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A NEW SPECIES OF *AGROTIS* OCHSENHEIMER, 1816 FROM MYANMAR (LEPIDOPTERA, NOCTUIDAE, NOCTUINAE)

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Abstract: A new species of the *Agrotis clavis* (Hufnagel, 1766) species-group, *A. myanmara* **sp. n.** is described. A diagnostic comparison is made with *A. clavis* and *A. fraterna* Moore, 1882. Adults, male and female genitalia of the new species and its related taxa are illustrated. *Agrotis corticea* var. *amurensis* Staudinger, 1892 previously regarded as a junior synonym of *A. clavis* is restored to specific status, **stat. rev.** *Agrotis frater* Fibiger, Ahola & K. Nupponen in Nupponen, K. & Fibiger, 2006 is treated here as a synonym of *Agrotis amurensis* (Staudinger, 1892), **syn. n.**

Key words: Lepidoptera, Noctuidae, Noctuinae, *Agrotis*, new species, new status, new synonymy, Myanmar

INTRODUCTION

The present paper is a continuation of a planned series of articles on the taxonomy of the genus *Agrotis* started by the review of *Agrotis militaris* Staudinger, 1888 species complex (Pekarsky 2014), including the description of a new species from the Bering Island *Agrotis frosya* Pekarsky, 2014. KOZHANCHIKOV (1937) placed *A. clavis* into the *Agrotis segetum* ([Denis & Schiffermüller], 1775) species-group however by the genital structures *A. segetum* represents a separate lineage within the genus. This widespread migrant species is, in fact, unique among its congeners being characterized by the special type of vesica (short tube with terminal swelling helix-shaped) which is corresponds accordingly with such special shape of appendix bursae (densely coiled tube) in the females. Thereby, the *A. clavis* lineage forms an own group of species uniting group members by wavy valva shape, straight, thin vesica with moderate terminal swelling in males; corpus and ductus bursae complex looks oblong or ovate, also lateral wrinkled sclerotization presents on ductus bursae in females. For comparison, the *Agrotis vestigialis* (Hufnagel, 1766) species-group characterized by a “simple”, not wavy valva and vesica with long, medium thick terminal swelling in males and corpus and appendix bursae complex looks near right circle with ductus bursae weakly sclerotized. The

complete list of the species-group will be composed later in a separate publication, however three species besides *A. clavis* mentioned in the present paper should be attributed to this group: *A. amurensis* **stat. rev.**, *A. fraterna*, and *A. myanmara* **sp. n.**

Abbreviations: HNHM = Hungarian Natural History Museum Budapest (Hungary); HSV = Helmut Seibald (Vienna, Austria); JSL = Johann Stumpf (Lauda-Königshofen, Germany); OP = slide made by Oleg Pekarsky (Budapest, Hungary); LR = slide made by László Ronkay (Budapest, Hungary); RF = Russian Federation; TL = type-locality.

SYSTEMATIC PART

***Agrotis myanmara* Pekarsky sp. n.**
(Figs 1, 2, 11, 13)

Type material. Holotype: Male (Fig. 1), West Myanmar, Chin State, road Mindat-Matupi, 14 km W Mindat, by avocado plantation, N21°23.443', E093°52.473', 1910 m, 10–11.XI.2015, leg. J. Stumpf, A. Becher, ex coll. S. Löffler; slide OP4166m (coll. J. Stumpf/A. Becher). **Paratypes:** 1 ♂, with the same data as Holotype (coll. O. Pekarsky); 1 ♂ & 1 ♀, West Myanmar, Chin State, 4 km W Thaing Gnin village, N23°12.102', E093°48.112', 2100 m, 4–5.XI.2015, leg. J. Stumpf, A. Becher, ex coll. S. Löffler (coll. J. Stumpf/A. Becher); 1 ♀, with the same data, slide OP3607f (coll. O. Pekarsky). 1 ♀, West Myanmar, Chin State, road Mindat-Matupi, 25 miles camp, N21°26.280', E093°47.224', 2318 m, 12–13.XI.2015 (coll. J. Stumpf/A. Becher).

Diagnosis. The new species is very similar externally to *A. fraterna* (Figs 3, 4) and could be distinguished from it by the genital structures only. In the male genitalia, the clasping apparatus of *A. myanmara* (Fig. 11) differs from that of *A. fraterna* (Fig. 12) by its somewhat larger, wider valva and thicker clasper, from that of *A. clavis* (Fig. 15) by its narrower valva, narrower and less massive clasper. The main specific difference between *A. myanmara* and the two related species can be found in the configuration of the vesica and the carinal sclerotised plate: the new species has much longer subcarinal sclerotized ridge on main chamber of vesica and significantly longer terminal tube of vesica, whereas the sclerotized ridge is shorter in the related species, and the vesica of *A. fraterna* is 2.5 times shorter and vesica of *A. clavis* is 2 times shorter than in *A. myanmara*. The female genitalia of *A. myanmara* (Fig. 13) are characterized by the very long appendix bursa, which is much longer than in *A. fraterna* (Fig. 14) and *A. clavis* (Fig. 19).

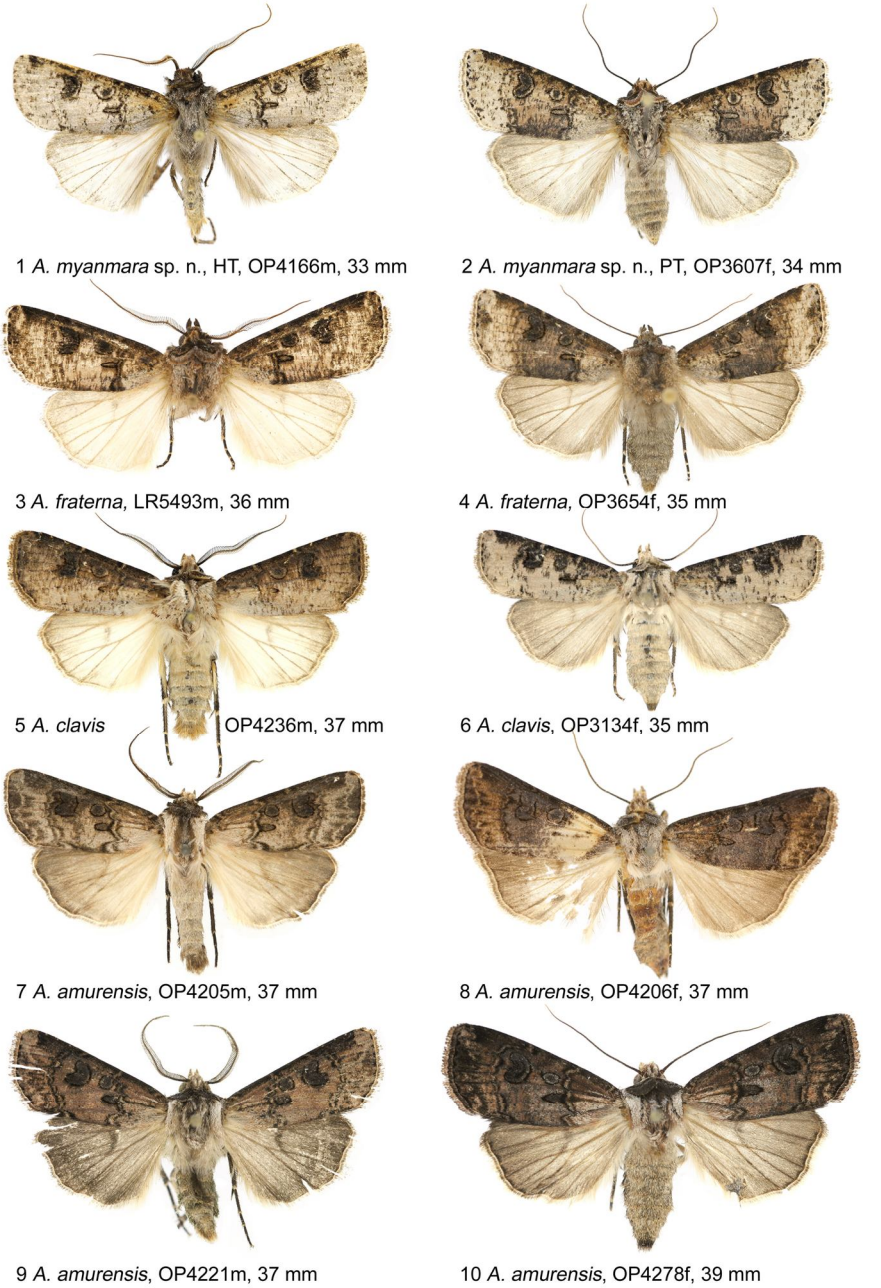
Description (Figs 1, 2). Wingspan 33–34 mm. Head black, collar brown. Antenna of male strongly bipectinate (in the basal two thirds of the flagellum), antenna of female filiform. Thorax and abdomen grey, tegulae black and brown; ground colour of forewing grey-brown, irrorated with black scales. Forewing relatively short; costa straight, suffused by blackish; apex rounded; outer margin with straight upper part and oblique lower part. Wing pattern well developed, black: basal line appears as a black dot; subbasal line double, wavy; lower half of subbasal area grey, upper part dark, grey brown; antemedial line almost straight, running perpendicular to inner margin, little wavy; medial shadow dark brown (in some females deeply dark brown); postmedial line curved, finely dentate; postmedial area light grey; subterminal line hardly traceable; terminal line marked by triangular patches; cilia short, greyish-brown. Orbicular stigma with black dot in the centre; reniform stigma black inside, separated from outer margin by light fascia; claviform stigma elongated. Hindwing grey with lighter inner part; discal spot traceable; cilia pale grey.

Male genitalia (Fig. 11). Uncus medium-long, slender, almost straight, with not sharp, curved tip; valva elongated, narrow, narrowing apically, dorsal margin slightly curved distally; clasper thick, digitiform, flattened, positioned down below the middle of valva, its apex finely pointed; juxta shield-like with pointed ventro-medial extension. Aedeagus short, cylindrical, straight, carina with long, sclerotized lamina continuing in sclerotized ridge reaching terminal part of basal, inflated chamber of vesica. Basal chamber of vesica with two large subbasal diverticula and one small medial diverticulum, terminal tube long, membranous with apical swelling.

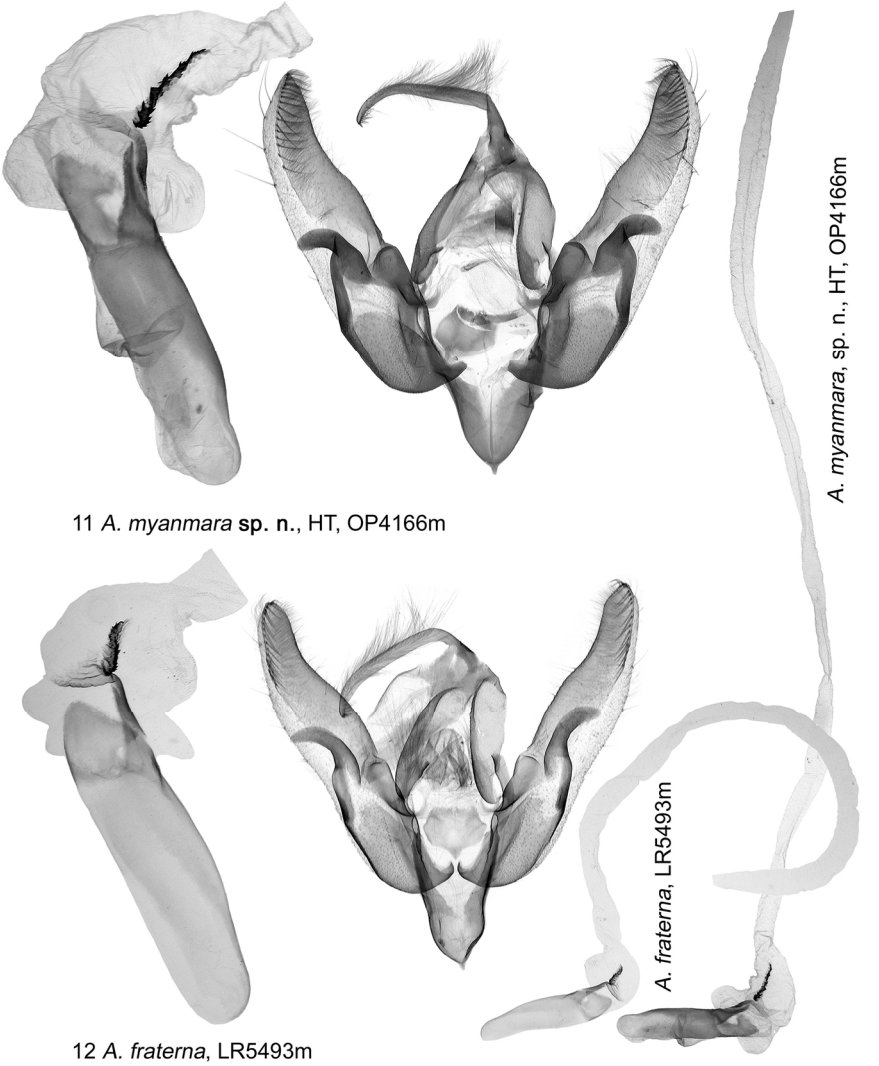
Female genitalia (Fig. 13). Ovipositor large, subconical; papillae anales apically tapering, hairy, with short setae on apical edges. Apophyses anteriores thin, apophyses posteriores also thin, longer than apophyses anteriores. Antrum membranous, antrum as broad as ductus bursae; ductus bursae medium-long with lateral wrinkled-ribbed section; appendix bursae very long, tubular, with medium terminal swelling; corpus bursae elongated, tubular, proximally slightly dilated.

Distribution. Myanmar.

Etymology. The species name refers to the type-locality of the taxon.



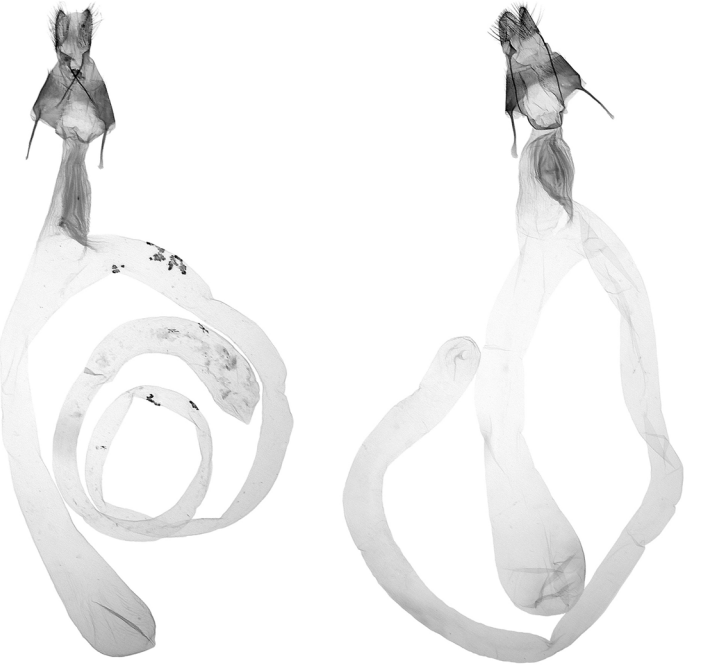
Figures 1–10. *Agrotis* spp., adults. 1, *A. myanmara* **sp. n.**, male, Holotype, Myanmar (JSL); 2, *A. myanmara* **sp. n.**, female, Paratype, Myanmar (OP); 3, *A. fraterna*, male, Nepal (HNHM); 4, *A. fraterna*, female, Nepal (HNHM); 5, *A. clavis*, male, Hungary (OP); 6, *A. clavis*, female, Hungary (OP); 7, *A. amurensis*, male, RF, Vladivostok (HNHM); 8, *A. amurensis*, female, RF, Vladivostok (HNHM); 9, *A. amurensis*, male, RF, Ural, Moskovo (OP); 10, *A. amurensis*, female, RF, Ural, Chelyabinsk reg. (HSV).



11 *A. myanmara* **sp. n.**, HT, OP4166m

12 *A. fraterna*, LR5493m

Figures 11–12. *Agrotis* spp, male genitalia. 11, *A. myanmara* **sp. n.**, Holotype, Myanmar (JSL); 12, *A. fraterna*, Nepal (HNHM).



13 *A. myanmara*, sp. n., PT, OP3607f 14 *A. fraterna*, OP3654f

Figures 13–14. *Agrotis* spp, female genitalia. 13, *A. myanmara* **sp. n.**, Paratype, Myanmar (OP); 14, *A. fraterna*, Nepal (HNHM).

Agrotis clavis (Hufnagel, 1766)

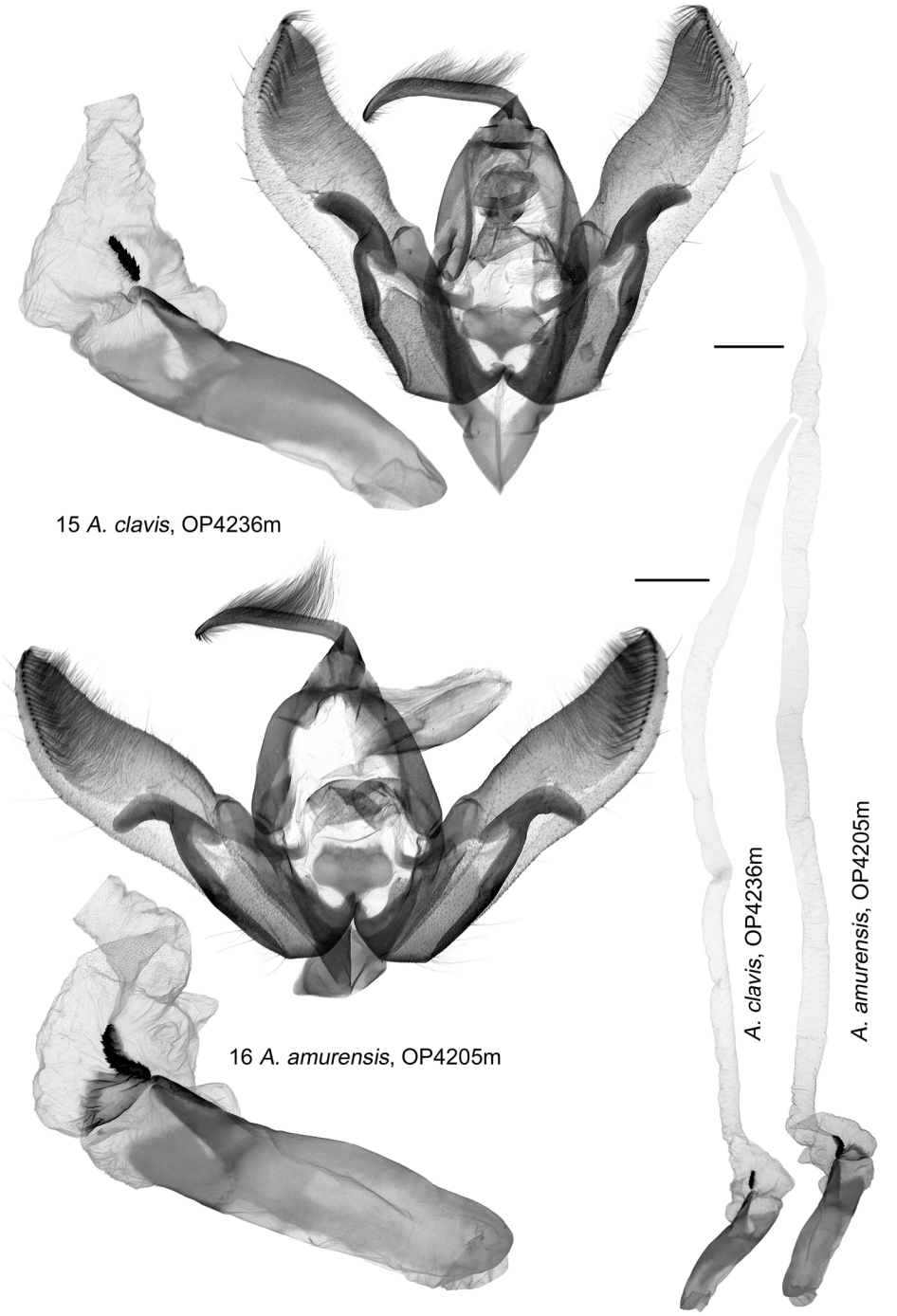
(Figs 5, 6)

Phalaena clavis Hufnagel, 1766, *Berlinisches Magazin*, 2 (4): 426; TL: Berlin region.

Synonymy: *Phalaena Noctua corticea* ([Denis & Schiffermüller], 1775), TL: Vienna; *Bombyx clavigerus* Haworth, 1803, TL: Great Britain; *Bombyx subfuscus* Haworth, 1803, TL: Great Britain; *Agrotis sincerii* Freyer, 1849; *Agrotis corticea* var. *neocomensis* Rougemont, 1902, TL: Jura, Neuchatel.

Subspecies: *Agrotis clavis corsa* (Püngeler, 1908); *Euxoa* (*Agrotis*) *corticea* var. *corsa* Püngeler, 1908; *Deutsche Entomologische Zeitschrift Iris,* 21 (4): 286, pl. 4, f. 2; TL: France, Corsica, Vizzanova.

Diagnosis. *A. clavis* differs from *A. amurensis* externally by the presence of numerous transverse pale grey streaks on forewings which are absent from *A. amurensis*. In male genitalia *A. clavis* (Fig. 15) can be distinguished from *A. amurensis* (Fig. 16) by the significantly smaller, barely developed medial diverticulum and the shorter (1.3–1.5 times) terminal tube of the vesica. In the females, the appendix bursae is considerably (1.3–1.5 times) shorter in *A. clavis* (Fig. 19) than in *A. amurensis* (Figs 20–22).



Figures 15–16. *Agrotis* spp, male genitalia. 15, *A. clavis*, Hungary (OP); 16, *A. amurensis*, RF, Vladivostok (HNHM).

***Agrotis amurensis* (Staudinger, 1882) stat. rev.**
(Figs 7-10)

Agrotis corticea var. *amurensis* Staudinger, 1892, *Mémoires sur les Lépidoptères*, 6: 421; TL: [Russian Far East] Raddefka; Vladivostok; Suifun.

Synonymy*: Agrotis corticea grammomima* Bryk, 1949, TL: Korea, Motojondo; *Agrotis frater* Fibiger, Ahola & K. Nupponen in NUPPONEN, K. & FIBIGER, 2006, **syn. n.** TL: Russia, southern Urals, 53°57'N 59°03'E, 650 m, Cheliabinsk oblast, near Moskovo village.

Note1. *Agrotis praedicta* Corti, 1932, TL: Kuku-Noor; this taxon is most probably a distinct species. *Agrotis justifica* Corti, 1932, TL: China, Sichuan; is supposedly a species distinct from *A. clavis* and *A. amurensis*.

Note2. The differential diagnosis in the original description of *A. frater* (FIBIGER et al. 2006) and later the description of the genital structures of the species in Noctuidae Europaeae 12 (FIBIGER et al. 2010) for the most part was insufficient. The proper taxonomic interpretation of these questions requires further, thorough investigations.

Diagnosis. *A. amurensis* differs from *A. clavis* externally mostly by the darker colouration of the forewings. The male genitalia of *A. amurensis* (Figs 16–18) differ from those of *A. clavis* by the significantly larger medial diverticulum and the 1.3–1.5 times longer terminal tube of the vesica. In the female genitalia the difference between the two species is also significant; the appendix bursae is considerably longer in *A. amurensis* than in *A. clavis* (1.3–1.5 times).

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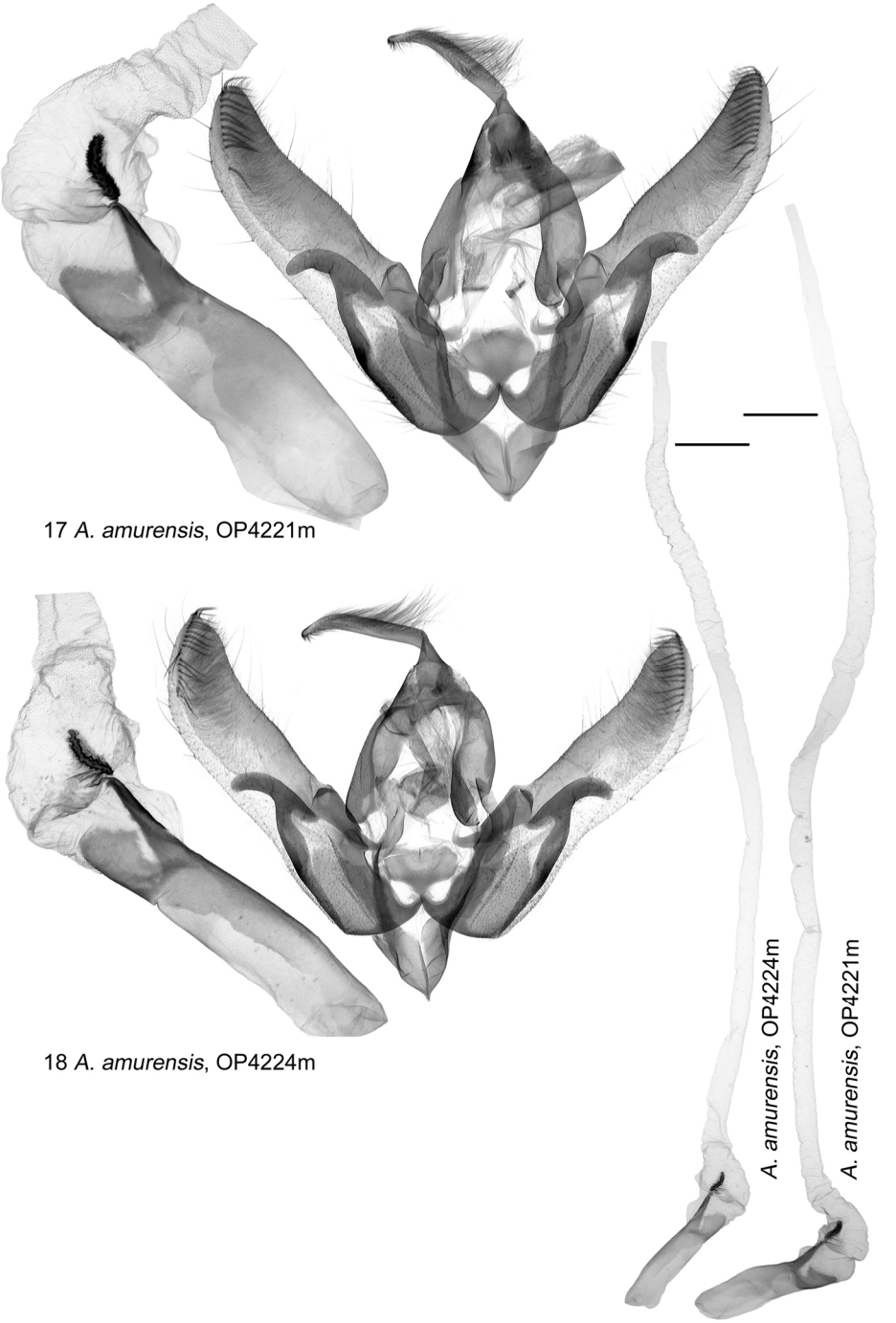

Figures 17–18. *Agrotis* spp, male genitalia. 17, *A. amurensis*, RF, Ural, Moskovo (OP); 18, *A. amurensis*, RF, Buryatia, Mondy (OP).

19 *A. clavis*, OP3134f

20 *A. amurensis* (*A. frater*, PT)

21 *A. amurensis*, OP4225f

22 *A. amurensis*, OP4206f

Figures 19–22. *Agrotis* spp, female genitalia. 19, *A. clavis*, Hungary (OP); 20, *A. amurensis*, RF, Ural (PT of *A. frater*, after Fibiger et al., 2006); 21, *A. amurensis*, RF, Buryatia, Mondy (OP); 22, *A. amurensis*, RF, Vladivostok (HNHM).

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