18°20′60″N, 102°47′91″E, alt. 785 m, 17 Jun. 2016, pp00292 (♂, genitalia slide PP00190). All specimens were collected by P. Phewphanh and deposited in KKIC.

**Diagnosis.** – The forewing of *D. fumidana* has a more strongly curved costal margin (Figs 1B–C) than that of other species in the genus. The hindwing bears modified dark brown scales along the anal margin (Fig 1B). In males, abdominal segment VIII has two semicircular posterolateral lobes (Fig 3B), while in females, abdominal segment VII possesses two sclerotized projecting lobes on the anterolateral corners (Fig 6). The male genitalia are further characterized by a lateral cluster of short spiniform setae on the uncus, and the socii are membranous (Figs 4B, 5C).

**Distribution.** – Vietnam (Kuznetzov, 1997; Nedoshivina, 2010), Thailand (new record) (Nakhon Phanom, Ubon Ratchathani, Sa Kaeo, Trat), and Laos (new record) (Vientiane, Xaisomboun, Borlikhumxay).

## DISCUSSIONS

At presently defined, *Dicnecidia* comprises four species distributed in Asia: one from Sri Lanka and three from Southeast Asia (Vietnam, Laos, and Thailand). The four species share several features of the male genitalia: the presence of a bifurcate uncus of various shape; a large ventral lobe of the sacculus; and a ventral process of the cucullus bearing two strong, pointed spines at the terminal end (except *D. narathiwatensis* **sp. nov.** has a single stout spine at the tip and another pointed process arising from the base of the projection).

The socii were not described in *D. cataclasta* and *D. fumidana*, but they are conspicuous in *D. browni* and *D. narathiwatensis* **sp. nov.** Interestingly, the small membranous socii observed in *D. fumidana* specimens from Thailand and Laos (Figs 4B, 5C) differ from the original description and genitalia illustration provided by Kuznetzov (1997: p. 724, Fig 15). This discrepancy likely represents intraspecific variation. Another shared character across all *Dicnecidia* is the short, wide caulis. Furthermore, in *D. fumidana* specimens from Thailand and Laos, the sternum of abdominal segment VIII exhibits two lateral lobes on the posterior margin, each bearing dense scale sockets (Fig 3B). This feature was not noted by Kuznetzov (1997), but it is present in *D. browni* and *D. narathiwatensis* **sp. nov.**, suggesting that it may represent a diagnostic character for the genus. Although not mentioned in the original description of *D. cataclasta* by Diakonoff (1982), it might also be present, and that species should be re-examined in future studies. Based on the combination of these shared characters, *D. narathiwatensis* **sp. nov.** is convincingly assigned to *Dicnecidia* as currently defined.

## ACKNOWLEDGMENTS

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