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Review of the genus *Yponomeuta* Latreille, 1796 (Lepidoptera: Yponomeutidae) in China

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Abstract. Thirty-four species of the genus *Yponomeuta* Latreille, 1796 from China are reviewed, with diagnostic characters given to each species. Five species among them are described as new to science, including *Y. changbaishana* Li sp. nov., *Y. furvimaculata* Li sp. nov., *Y. heterochroma* Li sp. nov., *Y. quinquepunctata* Li sp. nov. and *Y. similicinefacta* Li sp. nov. Nine species are newly recorded for the Chinese fauna. The female of *Y. osakae* Moriuti, 1977 is described for the first time. Images of adults and illustrations of available genitalia of all the species treated in this article are provided. A list of the related genus *Teinoptila* Sauber, 1902 is given, including eleven newly proposed combinations and two revised combinations.

Keywords. Microlepidoptera, Yponomeutoidea, taxonomy, new species, new record.

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Introduction

The genus *Yponomeuta* Latreille, 1796 is the type genus of the family Yponomeutidae Stephens, 1829. Lewis & Sohn (2015) provided a world catalogue of this family, presenting 79 species. Agassiz (2019) additionally reported 16 species of *Yponomeuta* from the Afrotropical Region, in which he treated the genera *Ptiloteina* Gershenson & Ulenberg, 1998 and *Teinoptila* Sauber, 1902 as synonyms of *Yponomeuta*. Sohn (2021) restored *Teinoptila* as a valid genus, but the species *Y. ingens* (Gershenson & Ulenberg, 1998) and *Y. puncticornis* (Walsingham, 1891), which were transferred from *Teinoptila* by Agassiz (2019), remain in *Yponomeuta*. Joshi *et al.* (2024) restored the genus *Ptiloteina* as valid in an Indian Yponomeutoidea catalogue. Prior to this study, the genus *Yponomeuta* comprised 96 described species in the world, of which 21 were recorded in China.

The objective of the present study is to review 34 species of *Yponomeuta* in China, including descriptions of five species new to science and the report of nine species newly recorded for the Chinese fauna.

Yponomeuta malinellus Zeller, 1838 is not included in the list of the Chinese *Yponomeuta* due to its distribution uncertainty. A key to the Chinese species of *Yponomeuta* is provided, along with distribution maps of all the species in China (Figs 1–2).

Material and methods

The examined specimens were collected by light traps in mountainous areas of China. All studied specimens, including the types of the new species, are deposited in the Insect Collection of Tianjin Natural History Museum, Tianjin, China (TJNHM).

Images of adults and genitalia were taken using a Leica M205A stereo microscope and a Leica DM750 microscope equipped with Leica Application Suite ver. 4.2 software. Permanent slide mounting methods of genitalia follow the techniques introduced by Li (2002).

The wingspan is measured between the tips of the forewings. The species are arranged in alphabetical order. The terminology of morphological parts follows Moriuti (1977).

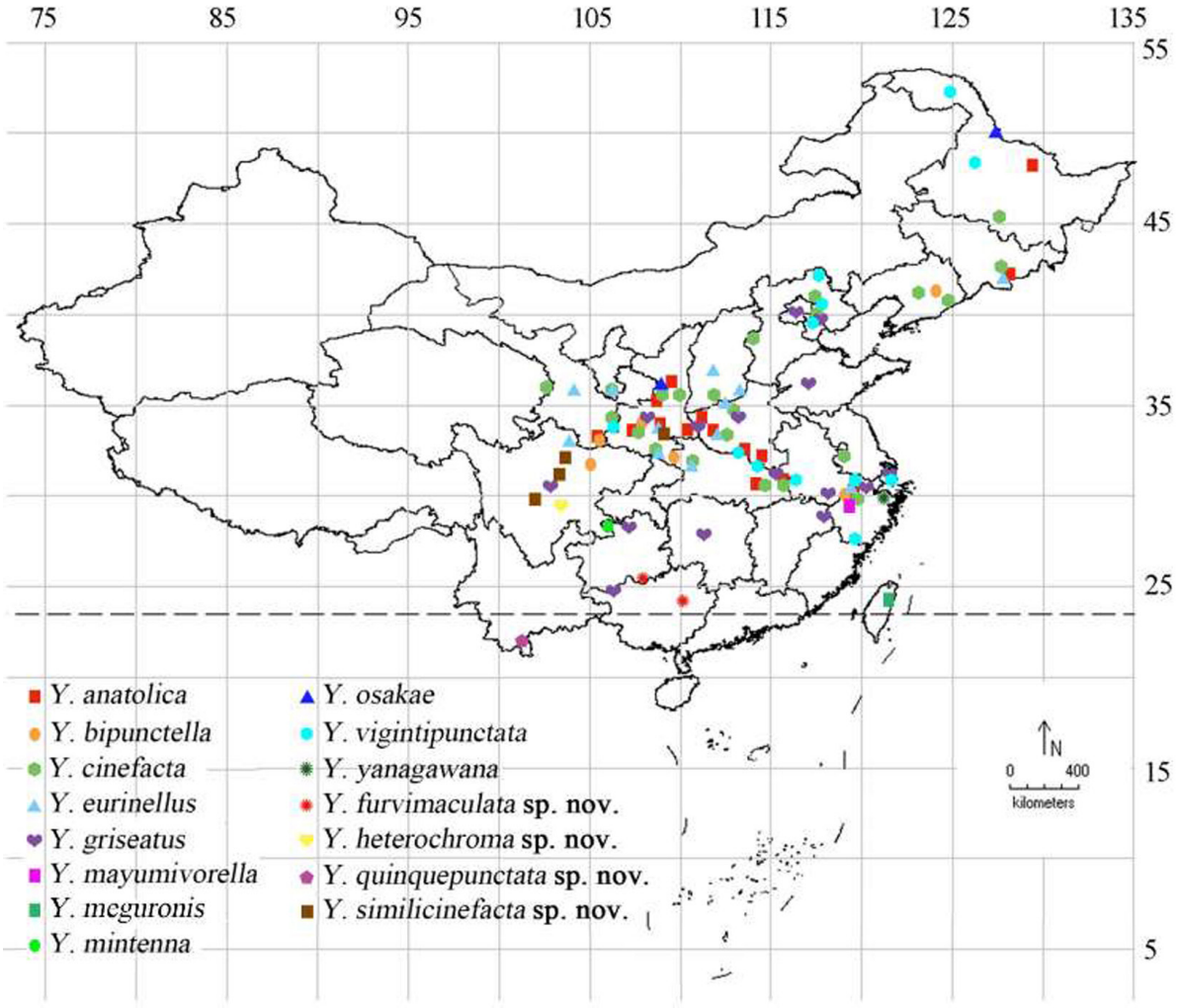

Fig. 1. Distribution of grey-colored *Yponomeuta* spp. in China.

Institutional abbreviations

DJLA = David Agassiz, private collection – to be deposited in NHMUK, London, UK
EIHU = Entomological Institute, Hokkaido University, Sapporo, Japan
IZCAS = Institute of Zoology, Chinese Academy of Sciences, Beijing, China
LSL = Linnean Society of London, London, UK
MFN = Museum für Naturkunde (Natural History Museum), Berlin, Germany
MGAB = Muzeul National de Istoria Naturala "Grigore Antipa", Bucharest, Romania
MRAC = Royal Museum of Central Africa, Tervuren, Belgium
NHMUK = Natural History Museum, London, UK
NMS = Senckenberg Naturmuseum, Frankfurt, Germany
NWAFU = Insect Collection of Northwest A&F University, Shaanxi, China
OPU = Osaka Metropolitan University (formerly Osaka Prefecture University), Sakai, Osaka, Japan
RBINS = Institut royal des Sciences naturelles de Belgique, Brussels, Belgium
RMNH = Naturalis Biodiversity Center, Leiden, Netherlands
TMB = Termeszettudomanyi Muzeum Allattara, Budapest, Hungary
TJNHM = Insect Collection of Tianjin Natural History Museum, Tianjin, China
TMSA = Ditsong Museum of Natural History, Pretoria (formerly the Transvaal Museum)

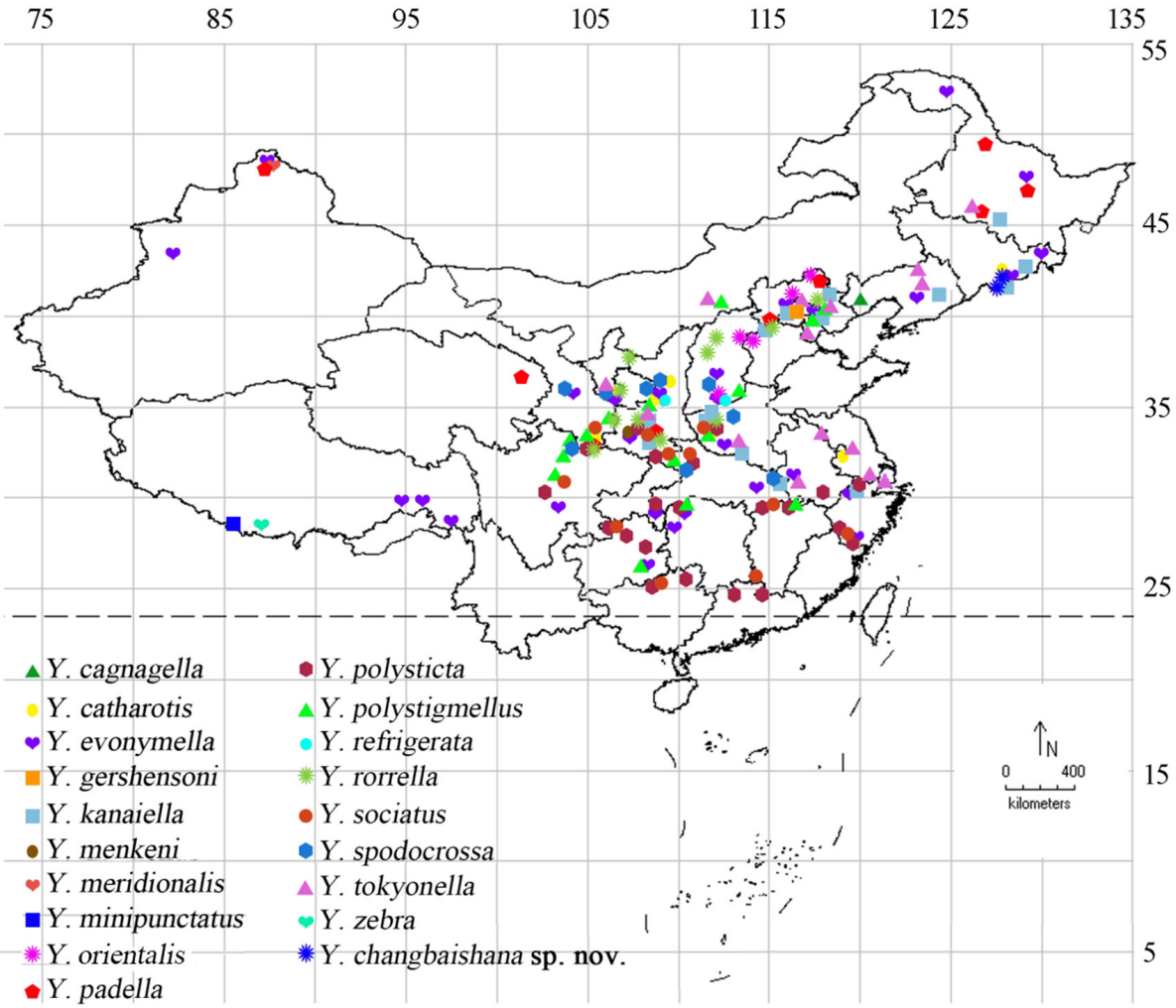

Fig. 2. Distribution of white-colored *Yponomeuta* spp. in China

USNM = United States National Museum of Natural History, Washington DC, USA
ZIN = Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia

Other abbreviations

TD = type depository
TL = type locality

Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Lepidoptera Linnaeus, 1758
Family Yponomeutidae Stephens, 1829

Genus ***Yponomeuta*** Latreille, 1796

Yponomeuta Latreille, 1796: 146. Type species: *Phalaena Tinea evonymella* Linnaeus, 1758.
Hyphantes Hübner, 1806: 2. Type species: *Phalaena Tinea evonymella* Linnaeus, 1758.
Erminea Haworth, 1812: 512. Type species: *Phalaena Tinea evonymella* Linnaeus, 1758.
Hyponomeuta Billberg, 1820: 91 (unjustified emendation of *Yponomeuta*). Type species: *Phalaena Tinea evonymella* Linnaeus, 1758.
Coenyphantes Hübner, 1822: 65. Type species: *Phalaena Tinea evonymella* Linnaeus, 1758.
Coeniphantes Hübner, 1822: 67 (misspelling of *Coenyphantes*).
Nygmia Hübner, 1825: 412. Type species: *Phalaena Tinea evonymella* Linnaeus, 1758.
Ypomeneuta Eversmann, 1844: 564 (misspelling of *Yponomeuta*).
Hypomeneuta Zeller, 1846: 165 (misspelling of *Hyponomeuta*).
Hyponomenta Turner, 1898: 201 (misspelling of *Hyponomeuta*).

Generic characters

Adult

Head with appressed scales on frons and with rough or smooth long scales between antennae. Antenna filiform. Labial palpus with third segment as long as or slightly longer than second segment. Forewing 13-veined; cell rather long, about ¾ × as long as forewing, accessory cell present; R_3 from upper corner of accessory cell, R_4 and R_5 separated or arising from same point, 1A+2A forming quite small basal fork. Hindwing with 10-veins, M_3 and CuA_1 fused.

Male genitalia

Uncus subquadrate. Socius with one or two apical thorns. Ventral plate of gnathos developed into paired processes in most species, and forming a small plate in some species (e.g., *Y. meraculus* Bradley, 1962, *Y. morbillosa* Zeller, 1877, *Y. strigillata* Zeller, 1852, *Y. zambesica* Agassiz, 2019). Valva broad, with long hair ventrally; transtilla developed; sacculus narrow. Saccus clavate, usually widened apically. Cornuti composed of four spines.

Female genitalia

Apophyses anteriores as long as or slightly shorter than apophyses posteriores, branched basally. Lamella postvaginalis composed of paired, hairy processes. Antrum sclerotised, funnel-shaped. Ductus bursae membranous. Corpus bursae membranous; signum usually absent.

General characterisation

Yponomeuta is characterised by a series of black dots along the veins on the forewing in most species and a well-defined accessory cell; in the male genitalia, by the subquadrate uncus, the ventral plate of the gnathos developed into paired processes or a small plate, and the aedeagus with cornuti composed of four distinct spines; and in the female genitalia by the paired, hairy lamella postvaginalis, and the sclerotised, funnel-shaped antrum.

Distribution peculiarities

Species of *Yponomeuta* are distributed all over the world (except the Arctic and Antarctic), and about 55 species are distributed in the Palearctic and Oriental regions. The species diversity of *Yponomeuta* is higher in northern, eastern and central China.

Key to the species of *Yponomeuta* Latreille, 1796 in China

1. Forewing without a series of black dots 2
– Forewing with a series of black dots 3

2. Forewing with transverse black strips, without inverted subtrapezoidal dark grey blotch (Sohn *et al.* 2010: 2808, fig. 6) ..... ***Y. zebra*** Sohn & Wu, 2010
– Forewing without transverse black strips, with inverted subtrapezoidal dark grey blotch suffused with dark grey (Fig. 4C) ..... ***Y. heterochroma*** Li sp. nov.

3. Forewing ground colour white 4
– Forewing ground colour not white 20

4. Forewing with dots along veins R_3 and R_4 (Fig. 4H) ..... ***Y. minipunctatus*** Gershenson & Ulenberg, 1998
– Forewing without dots along veins R_3 and R_4 5

5. Forewing with dots between series of submedian and subdorsal dots 6
– Forewing without dots between series of submedian and subdorsal dots 8

6. Valva with apex curved inwards (Fig. 9B) ..... ***Y. menkeni*** Gershenson & Ulenberg, 1998
– Valva with apex differently shaped 7

7. Valva broadest at basal $^2/_5$, ventral plate of gnathos with processes directed straightly outward (Fig. 10C) ..... ***Y. polysticta*** (Butler, 1879)
– Valva broadest at middle, ventral plate of gnathos with processes directed obliquely downward (Fig. 11C) ..... ***Y. sociatus*** Moriuti, 1972

8. Sacculus with dense bristles distally (Fig. 12A) ..... ***Y. tokyonella*** (Matsumura, 1931)
– Sacculus without bristles 9

9. Ventral plate of gnathos with processes parallel-sided 10
– Ventral plate of gnathos with processes sided in a different way 13

10. Uncus with posteromedial process (Fig. 7C) ..... ***Y. cagnagella*** (Hübner, [1813])
– Uncus without posteromedial process 11

11. Valva with apex curved upwards (Fig. 9C) ..... ***Y. meridionalis*** Gershenson, 1972
– Valva with apex curved in a different way 12

12. Valva with pointed apex (Fig. 8B) ..... ***Y. evonymella*** (Linnaeus, 1758)
– Valva with obtuse apex (Fig. 9F) ..... ***Y. orientalis*** Zagulajev, 1969

13. Costa concave in distal half 14
– Costa not concave in distal half 15

14. Saccus parallel-sided anteriorly (Fig. 10B) ..... ***Y. padella*** (Linnaeus, 1758)
– Saccus slightly dilated anteriorly (Fig. 10F) ..... ***Y. refrigerata*** (Meyrick, 1931)

15. Sacculus obtusely produced ventrally before apex (Fig. 11D) ..... ***Y. spodocrossa*** (Meyrick, 1935)
– Sacculus not produced ventrally 16

16. Valva with apex curved upwards 17
– Valva with apex of different shape 19

17. Valva parallel-sided medially (Fig. 7D) ..... ***Y. catharotis*** (Meyrick, 1935)
– Valva not parallel-sided medially 18

18. Valva subparallel from near base to subapex (Fig. 8F) ..... ***Y. kanaiella*** (Matsumura, 1931)
– Valva narrowed from near base to apex (Fig. 11A) ..... ***Y. rorrella*** (Hübner, 1796)

19. Valva produced ventromedially (Fig. 7E) ..... ***Y. changbaishana*** Li sp. nov.
– Valva not produced ventromedially (Fig. 10D) ..... ***Y. polystigmellus*** (Felder & Felder, 1862)

20. Forewing without a series of subradial and supramedian dots 21
– Forewing with a series of subradial and supramedian dots 23

21. Saccus bulbed apically (Fig. 7F) ..... ***Y. cinefacta*** (Meyrick, 1935)
– Saccus subparallel-sided 22

22. Ventral plate of gnathos long, 3/5 as long as saccus (Fig. 10A) ..... ***Y. osakae*** Moriuti, 1977
– Ventral plate of gnathos short, ¼ as long as saccus (Fig. 12B) ... ***Y. vigintipunctata*** (Retzius, 1783)

23. Valva with crescent basal plate (Fig. 7A) ..... ***Y. anatolica*** (Stringer, 1930)
– Valva without basal plate 24

24. Ventral plate of gnathos trapezoidal, without paired processes 25
– Ventral plate of gnathos developed into paired processes 26

25. Uncus concave medially on posterior margin, saccus as long as uncus (Fig. 8C) ..... ***Y. furvimaculata*** Li sp. nov.
– Uncus straight on posterior margin, saccus slightly shorter than uncus (Fig. 10E) ..... ***Y. quinquepunctata*** Li sp. nov.

26. Socius with pleat in distal half (Fig. 9A) ..... ***Y. mayumivorella*** (Matsumura, 1931)
– Socius without pleat 27

27. Socius roundly produced on inner margin (Fig. 11B) ..... ***Y. similicinefacta*** Li sp. nov.
– Socius not roundly produced on inner margin 28

28. Aedeagus shorter than valva (Fig. 8A) ..... ***Y. eurinellus*** Zagulajev, 1969
– Aedeagus longer than valva 29

29. Ventral plate of gnathos with processes not spinous (Fig. 9E) ..... ***Y. mintenna*** (Povel, 1985)
– Ventral plate of gnathos with processes spinous 30

30. Uncus concave at middle on posterior margin (Moriuti 1977: pl. xxvii fig. 275) .....
..... ***Y. meguronis*** (Mastumura, 1931)
– Uncus straight on posterior margin 31

31. Valva roundly produced on ventral margin (Fig. 7B) ..... ***Y. bipunctella*** (Matsumura, 1931)
– Valva not produced on ventral margin 32

32. Saccus slightly dilated anteriorly (Fig. 8D) ..... ***Y. griseatus*** Moriuti, 1977
– Saccus uniformly slender (Fig. 12C) ..... ***Y. yanagawana*** (Matsumura, 1931)

Remark

Yponomeuta gershensoni is not included in the key because its male is still unknown, and its external characters are similar to those of some other species of *Yponomeuta*.

Yponomeuta anatolica (Stringer, 1930)
Figs 3A, 7A, 13A

Hyponomeuta anatolica Stringer, 1930: 419. TL: Japan (Honshu, Toyama Pref. Fushiki). TD: NHMUK.

Yponomeuta anatolica – Inoue 1954: 37.

Diagnosis (adult; Fig. 3A)

Wingspan 18.0–23.0 mm. *Yponomeuta anatolica* is distinguishable from other congeneric species by a set of unique characters in the male and female genitalia: 1) the uncus concave posteromedially, 2) the valva with a sclerotised, crescent-shaped basal plate (Fig. 7A); and in the female genitalia, by 3) the ductus seminalis arising from posterior $^{2}/_{5}$ of the ductus bursae, 4) the elongate ovate corpus bursae (Fig. 13A).

Material examined

CHINA – **Gansu** • 1 ♂; Kang County; 1100 m a.s.l.; 1 Jun. 1995; Aisihaer leg.; slide no. L95211; TJNHM. – **Henan** • 21 ♂♂; Luoshan County, Mt Ling; 350 m a.s.l.; 21–23 May 2000; H.L. Yu leg.; slide nos YHL00329♂, YHL00332♂; TJNHM • 16 ♀♀; same data as for preceding; slide no. JQ10057♀; TJNHM • 2 ♂♂, 1 ♀; Tongbai, Shuiliandong; 300 m a.s.l.; 24–26 May 2000; H.L. Yu leg.; slide no. YHL00334♂; TJNHM • 3 ♀♀; Shan County, Mt Gan; 1100 m a.s.l.; 1 Jun. 2000; M.C. Wei leg.; slide no. YHL00325; TJNHM • 1 ♂, 2 ♀♀; Neixiang County, Baotianman; 1200 m a.s.l.; 25 May–2 Jun. 2006; J.M. Lv and X. Zhang leg.; slide no. JQ10028♂; TJNHM • 1 ♂; Mt Funiu; 33.64° N, 111.66° E; 1109 m a.s.l.; 22 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22137; TJNHM. – **Hubei** • 3 ♂♂; Yingshan County, Mt Wu; 7–8 Jul. 2008; Y.L. Xiao leg.; slide no. LHY21980; TJNHM • 3 ♂♂; Taohuachong; 30.99° N, 116.03° E; 635 m a.s.l.; 24–27 Jun. 2014; W. Guan and M.Q. Yang leg.; slide nos LHY21987 to LHY21988; TJNHM • 1 ♂; Luotian County, Qingtaiguan; 31.19° N, 115.69° E; 570 m a.s.l.; 2 Jul. 2014; W. Guan and M.Q. Yang leg.; slide no. LHY22168; TJNHM. – **Jilin** • 2 ♂♂; Mt Changbai Nature Reserve; 19 Jul. 2016; M.J. Qi *et al.* leg.; slide no. LHY21904; TJNHM. – **Shaanxi** • 12 ♀♀; Danfeng, Tieyupu; 680 m a.s.l.; 27–29 May 1994; J. Zhou leg.; slide nos YHL00119♀ to YHL00120♀; TJNHM • 11 ♂♂; same data as for preceding; slide no. YHL00121♂; TJNHM • 1 ♂, 1 ♀; Qinling, Jiwozi; 1840 m a.s.l.; 1 Jul. 2015; H.L. Yu and K.L. Liu leg.; slide no. LHY22263♂; TJNHM • 2 ♂♂; Taibai,

Huangbaiyuan; 33.48° N, 107.32° E; 1295 m a.s.l.; 29 Jun. 2016; M.Y. Cheng and Y.F. Hou leg.; slide no. LHY22064; TJNHM • 1 ♂; Yan'an, Nanniwan; 36.26° N, 109.67° E; 1157 m a.s.l.; 17 Jun. 2019; S. Yu leg.; slide no. LHY22081; TJNHM • 2 ♂♂; Ganquan County, Yaodian Village; 36.25° N, 109.37° E; 975 m a.s.l.; 18–19 Jun. 2019; S. Yu leg.; slide no. LHY22085; TJNHM • 5 ♂♂; Fu County, Ziwuling Nature Reserve, Huaishu Village; 35.86° N, 108.72° E; 1150 m a.s.l.; 20–23 Jun. 2019; S. Yu leg.; slide nos LHY22089♂, LHY22240♂; TJNHM • 4 ♀♀; same data as for preceding; slide nos LHY22241♀ to LHY22242♀; TJNHM • 2 ♂♂, 1 ♀; Fu County, Zhiluo Town; 35.81° N, 108.64° E; 1244 m a.s.l.; 24–25 Jun. 2019; S. Yu leg.; slide no. LHY22092♂; TJNHM • 15 ♂♂; Xunyi County, Mt Shimen Forest Park; 35.08° N, 108.58° E; 1654 m a.s.l.; 2–3 Jul. 2019; S. Yu leg.; slide nos LHY22100, LHY22101; TJNHM.

Host plant

Celastraceae R.Br.: *Euonymus* sp. (Moriuti 1977: 186).

Distribution

China (Anhui, Gansu, Heilongjiang, Henan, Hubei, Jilin, Shaanxi, Shandong, Zhejiang), Japan, Korea, Russia (Liu & Huang 1996: 3; Lewis & Sohn 2015: 122; Wang & Cong 2020: 32).

Yponomeuta bipunctella (Matsumura, 1931)
Figs 3B, 7B, 13B

Hyponomeuta bipunctella Matsumura, 1931: 1097. TL: Japan (Hokkaido, Sapporo). TD: EIHU.

Yponomeuta bipunctella – Inoue 1954: 38.

Diagnosis (adult; Fig. 3B)

Wingspan 13.5–16.0 mm. *Yponomeuta bipunctella* is distinguishable in the male genitalia by the broad valva with the ventral margin being extremely arched (Fig. 7B), and in the female genitalia by the ventral arm of the apophyses anteriores forming a large sclerotised plate on the lamella postvaginalis (Fig. 13B). It is similar to *Y. meguronis* (Mastumura, 1931), but *Y. bipunctella* can be distinguished from *Y. meguronis* in the male genitalia by possessing the socius which is nearly as long as the saccus, the ventral plate of the gnathos with long processes, and the costa nearly straight. In *Y. meguronis*, the socius is longer than the saccus, the ventral plate of the gnathos has short, small processes, and the costa is convex in the basal half (Moriuti 1977: pl. xxvii fig. 275).

Material examined

CHINA – **Gansu** • 1 ♂; Kang County; 1100 m a.s.l.; 4 Jun. 1995; Aisihaer leg.; slide no. L95209; TJNHM. – **Hubei** • 1 ♂; Mt Bagua; 32.09° N, 109.67° E; 790 m a.s.l.; 12 Jul. 2017; W.D. Qi *et al.* leg.; slide no. LJ17334; TJNHM. – **Liaoning** • 1 ♂; Benxi County, Wenquan Temple; 30 Jun. 2010; J.Y. Liu and Y.P. Cai leg.; slide no. LHY21889; TJNHM. – **Zhejiang** • 1 ♂; Mt Tianmu, Chanyuan Temple; 350 m a.s.l.; 5 Aug. 1999; H.H. Li *et al.* leg.; slide no. YHL00058; TJNHM • 1 ♂; Lin'an, Shunxi; 420 m a.s.l.; 12 Aug. 2007; Q. Jin leg.; slide no. JQ08324♂; TJNHM • 1 ♀; same data as for preceding; slide no. JQ08325♀; TJNHM • 2 ♂♂; Mt Tianmu, Zhonglieci; 400 m a.s.l.; 27 Jul. 2011; L.L. Yang and N. Chen leg.; slide nos LHY21925, LHY22243; TJNHM • 1 ♂; Mt Tianmu; 30.31° N, 119.44° E; 325 m a.s.l.; 28 Jun. 2013; A.H. Yin and X.C. Wang leg.; slide no. LHY21927; TJNHM • 1 ♂; Mt Tianmu, Sanmuping; 30.37° N, 119.43° E; 789 m a.s.l.; 11 Aug. 2014; A.H. Yin *et al.* leg.; slide no. LHY21965♂; TJNHM.

Host plant

Celastraceae: *Euonymus fortunei* (Turcz.) Hand.-Maz. (Moriuti 1977: 195).

Distribution

China (Gansu, Hubei, Liaoning, Shaanxi, Sichuan, Zhejiang), Japan, and Russia (Liu & Huang 1996: 4; Lewis & Sohn 2015: 123).

Yponomeuta cagnagella (Hübner, [1813])
Figs 3C, 7C

Tinea cagnagella Hübner, [1813]: 58. TL: Europe. TD: unknown.
Hyponomeuta evonymi Zeller, 1844: 223 (unnecessary replacement name for *Tinea cagnagella*).

Nygmia cagnatella – Hübner 1825: 412 (misspelling of *cagnagella*).
Yponomeuta cognatella – Treitschke 1832: 220 (unjustified emendation of *cagnagella*).
Hyponomeuta cognatella – Meyrick 1914: 17.
Yponomeuta cagnagellus – Hanneman 1977: 138.

Diagnosis (adult; Fig. 3C)

Wingspan 22.0 mm. *Yponomeuta cagnagella* is similar to *Y. orientalis* in the male genitalia. This species can be distinguished from *Y. orientalis* by possessing the uncus with a small triangular process posteromedially, the costa slightly concave medially, and the valva pointed apically (Fig. 7C). In *Y. orientalis*, the uncus lacks a posterior process, the costa is straight, and the valva is obtuse apically (Fig. 9F).

Material examined

CHINA – **Liaoning** • 1 ♂; Jianchang County, Mt Bailang; 40.80° N, 119.90° E; 480 m a.s.l.; 11 Aug. 2016; M.J. Qi *et al.* leg.; slide no. LHY21891; TJNHM.

Host plants

Celastraceae: *Euonymus alatus* (Thunb.) Siebold, *E. europaea* Linneaus, *E. japonicus* Thunb., *E. kiautschovicus* Loes., *E. verrucosus* Scop. (Lewis & Sohn 2015: 123).

Distribution

China (Liaoning), new record, Albania, Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Israel, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, UK, USA, [former]Yugoslavia (Lewis & Sohn 2015: 123).

Remark

This species is newly recorded for China.

Yponomeuta catharotis (Meyrick, 1935)
Figs 3D, 7D, 13C

Hyponomeuta catharotis Meyrick, 1935b: 88. TL: China (Nanjing, Jiangsu Prov.). TD: MGAB.

Yponomeuta catharotis – Friese 1962: 307.

Diagnosis (adult; Fig. 3D)

Wingspan 16.0–22.0 mm. *Yponomeuta catharotis* is similar to *Y. kanaiella* (Matsumura, 1931) and *Y. spodocrossa* (Meyrick, 1935) in the male genitalia. It can be distinguished by the forewing without the series of subradial dots, while the subradial dots are present in the latter two species (Figs 4D, 6E). In the male genitalia, the apex-pointed valva of *Y. catharotis* is strongly curved dorsad, and the valvae of the other two species are obtuse at the apex; *Y. kanaiella* has a broad valva obtusely produced on the ventral margin, while the elongate valvae of *Y. catharotis* and *Y. spodocrossa* are not produced on the ventral margin (Figs 7D, 8F, 11D). In the female genitalia, the intersegmental membrane between the papillae anales and the eighth abdominal segment is about ½ as long as the papillae anales in *Y. catharotis*, which is nearly as long as the papillae anales in *Y. kanaiella* and *Y. spodocrossa*; the corpus bursae of *Y. kanaiella* is elongate oviform, and the corpus bursae of *Y. catharotis* and *Y. spodocrossa* are round (Figs 13C, 14C, 16C).

Material examined

CHINA – **Gansu** • 1 ♂; Kang County, Douba Forestry Centre; 1200 m a.s.l.; 5 Jun. 1995; Aisihaer leg.; slide no. YHL00430; TJNHM. – **Henan** • 6 ♂♂, 5 ♀♀; Nei Town, Baotianman; 1350 m a.s.l.; 13–15 Jul. 1998; H.H. Li leg.; slide no. YHL00140♂; TJNHM • 20 ♂♂; Mt Luo, Lingshan Temple; 350 m a.s.l.; 21–23 May 2000; H.L. Yu leg.; slide no. YHL00323♂; TJNHM • 46 ♀♀; same data as for preceding; slide no. YHL00330♀; TJNHM • 1 ♂; Lushi County, Shiziping; 1000 m a.s.l.; 30 May 2000; H.L. Yu leg.; slide no. YHL00321; TJNHM • 52 ♂♂, 5 ♀♀; Shan County, Mt Gan; 1100 m a.s.l., 1 Jun. 2000; M.C. Wei leg.; slide no. YHL00319♂; TJNHM • 1 ♂; Jiyuan, Mt Wangwu; 700 m a.s.l.; 3 Jun. 2000; H.L. Yu leg.; slide no. YHL00322; TJNHM • 89 ♂♂; Nei Town, Baotianman; 1200 m a.s.l.; 20 May–4 Jun. 2006; J.M. Lv and X. Zhang leg.; slide No JQ08346♂; TJNHM • 16 ♀♀; same data as for preceding; slide no. JQ08347♀ • 1 ♀; Mt Funiu; 33.61° N, 111.68° E; 1236 m a.s.l.; 22 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22136; TJNHM. – **Jilin** • 2 ♂♂; Lushuihe Town; 42.47° N, 127.77° E; 795 m a.s.l.; 8 Jul. 2023; D. Zhang leg.; slide no. LHY22199; TJNHM. – **Ningxia** • 4 ♂♂, 2 ♀♀; Mt Liupan, Qiuqianjia Forestry Centre; 1700 m a.s.l.; 2 Jul. 2008; S.L. Hao and Z.W. Zhang leg.; slide no. JQ10022♂; TJNHM. – **Shaanxi** • 1 ♀; Yan'an, Nanniwan; 36.26° N, 109.67° E; 1157 m a.s.l.; 17 Jun. 2019; S. Yu leg.; slide no. LHY22082; TJNHM • 8 ♂♂; Yaodian Village; 36.25° N, 109.37°E; 975 m a.s.l.; 18–19 Jun. 2019; S. Yu leg.; slide no. LHY22083; TJNHM • 5 ♂♂, 2 ♀♀; Fu County, Ziwuling Nature Reserve, Huaishu Village; 35.86° N, 108.72° E; 1150 m a.s.l.; 21–23 Jun. 2019; S. Yu leg.; slide no. LHY22088♂; TJNHM • 2 ♂♂; Fu County, Zhiluo Town; 35.81° N, 108.64° E; 1244 m a.s.l.; 24–25 Jun. 2019; S. Yu leg.; slide no. LHY22090; TJNHM • 1 ♂; Xunyi County, Mt Shimen Forest Park; 35.08° N, 108.58° E; 1654 m a.s.l.; 3 Jul. 2019; S. Yu leg.; slide no. LHY22102; TJNHM.

Host plant

Celastraceae: *Euonymus alatus* (Thunb.) Siebold (Gershenson & Ulenberg 1998: 121).

Distribution

China (Gansu, Henan, Hunan, Jiangsu, Jilin, Ningxia, Shaanxi), Russia (Gershenson & Ulenberg 1998: 121; Sohn *et al.* 2010: 2813).

Yponomeuta changbaishana Li sp. nov.
urn:lsid:zoobank.org:act:8115E509-2C86-4BF7-87EB-B5C2F1875DA9
Figs 3E, 7E

Diagnosis

The new species is similar to *Y. orientalis* Zagulajev, 1969 in having a white forewing without the series of the supramedian dots. This new species can be distinguished from *Y. orientalis* by possessing the thorax with four black dots, and in the male genitalia by the uncus being slightly concave on the posterior margin, and the valva being roundly produced medially on the ventral margin. In *Y. orientalis*, the thorax has five black dots; the posterior margin of the uncus is straight, and the valva is subparallel-sided medially (Figs 5B, 9F).

Etymology

The specific epithet is derived from the name 'Changbaishan', the type locality of the new species.

Type material

Holotype

CHINA – **Jilin** • ♂; Changbai County, Shisandaogou Town; 41.43° N, 127.79° E; 556 m a.s.l.; 13 Jul. 2023; D. Zhang leg.; slide no. LHY22298; TJNHM.

Paratype

CHINA – **Jilin** • 1 ♂; Mt Changbai, Gaoshan Garden; 20 Jul. 2016; M.J. Qi *et al.* leg.; slide no. LHY22292; TJNHM.

Description

Adult male (Fig. 3E)

Measurements and coloration. Wingspan 20.0 mm. Body white. Flagellum of antenna ringed with dark brown dorsally. Labial palpus white. Thorax with 4 black dots, one pair at anterior ¼, other pair at posterior 3/8; tegula with 2 black dots. Forewing dark brown along basal 2/5 of costal margin, with approx. 34 black dots, viz., 3 subcostal dots situated from basal 1/8 to basal ⅓, 6 radial dots situated from basal ¼ to distal ⅓ below costal margin, 3 subradial dots situated from distal 2/5 to distal 1/5 below costal margin, 9 submedian dots situated from base to tornus, 6 subdorsal dots situated from near base to before tornus, 7 subdorsal dots situated in distal 1/6 between subradial and submedian area; fringe white, with pale grey median line along costal margin and termen, white mottled with grey along dorsum. Hindwing dark grey; fringe grey, paler distally. Legs white; femur, tibia and tarsus of foreleg dark brown ventrally.

Male genitalia (Fig. 7E). Uncus subquadrate, posterior margin slightly concave. Socius nearly straight, narrowed from near base to apex, with curved apical thorn. Subscaphium parallel-sided. Ventral plate of gnathos paired, thumb-shaped, slightly narrowed from base to obtusely rounded apex. Valva roundly produced ventromedially, obtuse apically, with sclerotised belt extending from near base to below tip of costa; ventral half densely setose from beyond end of sacculus to apex of valva; costa straight; transtilla elongate triangular, slightly narrowed toward tip; sacculus weakly sclerotised, densely setose in distal ¼, with subtriangular distal sclerite directed upwards. Saccus stout, equal in length with sacculus, inflated apically. Aedeagus 3 × as long as saccus; cornuti consisting of four stout spines, narrowed distally, each about 3/5 as long as aedeagus, except middle one being about 2/5 as long as aedeagus, basal spine with spinules in basal ⅓.

Female

Unknown.

Distribution

China (Jilin).

Yponomeuta cinefacta (Meyrick, 1935)
Figs 3F, 7F, 13D

Hyponomeuta cinefacta Meyrick, 1935b: 89. TL: China (Mt Tianmu, Zhejiang Prov.). TD: MGAB.

Yponomeuta cinefactus – Friese 1962: 312.

Diagnosis (adult; Fig. 3F)

Wingspan 17.0–21.0 mm. *Yponomeuta cinefacta* is distinguishable from its congeneric species in the male genitalia by the medially broadened valva produced dorsoapically, and the saccus shorter than the sacculus (Fig. 7F); and in the female genitalia by the mound-shaped lamella postvaginalis (Fig. 13D). *Yponomeuta cinefacta* is similar to *Y. similicinefacta* Li sp. nov. in the male genitalia, and the differences between them are stated in the diagnosis of the latter species.

Material examined

CHINA – **Gansu** • 12 ♂♂; Tianshui, Mt Xiaolong, Dangchuan Forestry Centre; 9–13 Aug. 1988; X.Y. Wu leg.; slide nos YHL00019♂, YHL00042♂ to YHL00043♂, YHL00442♂ to YHL00443♂; TJNHM • 2 ♀♀; same data as for preceding; slide no. YHL00023♀; TJNHM • 195 ♂♂, 3 ♀♀; Tianshui, Dangchuan Forestry Centre; 1331 m a.s.l.; 28–30 Jul. 2006; X.P. Wang and X.F. Shi leg.; slide nos JQ07329♂, JQ08321♂ to JQ08322♂, JQ09010♂, JQ10031♂; TJNHM. – **Hebei** • 1 ♂; Xinglong County, Mt Wuling; 900 m a.s.l.; 31 Jul. 2000; Y.L. Du and Z.D. Li leg.; slide no. YHL00375; TJNHM • 2 ♂♂; Xinglong County, Mt Wuling; 800 m a.s.l.; 3 Jul. 2009; Q. Jin *et al.* leg.; slide no. LHY21840; TJNHM • 3 ♂♂; Xinglong County, Mt Wuling; 40.63° N, 117.43° E; 1000 m a.s.l.; 16–17 Jun. 2014; S.R. Liu *et al.* leg.; slide no. LHY21848; TJNHM • 1 ♀; Shijiazhuang, Lingshou County; 38.71° N, 113.86° E; 928 m a.s.l.; 5–7 Jul. 2016; S.H. Lu and H. Rong leg.; slide no. LHY21850♀; TJNHM • 2 ♂♂; same data as for preceding; slide no. LHY21851♂; TJNHM • 5 ♂♂, 3 ♀♀; Mt Wuling; 40.63° N, 117.51° E; 879 m a.s.l.; 17 Jul. 2016; S.N. Zhao and S.R. Li leg.; slide no. LHY21855♂; TJNHM. – **Heilongjiang** • 5 ♂♂; Mt Mao'er Nature Reserve; 18–19 Aug. 2009; W.C. Li and J.Y. Liu leg.; TJNHM. – **Henan** • 6 ♂♂; Nei County, Baotianman; 1350 m a.s.l.; 13–15 Jul. 1998; H.H. Li *et al.* leg.; slide nos YHL00141♂, JQ08318♂; TJNHM • 4 ♀♀; same data as for preceding; slide no. YHL00143♀; TJNHM • 11 ♂♂, 5 ♀♀; Luoshan County, Lingshan Temple; 350 m a.s.l.; 21–23 May 2000; H.L. Yu leg.; slide no. YHL00331♂; TJNHM • 20 ♂♂, 28 ♀♀; Tongbai, Shuiliandong; 300 m a.s.l.; 24–26 May 2000; H.L. Yu leg.; slide no. YHL00333♂; TJNHM • 3 ♂♂, 2 ♀♀; Dengfeng, Mt Song; 800 m a.s.l.; 9 Jun. 2000; H.L. Yu leg.; slide nos YHL00327♂, YHL00328♂; TJNHM • 12♂♂, 8 ♀♀; Song County, Mt Baiyun; 1580 m a.s.l.; 18–24 Jun. 2002; X.P. Wang leg.; slide nos JQ08315♂, JQ08319♂, JQ09046♂; TJNHM • 13 ♂♂, 8 ♀♀; Yiyang, Mt Huaguo; 1000 m a.s.l.; 1–5 Aug. 2006; D.H. Kuang and H. Zhen leg.; slide nos JQ08320♂, JQ10046♂, LHY22180♂; TJNHM • 4 ♂♂; Nei County, Baotianman; 1200 m a.s.l.; 10–13 Aug. 2006; D.H. Kuang and H. Zhen leg.; slide no. JQ08311; TJNHM • 1 ♂; Mt. Funiu; 33.64° N, 111.66° E; 1109 m a.s.l.; 22 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22138; TJNHM. – **Hubei** • 2 ♂♂; Shennongjia, Songbai Town; 1200 m a.s.l.; 17 Jul. 2003; S.L. Hao leg.; slide no. JQ08329; TJNHM • 2 ♂♂; Shennongjia, Bajiao Temple; 1100 m a.s.l.; 19 Jul. 2003; S.L. Hao leg.; slide nos JQ08304, JQ08331; TJNHM • 1 ♂; Yingshan County, Mt Wu; 8 Jul. 2008; Y.L. Xiao leg.; slide no. LHY21796; TJNHM • 4 ♂♂, 1 ♀; Yingshan County, Taohuachong; 30.99° N, 116.03° E; 635 m a.s.l.; 23–29 Jun. 2014; W. Guan and M.Q. Yang leg.; slide no. LHY21985♂; TJNHM • 1 ♂; Fang County, Duchuan Village; 31.89° N, 110.71° E; 793 m a.s.l.; 19 Jul. 2017; W.D. Qi *et al.* leg.; slide no. LHY22238; TJNHM. – **Jilin** • 1 ♂; Fusong, Lushuihe Town, Xilinhe; 42.58° N, 127.87° E;

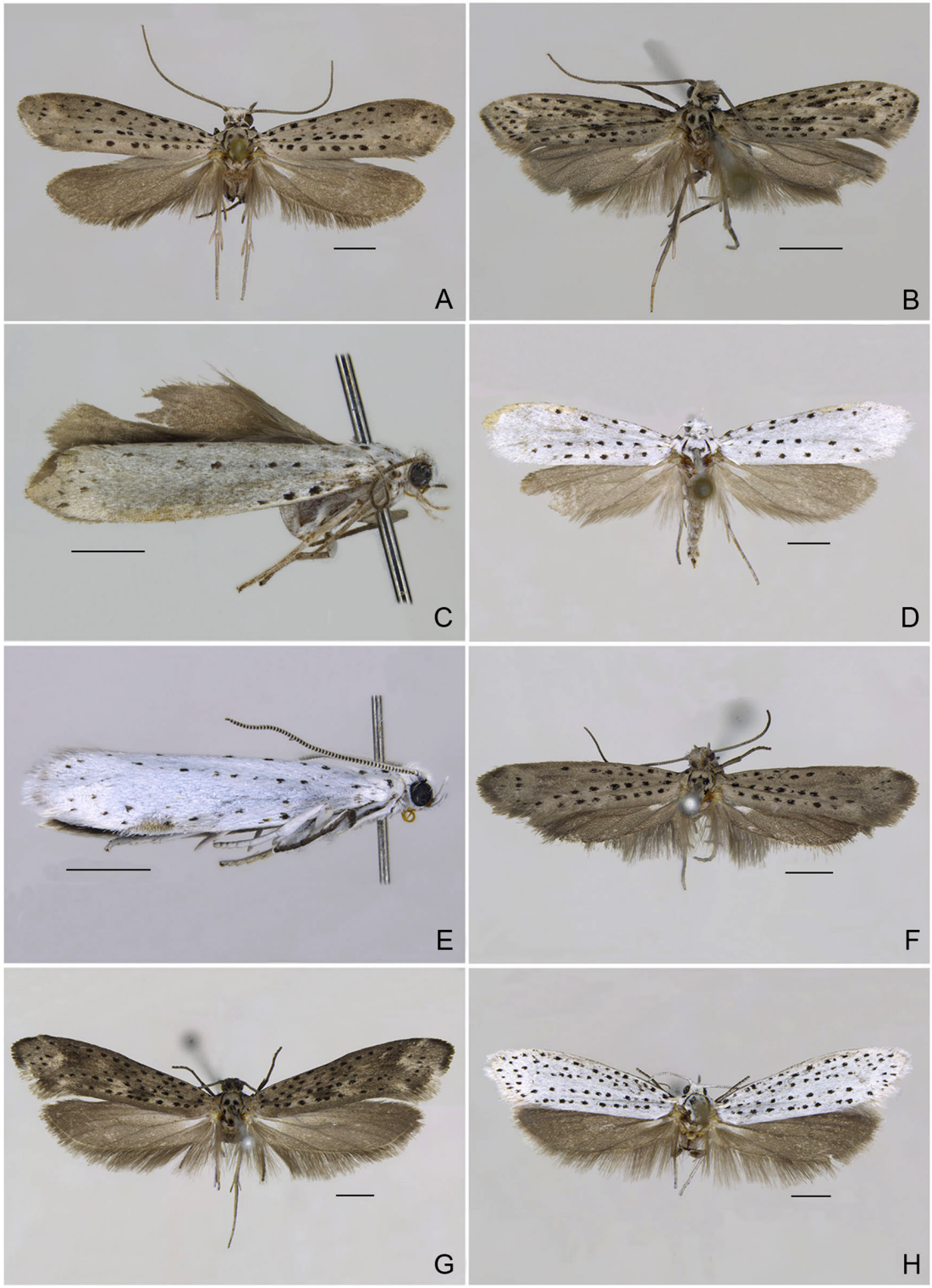

Fig. 3. Adults of *Yponomeuta* spp. **A**. *Y. anatolica* (Stringer, 1930), ♂ (slide no. YHL00334). **B.** *Y. bipunctella* (Matsumura, 1931), ♂ (slide no. LHY21925). **C**. *Y. cagnagella* (Hübner, [1813]), ♂ (slide no. LHY21891). **D**. *Y. catharotis* (Meyrick, 1935), ♀. **E**. *Y. changbaishana* Li sp. nov., holotype, ♂ (slide no. LHY22298). **F**. *Y. cinefacta* (Meyrick, 1935), female (slide no. LHY21850). **G**. *Y. eurinellus* Zagulajev, 1969, ♂ (slide no. LHY22005). **H**. *Y. evonymella* (Linnaeus, 1758), ♂ (slide no. LHY21864). Scale bars = 2.0 mm.

615 m a.s.l.; 12 Jul. 2023; D. Zhang leg.; slide no. LHY22207; TJNHM • 1 ♂; Changbai, Shisandaogou, Xigang; 41.45° N, 127.76° E; 856 m a.s.l.; 16 Jul. 2023; D. Zhang leg.; slide no. LHY22219♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22220♀; TJNHM • 3 ♂♂; Yanbian, Antu County; 42.34° N, 128.14° E; 820 m a.s.l.; 17 Jul. 2023; D. Zhang leg.; slide no. LHY22223; TJNHM • 4 ♂♂; Antu, Mt Changbai Nature Reserve, Dayangcha; 42.35° N, 127.95° E; 892 m a.s.l.; 19 Jul. 2023; D. Zhang leg.; slide no. LHY22230; TJNHM. – **Liaoning** • 2 ♀♀; Kuandian; 20–24 Aug. 2007; S.P. Sun leg.; slide nos JQ07363♀, JQ07365♀; TJNHM • 1 ♂; same data as for preceding; slide no. JQ07364♂; TJNHM • 4 ♂♂, 2♀♀; Anshan, Qianshan; 41.00° N, 123.13° E; 225 m a.s.l.; 4 Aug. 2016; M.J. Qi *et al.* leg.; slide no. LHY21892♂; TJNHM • 21 ♂♂; Anshan, Taihegong; 41.00° N, 123.10° E; 340 m a.s.l.; 5–6 Aug. 2016; M.J. Qi *et al.* leg.; slide no. LHY21893♂; TJNHM • 3 ♀♀; same data as for preceding; slide no. LHY21894♀; TJNHM. – **Ningxia** • 1 ♂; Mt Liupan, Dongshanpo Forestry Centre; 2050 m a.s.l.; 7 Jul. 2008; S.L. Hao and Z.W. Zhang leg.; TJNHM. – **Qinghai** • 1 ♂; Xunhua, Mengda; 2240 m a.s.l.; 15 Jul. 1995; H.H. Li and S.X. Wang leg.; slide no. YHL00130; TJNHM. – **Shaanxi** • 13 ♂♂; Cheng City, Zhaozhuang; 1000 m a.s.l.; 9–11 Jul. 1993; H.H. Li leg.; slide nos YHL00014♂, YHL00020♂, YHL00033♂; TJNHM • 1 ♀; same data as for preceding; slide no. YHL00025♀; TJNHM • 1 ♂; Ningshan County, Xunyangba; 1400 m a.s.l.; 3 Aug. 2014; J.Y. Luo and Y. Fei leg.; slide no. LHY22059; TJNHM • 1 ♂; Taibai County, Huangbaiyuan Town; 20 Aug. 2014; K.L. Liu and Y. Fei leg.; slide no. LHY22060; TJNHM • 7 ♂♂; Shangluo, Niubeiliang, Beigou; 32.47° N, 108.52° E; 1341 m a.s.l.; 23–24 Jul. 2016; W.X. Feng and W.T. Shi leg.; slide no. LHY22354; TJNHM • 1 ♀; Taibai County, Huangbaiyuan Town; 33.48° N, 107.32° E; 1295 m a.s.l.; 29 Jun. 2016; J.X. Zhao and Y. Fei leg.; slide no. LHY22062♀; TJNHM • 1 ♂; same data as for preceding; slide no. LHY22063♂; TJNHM • 3 ♂♂; Baxian, Longshan Village; 32.02° N, 109.18° E; 1466 m a.s.l.; 4–5 Aug. 2016; J.X. Zhao and P. Liu leg.; slide no. LHY22351; TJNHM • 2 ♂♂, 8 ♀♀; Langao, Qiancenghe; 32.07° N, 108.48° E; 1338 m a.s.l.; 10 Aug. 2016; J.X. Zhao and P. Liu leg.; slide nos LHY22070♂, LHY22352♂; TJNHM • 7 ♂♂, 11 ♀♀; Hengxi Town; 32.22° N, 108.81° E; 877 m a.s.l.; 11–14 Aug. 2016; J.X. Zhao and P. Liu leg.; slide nos. LHY22072♂, LHY22353♂; TJNHM • 1 ♀; Ganquan County, Yaodian Village; 36.25° N, 109.37° E; 975 m a.s.l.; 19 Jun. 2019; S. Yu leg.; slide no. LHY22084; TJNHM • 2 ♂♂, 3 ♀♀; Huangling County, Diantou Town; 35.64° N, 109.08° E; 921 m a.s.l.; 27–28 Jun. 2019; S. Yu leg.; slide no. LHY22094♂; TJNHM • 3 ♀♀; Yijun County, Taian Town; 35.35° N, 108.98° E; 1274 m a.s.l.; 29 Jun. 2019; S. Yu leg.; slide no. LHY22096♀; TJNHM • 2 ♂♂; same data as for preceding; slide no. LHY22097♂; TJNHM • 9 ♀♀; Tongchuan, Liulin Village; 35.06° N, 108.81° E; 887 m a.s.l.; 30 Jun. 2019; S. Yu leg.; slide no. LHY22098♀; TJNHM • 4 ♂♂; same data as for preceding; slide no. LHY22099♂; TJNHM • 10 ♀♀; Tongchuan, Yuhuagong; 35.34° N, 108.90° E; 1359 m a.s.l.; 28–30 Jul. 2019; S. Yu leg.; slide no. LHY22104♀; TJNHM • 7 ♂♂; same data as for preceding; slide no. LHY22105♂; TJNHM • 3 ♂♂, 2 ♀♀; Huangling, Duluowei Village; 35.64° N, 108.89° E; 1021 m a.s.l.; 31 Jul. 2019; S. Yu leg.; slide no. LHY22106♂; TJNHM • 3 ♀♀; Fu County, Ziwuling, Huaishu Village; 35.86° N, 108.72° E; 1150 m a.s.l.; 3–5 Aug. 2019; S. Yu leg.; slide nos. LHY22112♀, LHY22118♀; TJNHM • 3 ♂♂; same data as for preceding; slide no. LHY22117♂; TJNHM • 1 ♂; Taibai, Huangbaiyuan; 33.81° N, 107.53° E; 1441 m a.s.l.; 14 Aug. 2020; M.L. Li leg.; slide no. LHY22356; TJNHM. – **Shanxi** • 4 ♂♂, 4 ♀♀; Jincheng, Mt Li; 1520 m a.s.l.; 16–19 Aug. 2006; X. Zhang and H.Y. Bai leg.; slide no. JQ08302♂; TJNHM • 2 ♂♂; Lingchuan County, Shuangdi Village; 773 m a.s.l.; 20 Jul. 2012; W. Guan and X.C. Wang leg.; slide no. LHY21865; TJNHM • 6 ♂♂, 2 ♀♀; Linfen, Dahe Forestry Centre; 35.45° N, 111.92° E; 1202 m a.s.l.; 26 Jul. 2013; S.L. Hao and M.J. Li leg.; slide no. LHY21877♂; TJNHM. – **Tianjin** • 34 ♂♂, 3 ♀♀; Ji County, Mt Baxian; 550 m a.s.l.; 20 Jul. 2001; H.H. Li *et al.* leg.; TJNHM • 1 ♂, 3 ♀♀; Ji County, Mt Jiulong; 200 m a.s.l.; 9 Jun. 2004; H.H. Li *et al.* leg.; TJNHM • 18 ♂♂; Ji County, Mt Baxian, Heishuihe; 600 m a.s.l.; 28 Jun.–25 Aug. 2010; S.R. Liu *et al.* leg.; TJNHM. – **Zhejiang** • 5 ♀♀; Mt. Tianmu, Xianrending; 1500 m a.s.l.; 18 Aug. 1999; H.H. Li *et al.* leg.; slide nos. YHL00055, JQ08300; TJNHM.

Host plant

Celastraceae: *Euonymus* sp. (Menken 1995: 10).

Distribution

China (Gansu, Hebei, Heilongjiang, Henan, Hubei, Jiangsu, Jilin, Liaoning, Ningxia, Qinghai, Shaanxi, Shanxi, Tianjin, Zhejiang), Korea, Russia (Gershenson & Ulenberg 1998: 123; Sohn *et al.* 2010: 2813; Lee & Park 2016: 519).

Yponomeuta eurinellus Zagulajev, 1969
Figs 3G, 8A, 13E

Yponomeuta eurinellus Zagulajev, 1969: 195. TL: Russia (Primorsky Krai, near Vladivostok). TD: ZIN.
Yponomeuta solitariellus Moriuti, 1977: 183. TL: Japan (Honshu, Wakayama, Mt Kozindake). TD: OPU.

Diagnosis (adult; Fig. 3G)

Wingspan 18.5–27.0 mm. *Yponomeuta eurinellus* is diagnosed by the grey forewing suffused with small patches of white scales, in the male genitalia by the ventral plate of the gnathos with thumb-shaped processes (Fig. 8A), and in the female genitalia by the ductus bursae arising from the posterior ¼ of the ductus bursae, and a small, rounded corpus bursae (Fig. 13E). *Yponomeuta eurinellus* is similar to *Y. mayumivorella* (Matsumura, 1931) in the male genitalia, and the differences between them are stated in the diagnosis of the latter species.

Material examined

CHINA – **Gansu** • 4 ♂♂; Yuzhong, Mt Xinglong; 2130 m a.s.l.; 31 Jul. 1993; H.H. Li leg.; slide no. YHL00029♂; TJNHM • 1 ♀; same data as for preceding; slide no. YHL00031♀; TJNHM • 1 ♀; Wen County, Bifenggou; 860 m a.s.l.; 12 Jul. 2005; H.L. Yu leg.; slide no. JQ08334; TJNHM. – **Henan** • 2 ♂♂; Jiyuan; 700 m a.s.l.; 7 Jun. 2000; H.L. Yu leg.; slide no. YHL00326; TJNHM • 5 ♀♀; Song County, Mt Baiyun; 1580 m a.s.l.; 20–24 Jul. 2002; X.P. Wang leg.; slide no. JQ09044; TJNHM • 1 ♂; Baotianman; 33.49° N, 111.93° E; 1279 m a.s.l.; 24–25 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22139♂; TJNHM • 1 ♂; same data as for preceding; slide no. LHY22141♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22142♀; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22149♀; TJNHM. – **Hubei** • 1 ♂; Shennongjia; 1800 m a.s.l.; 8 Jul. 2009; M. Wang and Y. Long leg.; slide no. LHY21981♂; TJNHM. – **Jilin** • 6 ♂♂, 1 ♀; Mt Changbai, Longyan; 42.27° N, 127.87° E; 1067 m a.s.l.; 17 Jul. 2016; M.J. Qi *et al.* leg.; slide no. LHY21900♂; TJNHM • 1 ♀; Changbai, Shisandaogou Forestry Centre; 41.59° N, 127.83° E; 1239 m a.s.l.; 15 Jul. 2023; D. Zhang leg.; slide no. LHY22216; TJNHM • 2 ♂♂, 1 ♀; Changbai, Shisandaogou Forestry Centre, Xigang; 41.45° N, 127.76° E; 856 m a.s.l.; 16 Jul. 2023; D. Zhang leg.; slide no. LHY22221♂; TJNHM • 14 ♂♂; Mt Changbai Nature Reserve, Touxi; 42.28° N, 127.85° E; 1108 m a.s.l.; 18 Jul. 2023; D. Zhang leg.; slide nos LHY22225, LHY22226; TJNHM • 1 ♂; Huangsongpu; 42.23° N, 128.09° E; 1037 m a.s.l.; 20 Jul. 2023; D. Zhang leg.; slide no. LHY22235; TJNHM. – **Ningxia** • 1 ♀; Mt Liupan, Qiuqianjia Forestry Centre; 1700 m a.s.l.; 2 Jul. 2008; S.L. Hao and Z.W. Zhang leg.; slide no. LHY22236; TJNHM • 1 ♂; Mt Liupan, Dongshanpo Forestry Centre; 2050 m a.s.l.; 7 Jul. 2008; S.L. Hao and Z.W. Zhang leg.; slide no. LHY22237; TJNHM. – **Shaanxi** • 1 ♂; Ankang, Mt Hualong, Zhengheya; 2150 m a.s.l.; 27 May 2003; H.L. Yu leg.; slide no. JQ08328; TJNHM • 1 ♂; Qinling, Jiwozi; 1840 m a.s.l.; 2 Jul. 2015; H.L. Yu and K.L. Liu leg.; slide no. LHY22061; TJNHM • 1 ♀; Langao, Hengxi Town; 32.22° N, 108.81° E; 877 m a.s.l.; 11 Aug. 2016; J.X. Zhao and P. Liu leg.; slide no. LHY22071; TJNHM. – **Shanxi** • 3 ♂♂, 1 ♀; Lingchuan County, Xizhashui; 900 m a.s.l.; 12–13 Jul. 2010; H.Y. Bai and L.L. Yang leg.; slide no. LHY21857♂; TJNHM • 3 ♂♂, 1 ♀; Dahe Forestry Centre; 1340 m a.s.l.; 14–15 Jul. 2012; Q. Gao and N. Chen leg.; slide no. LHY21859♂; TJNHM • 6 ♂♂, 1 ♀; Xiachuan, Xixia; 1500 m a.s.l.; 16–19 Jul. 2012; Q. Gao and N. Chen leg.; slide no. LHY21861♂; TJNHM • 7 ♂♂; Qinshui, Xixiakou; 35.42° N, 112.00° E; 1515 m a.s.l.; 17–20 Aug. 2012; Z.W. Zhang and S.L. Hao leg.; slide no. LHY21869♂; TJNHM • 25 ♀♀; same data as for preceding; slide no. LHY21870♀; TJNHM • 19 ♂♂, 14 ♀♀; Jiexiu,

Mt Mian; 36.87° N, 111.99° E; 1370 m a.s.l.; 24–28 Jul. 2013; T.T. Liu and P.X. Cong leg.; slide nos LHY21872♂, LHY21873♂; TJNHM • 2 ♂♂; Qinyuan, Mt Lingkong; 36.61° N, 112.08° E; 1560 m a.s.l.; 2 Aug. 2013; T.T. Liu and P.X. Cong leg.; slide no. LHY21878♂, TJNHM • 2 ♀♀; same data as for preceding; slide no. LHY21879♀; TJNHM • 107 ♂♂; Jiexiu, Mt Mian; 36.87° N, 111.99° E; 1370 m a.s.l.; 14–21 Jul. 2014; T.T. Liu and P.X. Cong leg.; slide nos LHY21880♂, LHY21881♂; TJNHM • 11 ♀♀; same data as for preceding; slide no. LHY21882♀; TJNHM. – **Sichuan** • 7 ♀♀; Baixionggou; 33.00° N, 104.03° E; 2369 m a.s.l.; 20–24 Jul. 2017; M.J. Qi and X.F. Yang leg.; slide nos LHY22003♀, LHY22006♀; TJNHM • 16 ♂♂; same data as for preceding; slide nos LHY22005♂, LHY22007♂; TJNHM. – **Zhejiang** • 1 ♂; Mt Tianmu; 1140 m a.s.l.; 17 Aug. 1999; H.H. Li *et al.* leg.; slide no. YHL00432; TJNHM • 1 ♂, 1 ♀; Mt Tianmu, Sanmuping; 789 m a.s.l.; 11 Aug. 2014; A.H. Yin *et al.* leg.; slide no. LHY21964♂; TJNHM.

Host plants

Celastraceae: *Euonymus macropterus* Rupr., *E. oxyphyllus* Miq. (Gershenson & Ulenberg 1998: 125).

Distribution

China (Gansu, Henan, Hubei, Jilin, Ningxia, Shaanxi, Shanxi, Sichuan, Zhejiang), Japan, Korea, Russia (Zagulajev 1969: 195; Moriuti 1977: 184; Lewis & Sohn 2015: 125).

Yponomeuta evonymella (Linnaeus, 1758)
Figs 3H, 8B, 14A

Phalaena Tinea evonymella Linnaeus, 1758: 534. TL: Europe. TD: LSL.
Hyponomeuta padi Zeller, 1844: 225 (unnecessary replacement name for *Phalaena Tinea evonymella*).

Tinea evonymella – Fabricius 1775: 656.
Yponomeuta evonymella – Latreille 1802: 417.
Hyponomeuta evonymellus – Heinemann 1870: 110.

Diagnosis (adult; Fig. 3H)

Wingspan 19.0–27.0 mm. *Yponomeuta evonymella* is diagnosed from other congeneric species by the white forewing with a series of subradial and supramedian dots; in the male genitalia by the ventral plate of the gnathos with bar-shaped processes, and the crescent-shaped valva (Fig. 8B); and in the female genitalia by the presence of a paired, dentate, sclerotised plate between the papillae anales (Fig. 14A). It is similar to *Y. refrigerata* (Meyrick, 1931) superficially, and the differences between them are stated in the diagnosis of the latter species.

Material examined

CHINA – **Anhui** • 1 ♂; Huoshan County, Dahuaping Town, Qingfeng Village; 31.13° N, 116.19° E; 794 m a.s.l.; 29 Jul. 2022; J.X. Wang *et al.* leg.; slide no. LHY22166; TJNHM. – **Beijing** • 2 ♀♀; Xiaolongmen; 1080 m a.s.l.; 31 Jul. 2009; A.H. Zhang *et al.* leg.; TJNHM • 4 ♂♂; Mt Song, Dakezhuang Village; 1–19 Aug. 2010; A.H. Zhang *et al.* leg.; TJNHM. – **Chongqing** • 1 ♀; Qianjiang, Wuli Town; 870 m a.s.l.; 23 Jul. 2012; Y.H. Sun and A.H. Yin leg.; slide no. LHY22010♀; TJNHM • 1 ♂; same data as for preceding; slide no. LHY22011♂; TJNHM. – **Gansu** • 3 ♂♂; Yuzhong, Mt Xinglong; 2130 m a.s.l.; 30 Jul. 1993; H.H. Li leg.; slide no. YHL00027; TJNHM. – **Guizhou** • 7 ♂♂; Mt Leigong, Xiannvtang; 26.37° N, 108.20° E; 1553 m a.s.l.; 30 Jul. 2018; M.L. Zheng *et al.* leg.; slide no. LHY22019♂; TJNHM • 5 ♀♀; same data as for preceding; slide no. LHY22020♀; TJNHM • 17 ♂♂; Mt Leigong, Xiannvtang; 26.37° N, 108.19° E; 1535 m a.s.l.; 8–27 Jul. 2019; M.R. Xing *et al.* leg.; slide nos LHY22027♂, LHY22029♂; TJNHM • 10 ♀♀; same data as for preceding; slide no. LHY22030♀;

TJNHM. – **Hebei** • 7 ♂♂, 12 ♀♀; Xinglong County, Mt Wuling; 1800 m a.s.l.; 1 Aug. 2000; Y.L. Du and Z.D. Li leg.; slide no. YHL00373♂; TJNHM. – **Heilongjiang** • 18 ♂♂, 8 ♀♀; Yichun; 18 Jul. 1980; L.Y. Zheng leg.; slide no. YHL00142♂; TJNHM • 11 ♂♂; Daxinganling, Tahe; 52.30° N, 124.60° E; 373 m a.s.l.; 26–28 Jul. 2016; M.J. Qi *et al.* leg.; slide nos LHY21909♂, LHY21911♂, LHY21914♂, LHY22293♂, LHY22294♂, LHY22295♂, LHY22296♂; TJNHM • 29 ♀♀; same data as for preceding; slide nos LHY21910♀, LHY21912♀; TJNHM. – **Henan** • 1 ♂; Song County, Mt Baiyun; 1580 m a.s.l.; 20 Jul. 2002; X.P. Wang leg.; TJNHM. – **Hubei** • 1 ♂; Hefeng; 1260 m a.s.l.; 16 Jul. 1999; H.H. Li *et al.* leg.; slide no. YHL00097; TJNHM • 1 ♂; Yingshan County, Mt Wu; 6 Jul. 2008; Y.L. Xiao leg.; slide no. LHY21979; TJNHM • 3 ♂♂, 2♀♀; Xianning, Mt Jiugong; 28 Jul. 2011; Y.L. Xiao leg.; slide no. LHY21984♂; TJNHM • 1 ♀; Yingshan County, Mt Wu; 31.10° N, 115.77° E; 1549 m a.s.l.; 2 Jul. 2022; J.X. Wang *et al.* leg.; slide no. LHY22181; TJNHM. – **Jilin** • 10 ♂♂; Erdaobaihe; 760 m a.s.l.; 1–3 Aug. 2004; A.H. Zhang leg.; slide no. JQ10020♂; TJNHM • 22 ♀♀; same data as for preceding; slide no. JQ10021♀; TJNHM • 1 ♂; Mt Changbai; 960 m a.s.l.; 3 Aug. 2004; A.H. Zhang leg.; slide no. LHY21895; TJNHM • 2 ♀♀; Mt Changbai; 8 Jul. 2012; B.Z. Ren leg.; slide no. LHY21896♀; TJNHM • 1 ♂; same data as for preceding; slide no. LHY21897♂; TJNHM • 22 ♀♀; Mt Changbai, Longyan; 42.27° N, 127.87° E; 1067 m a.s.l.; 16–17 Jul. 2016; M.J. Qi *et al.* leg.; slide nos LHY21899♀, LHY21902♀; TJNHM; 13 ♂♂; same data as for preceding; slide no. LHY21901♂; TJNHM • 21 ♂♂, 20 ♀♀; Mt Changbai Natural Reserve; 42.13° N, 128.12° E; 1273.5 m a.s.l.; 18–20 Jul. 2016; M.J. Qi *et al.* leg.; slide nos LHY21903♂, LHY21905♂, LHY22291♂; TJNHM • 5 ♀♀; Yanbian, Hunchun, Banshi Forestry Centre; 42.74° N, 130.48° E; 72 m a.s.l.; 29 Jun. 2023; D. Zhang leg.; slide nos LHY22184♀, LHY22186♀; TJNHM • 2 ♂♂; same data as for preceding; slide nos LHY22185♂, LHY22187♂; TJNHM • 4 ♀♀; Yanbian, Hunchun, Yangpao Forestry Centre; 42.74° N, 130.48° E; 162 m a.s.l.; 30 Jun. 2023; D. Zhang leg.; slide no. LHY22188♀; TJNHM • 1 ♂; same data as for preceding; slide no. LHY22189♂; TJNHM • 5 ♂♂; Wangqing, Daxinggou Town; 43.52° N, 129.80° E; 412 m a.s.l.; 2 Jul. 2023; D. Zhang leg.; slide nos LHY22191♂, LHY22193♂, LHY22195♂, LHY22297♂; TJNHM • 3 ♀♀; same data as for preceding; slide nos LHY22192♀, LHY22194♀; TJNHM • 5 ♂♂; Fusong, Lushuihe Town, Xilinhe Forestry Centre; 42.58° N, 127.87° E; 795 m a.s.l.; 4–12 Jul. 2023; D. Zhang leg.; slide nos LHY22196♂, LHY22200♂, LHY22201♂, LHY22203♂, LHY22206♂; TJNHM • 3 ♀♀; same data as for preceding; slide nos LHY22202♀, LHY22204♀; TJNHM • 24 ♀♀; Changbai, Shisandaogou; 41.43° N, 127.79° E; 556 m a.s.l.; 13–15 Jul. 2023; D. Zhang leg.; slide nos LHY22208♀, LHY22212♀, LHY22214♀, LHY22218♀, LHY22228♀; TJNHM • 12 ♂♂; same data as for preceding; slide nos LHY22209♂, LHY22211♂, LHY22213♂, LHY22217♂, LHY22222♂, LHY22229♂, LHY22233♂, LHY22299♂; TJNHM. – **Liaoning** • 6 ♂♂, 6 ♀♀; Anshan, Mt Qian; 5–9 Jul. 2010; J.Y. Liu and Y.P. Cai leg.; slide nos LHY21890♂, LHY22287♂; TJNHM. – **Ningxia** • 2 ♀♀; Mt Liupan; 2100 m a.s.l.; 2 Jun. 2008; S.L. Hao and Z.W. Zhang leg.; TJNHM. – **Shaanxi** • 2 ♀♀; Zhouzhi; 33.28° N, 107.26° E; 1379 m a.s.l.; 21 Jul. 2018; J.L. Zhuang and T. Liu leg.; slide no. LHY22074♀; TJNHM • 3 ♂♂; same data as for preceding; slide nos LHY22076♂, LHY22077♂, LHY22262♂, LHY22355♂; TJNHM • 3 ♂♂; Fu County, Ziwuling Natural Reserve, Huaishu Village; 35.86° N, 108.72° E; 1150 m a.s.l.; 3–5 Aug. 2019; S. Yu leg.; slide no. LHY22110♂; TJNHM • 2 ♀♀; same data as for preceding; slide no. LHY22116♀; TJNHM. – **Shanxi** • 22 ♂♂, 21 ♀♀; Mt Li; 1520 m a.s.l.; 16–18 Aug. 2006; X. Zhang and H.Y. Bai leg.; slide no. JQ10035♂; TJNHM • 52 ♂♂; Xiachuan, Xixia; 1500 m a.s.l.; 12–19 Jul. 2012; Q. Gao and N. Chen leg.; slide nos LHY21860♂, LHY21863♂, LHY21864♂, LHY22283♂; TJNHM • 7 ♀♀; same data as for preceding; slide no. LHY21862♀; TJNHM • 2 ♀♀; Qinshui County, Mt Li, Xiachuan Village; 10–11 Aug. 2012; Y.L. Li and Q.W. Hou leg.; slide nos LHY21866♀; TJNHM • 4 ♂♂; same data as for preceding; slide no. LHY21867♂; TJNHM • 3 ♂♂; Mt Li, Xiachuan; 1587 m a.s.l.; 23–26 Jul. 2012; G.Q. He leg.; slide nos LHY22163♂, LHY22164♂; TJNHM • 2 ♀♀; same data as for preceding; slide nos LHY22178♀, LHY22179♀; TJNHM • 1 ♂, 2 ♀♀; Mt Li Natural Reserve, Dongxiakou; 35.40° N, 112.03° E; 1515 m a.s.l.; 17 Aug. 2012; Z.W. Zhang and S.L. Hao leg.; slide no. LHY21871♂; TJNHM • 1 ♂, 1 ♀; Jiexiu, Mt Mian; 36.87° N, 111.99° E; 1370 m a.s.l.; 27 Jul. 2013; T.T. Liu and P.X. Cong leg.; slide no. LHY21875♂;

TJNHM. – **Sichuan** • 1 ♂, 4 ♀♀; Wolong; 1900 m a.s.l.; 25 Jul. 2004; H.L. Yu and Y.D. Ren leg.; slide no. JQ10014♂; TJNHM • 2 ♀♀; Mt Emei, Baoguo Temple; 860 m a.s.l.; 30 Jul. 2011; J.B. Cao leg.; slide no. LHY22182; TJNHM. – **Tianjin** • 28 ♂♂, 21 ♀♀; Mt Baxian, Heishuihe; 600 m a.s.l.; 2 Aug. 2010; Y.H. Mou and S.R. Liu leg.; TJNHM • 15 ♂♂, 16 ♀♀; Mt Qipan, Xiaoshang Village; 16–17 Jul. 2001; Y.L. Du and S.L. Hao leg.; slide no. JQ09048♂; TJNHM. – **Xinjiang** • 105 ♂♂; Buerjin, Hemu; 1114 m a.s.l.; 23–24 Jul. 2007; X.P. Wang *et al.* leg.; slide nos JQ09036♂, JQ09050♂, JQ10024♂, WXC13152♂, LHY22159♂; TJNHM • 120 ♀♀; same data as for preceding; slide nos JQ09037♀, WXC13153♀; TJNHM • 18 ♂♂, 7 ♀♀; Gongliu; 1480 m a.s.l.; 4 Aug. 2007; X.P. Wang *et al.* leg.; slide no. JQ10036♂; TJNHM. – **Xizang** • 3 ♂♂, 2 ♀♀; Bomi County; 2800 m a.s.l.; 19 Aug. 2003; X.P. Wang and H.J. Xue leg.; slide no. JQ10033♂; TJNHM • 9 ♂♂; Lulang; 26 Jul. 2013; H.L. Han leg.; slide nos LHY21040♂, LHY21041♂, LHY21043♂, LHY21044♂; TJNHM • 16 ♀♀; same data as for preceding; slide nos LHY21042♀, LHY21045♀; TJNHM • 3 ♀♀; Bomi County, Sangdeng Village; 29.85° N, 95.76° E; 2695 m a.s.l.; 21 Aug. 2017; M.J. Qi and X.F. Yang leg.; slide no. LHY22046♀; TJNHM • 3 ♂♂; same data as for preceding; slide nos LHY22047♂, LHY22048♂; TJNHM • 1 ♂; Bomi County, Zhamu Village; 29.87° N, 95.77° E; 2703 m a.s.l.; 22 Aug. 2017; M.J. Qi and X.F. Yang leg.; slide no. LHY22049♂; TJNHM • 2 ♀♀; same data as for preceding; slide no. LHY22050♀; TJNHM • 3 ♂♂; Bomi County, Sangdeng Village; 29.85° N, 95.76° E; 2695 m a.s.l.; 10–11 Aug. 2018; M.J. Qi leg.; slide no. LHY22051♂; TJNHM • 4 ♀♀; same data as for preceding; LHY22052♀; TJNHM • 1 ♂; Lulang Town; 29.77° N, 94.74° E; 3308 m a.s.l.; 20 Aug. 2018; M.J. Qi leg.; slide no. LHY22053; TJNHM • 3 ♀♀; Chayu County; 28.66° N, 97.48° E; 2373 m a.s.l.; 28 Jun. 2019; M.J. Qi and J.Q. Deng leg.; slide nos LHY22054♀, LHY22057♀; TJNHM •1 ♂; same data as for preceding; slide no. LHY22055♂; TJNHM. – **Zhejiang** • 3 ♀♀; Mt Tianmu, Xianrending; 1500 m a.s.l.; 18 Aug. 1999; H.H. Li *et al.* leg.; slide no. YHL00054; TJNHM • 2 ♂♂, 2 ♀♀; Lin'an, Qingliangfeng; 900 m a.s.l.; 8 Aug. 2005; Y.L. Xiao leg.; slide no. JQ10039♂; TJNHM • 42 ♂♂; Mt Tianmu, Xianrending; 1500 m a.s.l.; 25–26 Jul. 2011; L.L. Yang and N. Chen leg.; slide nos LHY21919♂, LHY21921♂; TJNHM • 74 ♀♀; same data as for preceding; slide no. LHY21920♀; TJNHM • 10 ♀♀; Mt Tianmu, Xianrending; 30.35° N, 119.43° E; 1503 m a.s.l.; 28–29 Jun. 2013; A.H. Yin and X.C. Wang leg.; slide nos LHY21928♀, LHY21932♀, LHY21933♀; TJNHM • 25 ♂♂; same data as for preceding; slide nos LHY21929♂, LHY21930♂, LHY21931♂; TJNHM • 73 ♂♂; Mt Tianmu, Qianmutian; 30.40° N, 119.44° E; 1320 m a.s.l.; 1 Jul. 2013; A.H. Yin and X.C. Wang leg.; slide nos LHY21935♂, LHY21937♂; TJNHM • 87 ♀♀ ; same data as for preceding; slide no. LHY21936♀; TJNHM • 19 ♂♂; Mt Tianmu, Laoan; 30.33° N, 119.40° E; 555 m a.s.l.; 6 Jul. 2014; A.H. Yin *et al.* leg.; slide nos LHY21940♂, LHY21943♂, LHY21945♂; TJNHM • 14 ♀♀; same data as for preceding; slide no. LHY21944♀; TJNHM • 7 ♀♀; Mt Tianmu, Qianjiangyuan; 30.39° N, 119.49° E; 866 m a.s.l.; 10 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21948♀; TJNHM • 7 ♂♂; same data as for preceding; slide no. LHY21949♂; TJNHM • 44 ♂♂; Mt Tianmu, Sanmuping; 30.37° N, 119.43° E; 789 m a.s.l.; 14 Jul. 2014; A.H. Yin *et al.* leg.; slide nos LHY21951♂, LHY21953♂; TJNHM • 51 ♀♀; same data as for preceding; slide nos LHY21952♀, LHY21954♀; TJNHM • 11 ♂♂, 6 ♀♀; Mt Longxu, Pinggang; 30.42° N, 119.55° E; 754 m a.s.l.; 20 Jul. 2014; A.H. Yin *et al.* leg.; slide nos LHY21955♂, LHY21956♂, LHY21958♂; TJNHM • 4 ♀♀; Qingliangfeng, Qianqingtang; 30.30° N, 119.12° E; 1059 m a.s.l.; 28 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21960♀; TJNHM • 4 ♂♂; same data as for preceding; slide no. LHY21961♂; TJNHM • 2 ♀♀; Mt Tianmu, Sanmuping; 30.37° N, 119.43° E; 789 m a.s.l.; 11 Aug. 2014; A.H. Yin *et al.* leg.; slide no. LHY21962♀; TJNHM • 3 ♂♂; same data as for preceding; slide no. LHY21963♂; TJNHM • 6 ♀♀; Mt Tianmu, Qianjiangyuan; 30.39° N, 119.49° E; 866 m a.s.l.; 12–15 Aug. 2014; A.H. Yin *et al.* leg.; slide no. LHY21966♀; TJNHM • 7 ♂♂; same data as for preceding; slide nos LHY21967♂, LHY21970♂; TJNHM • 1 ♂, 1 ♀; Jingning; 27.73° N, 119.64° E; 1102 m a.s.l.; 9 Jul. 2017; Z.G. Zhang *et al.* leg.; slide no. LHY21978♂; TJNHM.

Host plants

Rosaceae Juss.: *Prunus cerasus* L., *P. domestica* L., *P. padus* L., *P. ssiori* F. Schmidt, *Sorbus aucuparia* L. (Lewis & Sohn 2015: 125).

Distribution

Widely distributed in China (Anhui, Beijing, Chongqing, Gansu, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Inner Mongolia, Jiangsu, Jilin, Liaoning, Ningxia, Shaanxi, Shanxi, Sichuan, Tianjin, Xinjiang, Xizang, Zhejiang), Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, India, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, UK, [former]Yugoslavia (Liu 1992: 675; Lewis & Sohn 2015: 125).

Yponomeuta furvimaculata Li sp. nov.
urn:lsid:zoobank.org:act:9E4DABC9-F739-4F18-95BB-5403A63EBECD
Figs 4A, 8C

Diagnosis

The new species is similar to *Y. griseatus* Moriuti, 1977 in the forewing, sharing a large black plical stigma at basal 2/5, and the fringe of the forewing being dark brown along the upper half of the termen. The new species can be distinguished from *Y. griseatus* in the male genitalia by the uncus concave posteromedially, the ventral plate of the gnathos being trapezoidal, and the valva narrowed from the basal ⅓ to the apex. In *Y. griseatus*, the uncus is nearly straight on the posterior margin, the ventral plate of the gnathos has paired, slender processes, and the valva is parallel-sided from basal ⅓ to just before the apex (Fig. 8D).

Etymology

The specific epithet is derived from the Latin words '*furvus*' (black) and '*maculatus*' (spot), referring to the black spot on the fold.

Type material

Holotype

CHINA – **Guangxi** • ♂; Jinxiu County, Mt Dayao Natural Reserve, Yinshan Park; 24.15° N, 110.21° E; 1364 m a.s.l.; 21 Jul. 2015; M.J. Qi and S.N. Zhao leg.; slide no. LHY21992; TJNHM.

Paratypes

CHINA – **Guangxi** • 4 ♂♂; same data as holotype; 19–21 Jul. 2015; slide nos LHY22250, LHY22359; TJNHM • 2 ♂♂; Jinxiu County, Mt Dayao Natural Reserve, Hekou; 24.14° N, 110.08° E; 578 m a.s.l.; 24–25 Jul. 2022; H. Sun *et al.* leg.; slide nos LHY21786 to LHY21787; TJNHM. – **Guizhou** • 2 ♂♂; Libo County, Limingguan, Shuizu Town; 740 m a.s.l.; 20 Jul. 2015; M.Q. Yang and G.E. Lee leg.; slide no. LHY22017; TJNHM.

Description

Adult male (Fig. 4A)

Measurements and coloration. Wingspan 15.5–17.5 mm. Head grey. Antenna grey. Labial palpus dark brown on outer surface, pale grey on inner surface. Thorax grey, with 5 black dots, one pair at anterior ⅓, other pair at posterior ¼, one at posterior end; tegula grey, mottled with dark brown basally, with black dot at posterior ⅓. Forewing grey, costal margin dark brown along basal 1/5; with approximately 53–60 black dots, viz., 5–6 black subcostal dots situated from base to middle, 5–7 radial dots situated from basal 1/6 to distal ⅓ below costal margin, 5–6 subradial dots situated from middle to distal 1/5 below costal margin, 6–8 supramedian dots situated from basal ⅓ to termen, 10–11 submedian dots situated from base to tornus, 9–10 subdorsal dots situated from near base to before tornus, 3 dots near apex, line of 3–4 black dots situated between supramedian and submedian area from base to 2/5, 5–6 dots situated near

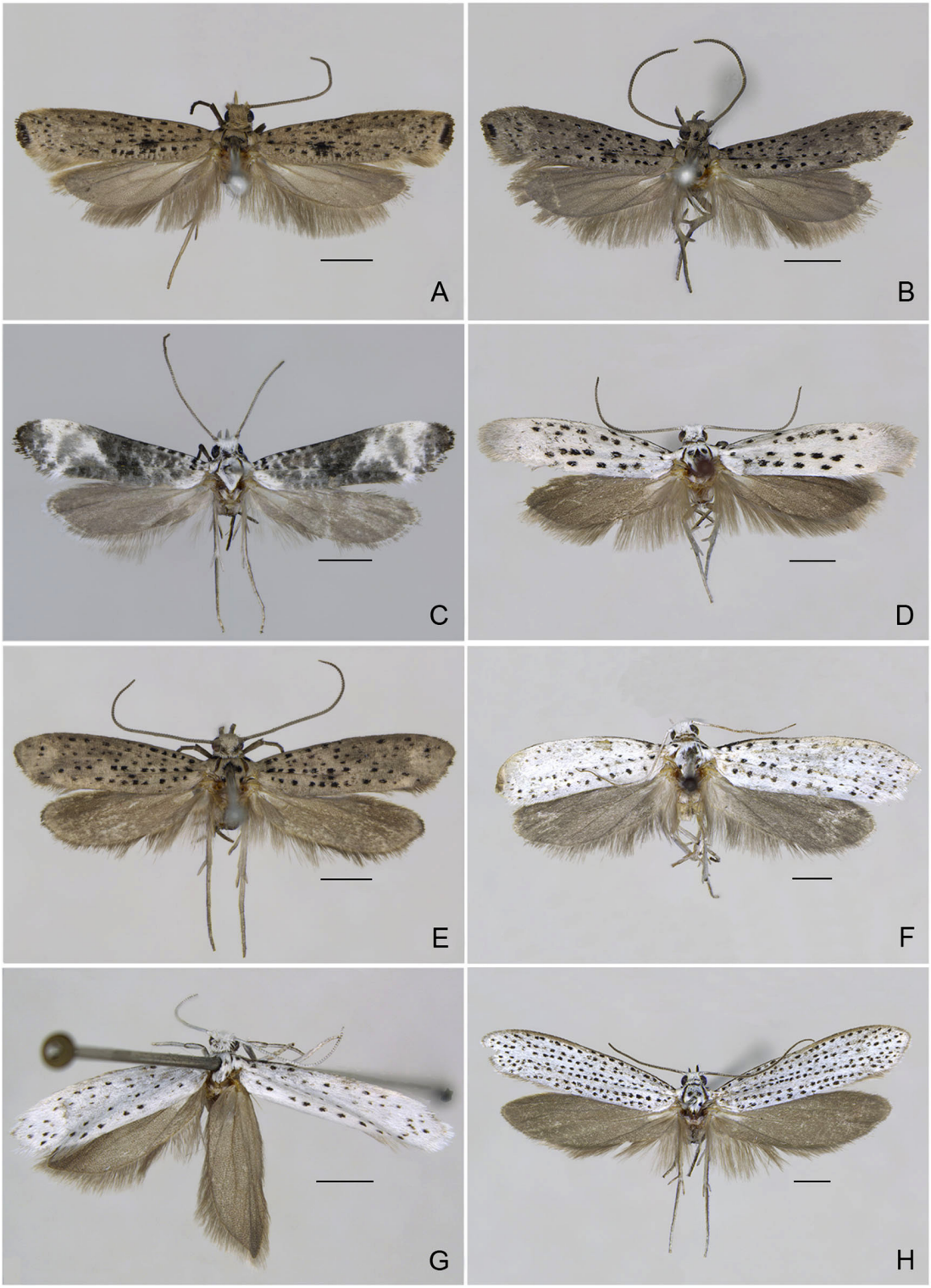

Fig. 4. Adults of *Yponomeuta* spp. **A**. *Y. furvimaculata* Li sp. nov., holotype, ♂ (slide no. LHY21992). **B**. *Y. griseatus* Moriuti, 1977, ♂ (slide no. LHY21976). **C**. *Y. heterochroma* Li sp. nov., holotype, ♂ (slide no. LHY22341). **D**. *Y. kanaiella* (Matsumura, 1931), ♂ (slide no. LHY21847). **E**. *Y. mayumivorella* (Matsumura, 1931), ♂ (slide no. LHY21934). **F**. *Y. menkeni* Gershenson & Ulenberg, 1998, ♂ (slide no. LHY22075). **G**. *Y. meridionalis* Gershenson, 1972, ♂ (slide no. LHY22300). **H**. *Y. minipunctatus* Gershenson & Ulenberg, 1998, ♂ (slide no. LHY22058). All males. Scale bars = 2.0 mm.

termen between supramedian and submedian area; large black plical stigma present at basal 2/5; fringe ochreous grey along costal margin, dark brown along upper half of termen near base, forming distinct bar, grey along lower half of termen and dorsum. Hindwing grey, darkened distally; fringe grey except ochreous grey along costal margin. Legs pale grey; tibia and tarsus of foreleg dark grey; midleg dark grey on outer surface, tibia with black dot medially; spurs of hindleg mottled with dark brown scales.

Abdomen. Grey, paler ventrally; tuft pale grey.

Male genitalia (Fig. 8C). Uncus shallowly concave at middle on posterior margin. Socius slender, parallel-sided basally, slightly narrowed from distal ¼ to apex, with two apical thorns. Subscaphium slender, parallel-sided. Ventral plate of gnathos trapezoidal, with spinules in posterior half, with broad, weakly sclerotised gnathal arms. Valva widened from base to basal ⅓, narrowed from basal ⅓ to narrowly rounded apex; costa slightly convex medially; transtilla long, bar-shaped; sclerotised belt extending from base of valva to below tip of costa; sacculus narrow, straight, weakly sclerotised, with notch between its apex and ventral margin of valva. Saccus as long as uncus, about ⅔ as long as sacculus, bulbed in anterior ¼. Aedeagus 4.5 × as long as saccus; cornuti consisting of stout basal spine about ⅓ as long as aedeagus and with spinules in its basal 2/5, second stout medial spine and two slender distal spines about 2/5 as long as aedeagus.

Female

Unknown.

Distribution

China (Guangxi, Guizhou).

Yponomeuta gershensoni Sinev, 2008

Yponomeuta zagulajevi Gershenson, 1977: 150 (preoccupied). TL: Russia (Primorsky Krai, Okeanskaya). TD: ZIN.
Yponomeuta gershensoni Sinev, 2008: 324 (replacement name for *zagulajevi*).

Distribution

China (Beijing), Russia.

Remark

Gershenson & Ulenberg (1998) reported the occurrence of this species in China. Currently, we do not have this species available in our collection.

Yponomeuta griseatus Moriuti, 1977
Figs 4B, 8D, 14B

Yponomeuta griseatus Moriuti, 1977: 196. TL: Ryukyu Archipelago, Amamioshima Island. TD: OPU.

Diagnosis (adult; Fig. 4B)

Wingspan 14.0–22.0 mm. *Yponomeuta griseatus* can be distinguished from other congeneric species by the forewing with a large conspicuous black plical stigma, and the fringe running along the upper half of the termen and forming a black median bar (Fig. 4B); in the male genitalia *Y. griseatus* can be diagnosed by the saccus that is slightly dilated anteriorly (Fig. 8D); and in the female genitalia by having a pair of rounded lamellae postvaginalis (Fig. 14B). *Yponomeuta griseatus* is similar to *Y. furvimaculata* Li

sp. nov. superficially and externally, but can be easily distinguished by the male genitalia. The differences between the two species *Y. griseatus* and *Y. furvimaculata* are stated in the diagnosis of the new species.

Yponomeuta griseatus is also similar to *Y. vigintipunctata* (Retzius, 1783) and *Y. yanagawana* (Matsumura, 1931) in the male genitalia. *Yponomeuta griseatus* can be distinguished by the series of the supramedian dots on the forewing that are absent in *Y. vigintipunctata*, which are present in *Y. griseatus* and *Y. yanagawana* (Figs 4B, 6G–H). In the male genitalia, the saccus of *Y. yanagawana* is parallel-sided, while it is slightly dilated anteriorly in *Y. griseatus* and *Y. vigintipunctata*; the aedeagus in *Y. vigintipunctata* is about 1.5 × as long as the valva, while it is about 2 × as long as the valva in *Y. griseatus* and *Y. yanagawana* (Figs 8D, 12B–C). *Yponomeuta griseatus* can be further distinguished from *Y. vigintipunctata* in the female genitalia by the antrum being distinctly narrowed anteriorly, while it is almost uniformly wide in *Y. vigintipunctata* (Figs 14B, 16E).

Material examined

CHINA – **Anhui** • 3 ♂; Huangshan, Tanqiao Town; 6 Aug. 2004; J.S. Xu and J.L. Zhang leg.; slide no. JQ06068; TJNHM. – **Beijing** • 1 ♂; Beijing University Of Agriculture; 17 Jun. 2009; X.L. Tian and P. Liu leg.; slide no. LHY21831; TJNHM. – **Guangxi** • 1 ♂; Huaping; 950 m a.s.l.; 7 Aug. 2006; W.C. Li leg.; TJNHM. – **Guizhou** • 5 ♂♂; Suiyang County, Kuankuoshui; 1500 m a.s.l.; 11 Aug. 2010; L.L. Yang leg.; slide nos LHY22014♂, LHY22016♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22015♀; TJNHM • 1 ♂; Suiyang County, Maoya Town; 28.13° N, 107.16° E; 723 m a.s.l.; 4 Jul. 2019; M.R. Xing *et al.* leg.; slide no. LHY22025♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22026♀; TJNHM. – **Henan** • 2 ♂♂; Shiziping; 1200 m a.s.l.; 19 Jul. 2001; D.D. Zhang leg.; slide no. JQ08313; TJNHM • 8 ♂♂, 1 ♀; Dengfeng, Mt Song, Shaolin Temple; 700 m a.s.l.; 15–16 Jul. 2002; X.P. Wang leg.; slide no. JQ10045♂; TJNHM. – **Hubei** • 3 ♂♂; Yingshan County, Mt Wu; 31.10° N, 115.77° E; 1549 m a.s.l.; 7 May 2022; J.X. Wang *et al.* leg.; slide nos LHY22170, LHY22174; TJNHM. – **Hunan** • 1 ♀; Xinhua County, Weishan Town, Shuikou Village; 4 Aug. 2004; Y.L. Xiao leg.; slide no. JQ06069; TJNHM. – **Jiangxi** • 1 ♂; Dexing County, Mt Sanqing; 1560 m a.s.l.; 13 Aug. 1985; G.P. Shen leg.; slide no. YHL00431; TJNHM. – **Shaanxi** • 25 ♂♂; Yangling; 450 m a.s.l.; 24 Apr. 1993; H.H. Li and M.T. Liu leg.; slide nos YHL00012♂, YHL00021♂, YHL00034♂, YHL00041♂, YHL00047♂, YHL00048♂, YHL00049♂, YHL00115♂, YHL00441♂; TJNHM • 9 ♀♀; same data as for preceding; slide nos YHL00013♀, YHL00022♀, YHL00035♀, YHL00046♀; TJNHM. – **Sichuan** • 1 ♂, 2 ♀♀; Baoxing, Fengtongzhai; 1600 m a.s.l.; 2 Aug. 2004; Y.D. Ren leg.; slide no. JQ10047♂; TJNHM. – **Tianjin** • 1 ♂; Ji County, Mt Jiulong; 150 m a.s.l.; 5–7 Apr. 2001; H.H. Li *et al.* leg.; TJNHM • 1 ♂; Ji County, Mt Baxian; 560 m a.s.l.; 14 Jul. 2005; H.H. Li *et al.* leg.; TJNHM • 1 ♂; Ji County, Mt Baxian; 550 m a.s.l.; 14 Jul. 2009; J. Zhang *et al.* leg.; TJNHM. – **Zhejiang** • 3 ♂♂; Mt Tianmu; 350 m a.s.l.; 15–20 Aug. 1999; H.H. Li *et al.* leg.; slide nos YHL00056♂, YHL00057♂, YHL00093♂; TJNHM • 3 ♀♀; same data as for preceding; slide no. YHL00059♀; TJNHM • 3 ♂♂; Lin'an, Shunxi; 420 m a.s.l.; 11–12 Aug. 2007; Q. Jin leg.; slide no. JQ08308♂; TJNHM • 1 ♀, same data as for preceding; slide no. JQ10056♀; TJNHM • 1 ♂; Mt Tianmu, Zhonglieci; 400 m a.s.l.; 1 Aug. 2011; L.L. Yang and N. Chen leg.; slide no. LHY21924; TJNHM • 1 ♂; Mt Tianmu, Laoan; 30.33° N, 119.40° E; 555 m a.s.l.; 3 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21946; TJNHM • 1 ♂; Mt Longxu, Pinggang; 30.42° N, 119.55° E; 754 m a.s.l.; 20 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21957; TJNHM • 1 ♂; Jiufu Village; 30.09° N, 118.93° E; 520 m a.s.l.; 25 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21959; TJNHM • 1 ♀; Mt Tianmu, Sanmuping; 30.37° N, 119.43° E; 789 m a.s.l.; 11 Aug. 2014; A.H. Yin *et al.* leg.; slide no. LHY22244; TJNHM • 2 ♂♂; Mt Longxu, Pinggang; 30.42° N, 119.55° E; 754 m a.s.l.; 23–25 Aug. 2014; A.H. Yin *et al.* leg.; slide no. LHY21969; TJNHM • 1 ♂; Jinhua, Pan'an County, Anwen Town, Huaxi Village; 28.99° N, 120.50° E; 542 m a.s.l.; 28 Jul. 2015; A.H. Yin *et al.* leg.; slide no. LHY21971; TJNHM • 1 ♂; Zhoushan, Taohua Island; 29.08° N, 122.27° E; 63 m a.s.l.; 4 Aug. 2016; Q.Y. Wang *et al.* leg.; slide no. LHY21972; TJNHM • 2 ♂♂; Zhoushan, Daishan Island; 30.23° N, 122.20° E; 21 m a.s.l.; 5 Aug. 2016; Q.Y. Wang *et al.* leg.; slide no. LHY22239; TJNHM • 2 ♂♂;

Zhoushan, Mt Changgang National Forest Park; 30.01° N, 122.10° E; 64 m a.s.l.; 6 Aug. 2016; Q.Y. Wang *et al.* leg.; slide no. LHY21973; TJNHM • 2 ♂♂; Zhoushan, Opium War Ruins Park; 30.00° N, 122.08° E; 40 m a.s.l.; 31 May 2017; S.N. Qian and G.E. Lee leg.; slide no. LHY21976; TJNHM • 8 ♂♂; Zhoushan, Zhushan Park; 30.01° N, 122.08° E; 109 m a.s.l.; 28 Jun. 2017; Z.G. Zhang *et al.* leg.; slide no. LHY21977; TJNHM.

Host plant

Celastraceae: *Euonymus japonicus* Thumb. (Liu & Huang 1996: 3).

Distribution

China (Anhui, Beijing, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Shandong, Shanghai, Sichuan, Taiwan, Tianjin, Zhejiang), Korea, Ryukyu Islands (Lewis & Sohn 2015: 128).

Yponomeuta heterochroma Li sp. nov.
urn:lsid:zoobank.org:act:903B8B58-2FC8-4E3C-BB16-84C4AF3CE5EA
Figs 4C, 8E

Diagnosis

The new species can be distinguished from its congeners by the yellowish-white forewing suffused with dark grey scales, and without the series of lined dots as they are present in the other species. The new species is similar to *Y. quinquepunctata* Li sp. nov. in male genitalia, and it can be distinguished from the latter by the shape of the ventral plate of the gnathos, which possesses paired thumb-shaped processes. In *Y. quinquepunctata*, the trapezoidal ventral plate of the gnathos lacks the paired processes (Fig. 10E).

Etymology

The specific epithet is derived from the Greek words 'hetero-' ('different') and '-chromus' ('color'), referring to the forewing pattern of the new species, which is different from its congeners.

Type material

Holotype

CHINA – **Sichuan** • ♂; Leshan, Mt E'mei; 29.56° N, 103.40° E; 847 m a.s.l.; 22 Jul. 2021; S. Yu *et al.* leg.; slide no. LHY22341; TJNHM.

Description

Adult male (Fig. 4C)

Measurements and coloration. Wingspan 17.0 mm. Head white. Antenna with scape dark brown dorsally, white ventrally; flagellum white, ringed with brown dorsally. Labial palpus white, mottled with dark brown on outer surface. Thorax and tegula yellowish white, tegula mottled with dark grey basally. Forewing white, tinged with pale yellow; costal margin with 6 dark brown dots along basal ⅓, small dark brown dot below first and second costal dots above midline fold respectively; basal ⅓ densely covered with ill-defined pale grey spots; inverted subtrapezoidal dark grey blotch from between basal ⅓ and before ⅔ of costal margin narrowed and crossing fold to above dorsum; cloud-shaped pale grey speckle at distal ¼ from below costal margin to above tornus; distal patch pale grey, placed between veins R_1 and CuA_2; dorsum with ill-defined grey to dark grey dots from near base to end of fold; fringe dark brown around apex, dark brown mottled with white along termen, greyish white around tornus. Hindwing grey; fringe grey, white in distal half around apex and along termen. Legs white; foreleg with coxa and femur black ventrally, tibia and tarsus dark brown; midleg with femur black terminally, tibia

with three black stripes on outer surface, tarsus dark brown; hindleg with femur dark brown basally, tibia and tarsus mottled with greyish brown on outer surface.

Male genitalia (Fig. 8E). Uncus subquadrate, obtuse on posterior margin. Socius elongate, narrowed to pointed apex, with two apical thorns. Subscaphium parallel-sided. Ventral plate of gnathos with paired, thumb-shaped processes directed outward, widely apart. Valva widened from base to basal ⅔, thereafter narrowed to obtuse apex, slightly curved inward dorsoapically; costa slightly convex medially; transtilla broad, narrowed to obtuse tip; sclerotised belt narrowed from base of valva to beneath basal ⅓ of costa, then parallel-sided to beneath distal ⅕ of costal margin; sacculus narrow, sclerotised, with long, sparse hairs in distal ⅓. Saccus about ⅖ as long as sacculus, slightly widened to rounded apex. Aedeagus slender, 7 × as long as saccus; cornuti consisting of a stout basal spine bearing spinules in its basal half, second stout spine and two slender spines distally, each spine about ⅖ as long as aedeagus.

Female

Unknown.

Distribution

China (Sichuan).

Remarks

The forewing of this new species lacks conspicuous series of dots, which differentiates this species from other species of the genus *Yponomeuta*. However, the uncus is subquadrate, the ventral plate of the gnathos is developed into paired processes, the sacculus is narrow, and the cornuti are composed of four spines in the male genitalia, all these characters agree with the generic characters of *Yponomeuta*. Hence, we assign the new species to this genus.

Yponomeuta kanaiella (Matsumura, 1931)
Figs 4D, 8F, 14C

Hyponomeuta kanaiella Matsumura, 1931: 1097. TL: Japan (Honshu, Nagano, Kamisuwa). TD: EIHU.

Yponomeuta kanaiella – Inoue 1954: 38.

Diagnosis (adult; Fig. 4D)

Wingspan 17.0–21.0 mm. *Yponomeuta kanaiella* can be distinguished from the congeneric species in the male genitalia by the valva subparallel from near base to before apex (Fig. 8F), and in the female genitalia by having a tubular antrum (Fig. 14C), while the antrum in closely related species is funnel-shaped (Figs 14A–B, D–E). *Yponomeuta kanaiella* is similar to *Y. catharotis* (Meyrick, 1935) and *Y. spodocrossa* (Meyrick, 1935) in the male genitalia, and the differences between them are stated in the diagnosis of *Y. catharotis*.

Material examined

CHINA– **Beijing** • 3 ♂♂, 5 ♀♀; Mt Song, Dakezhuang Village; 12–13 Jul. 2010; A.H. Zhang *et al.* leg.; slide no. LHY21834; TJNHM. – **Hebei** • 1 ♂; Laiyuan, Mt Baishi; 1300 m a.s.l.; 20 Jul. 2000; H.L. Yu leg.; slide no. YHL00371; TJNHM • 4 ♂♂, 4 ♀♀; Xinglong County, Mt Wuling; 800 m a.s.l.; 18–27 Jul. 2011; H.H. Li and Y.P. Cai leg.; slide no. LHY21845♂; TJNHM • 2 ♀♀; Xinglong County, Mt Wuling; 40.63° N, 117.43° E; 1000 m a.s.l.; 15–17 Jun. 2014; S.R. Liu *et al.* leg.; slide no. LHY21846♀; TJNHM • 7 ♂♂; same data as for preceding; slide no. LHY21847♂; TJNHM • 2 ♂♂; Liaoheyuan Natural Reserve; 41.33° N, 118.44° E; 1280 m a.s.l.; 13–14 Jul. 2016; S.N. Zhao and S.R. Li leg.; slide

no. LHY22280; TJNHM • 5 ♂♂, 3 ♀♀; Mt Wuling, Liushuigou; 40.63° N, 117.51° E; 879 m a.s.l.; 17 Jul. 2016; S.N. Zhao and S.R. Li leg.; slide no. LHY21856♂; TJNHM. – **Heilongjiang** • 1 ♂; Shangzhi, Lvjiaweizi; 18 Jun. 2010; J.Y. Liu and Y.P. Cai leg.; slide no. LHY21908; TJNHM. – **Henan** • 2 ♂♂, 5 ♀♀; Tongbai, Shuiliandong; 300 m a.s.l.; 24–26 May 2000; H.L. Yu leg.; slide no. YHL00335♂; TJNHM • 2 ♂♂; Shan County, Mt Gan; 1100 m a.s.l.; 1 Jun. 2000; M.C. Wei leg.; slide nos YHL00317 to YHL00318; TJNHM • 30 ♂♂, 12 ♀♀; Nei Town, Baotianman; 1200 m a.s.l.; 23 May 2006; J.M. Lv and X. Zhang leg.; slide no. JQ09043♂; TJNHM • 1 ♂; Mt Funiu; 33.62° N, 111.68° E; 1225 m a.s.l.; 21 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22135; TJNHM • 1 ♂; Baotiaman; 33.49° N, 111.93° E; 1279 m a.s.l.; 24–25 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22140♂; TJNHM • 2 ♀♀; same data as for preceding; slide nos LHY22143♀ to LHY22144♀; TJNHM. – **Hubei** • 1 ♂, 3 ♀♀; Yingshan County, Taohuachong; 30.99° N, 116.03° E; 635 m a.s.l.; 24–30 Jun. 2014; W. Guan and M.Q. Yang leg.; slide no. LHY21986♂; TJNHM • 2 ♂♂; Yingshan County, Mt Wu; 31.10° N, 115.77° E; 1549 m a.s.l.; 2 Jul. 2022; J.X. Wang and P. Yu leg.; slide nos LHY22172 to LHY22173; TJNHM. – **Jilin** • 1 ♂; Helong, Bajiazi Town; 42.67° N, 128.92° E; 461 m a.s.l.; 5 Jul. 2023; D. Zhang leg.; slide no. LHY22197; TJNHM • 2 ♂♂; Fusong, Lushuihe Town; 42.47° N, 127.77° E; 795 m a.s.l.; 8 Jul. 2023; D. Zhang leg.; slide no. LHY22198; TJNHM • 3 ♂♂; Fusong, Lushuihe Town, Yongqing Forestry Centre; 42.48° N, 127.90° E; 749 m a.s.l.; 10 Jul. 2023; D. Zhang leg.; slide no. LHY22205; TJNHM • 5 ♂♂; Changbai, Shisandaogou Forestry Centre; 41.43° N, 127.79° E; 556 m a.s.l.; 13 Jul. 2023; D. Zhang leg.; slide nos LHY22210, LHY22215; TJNHM • 4 ♂♂; Antu, Mt Changbai, Dayangcha; 42.35° N, 127.95° E; 892 m a.s.l.; 19 Jul. 2023; D. Zhang leg.; slide nos LHY22227♂, LHY22231♂; TJNHM • 2 ♀♀; same data as for preceding; slide no. LHY22232♀; TJNHM • 1 ♂; Antu, Mt Changbai, Huangsongpu; 42.23° N, 128.09° E; 1037 m a.s.l.; 20 Jul. 2023; D. Zhang leg.; slide no. LHY22234; TJNHM. – **Liaoning** • 19 ♂♂, 22 ♀♀; Benxi County, Mt Tiecha; 25 Jun.–2 Jul. 2010; J.Y. Liu and Y.P. Cai leg.; slide no. LHY21888♀; TJNHM. – **Tianjin** • 27 ♂♂, 29 ♀♀; Ji County, Mt Baxian; 600 m a.s.l.; 24 Jun. 2001; H.H. Li *et al.* leg.; slide no. JQ10040♂; TJNHM • 1 ♂, 2 ♀♀; Mt Baxian; 26–30 Jun. 2013; T.T. Liu leg.; slide no. LHY21838♂; TJNHM.

Host plants

Celastraceae: *Euonymus alatus* (Thunb.) Siebold, *E. alatus* f. *ciliatodentatus* (Franch. & Sav.) Hiyama (Moriuti 1977: 180).

Distribution

China (Beijing, Hebei, Heilongjiang, Henan, Hubei, Jilin, Liaoning, Shaanxi, Tianjin, Zhejiang), Japan, Korea (Liu & Huang 1996: 3; Lewis & Sohn 2015: 129).

Yponomeuta mayumivorella (Matsumura, 1931)
Figs 4E, 9A

Hyponomeuta mayumivorella Matsumura, 1931: 1098. TL: Japan (Hokkaido, Sapporo). TD: EIHU.

Yponomeuta mayumivorella – Inoue 1954: 37.

Diagnosis (adult; Fig. 4E)

Wingspan 17.0–21.0 mm. *Yponomeuta mayumivorella* is similar to *Y. eurinellus* Zagulajev, 1969 in the male genitalia. It can be distinguished by possessing the socius, which is obtusely right-angled at the basal ⅓ on the inner margin and with a pleat in the distal half, and the ventral plate of the gnathos with slender processes (Fig. 9A). In *Y. eurinellus*, the socius is smooth on the inner margin and lacks a pleat, and the ventral plate of the gnathos has broad thumb-shaped processes (Fig. 8A).

Material examined

CHINA – **Zhejiang** • 3 ♂♂; Mt Tianmu, Xianrending; 1500 m a.s.l.; 25 Jul. 2011; L.L. Yang and N. Chen leg.; slide nos LHY21922, LHY22246; TJNHM • 3 ♂♂; Mt Tianmu, Xianrending; 30.35° N, 119.43° E; 1503 m a.s.l.; 29 Jun. 2013; A.H. Yin and X.C. Wang leg.; slide nos LHY21934, LHY22247; TJNHM.

Host plants

Celastraceae: *Euonymus fortunei* var. *radicans* (Miq.) Rehder, *E. hamiltonianus* ssp. *sieboldianus* (Blume) H. Hara (Gershenson & Ulenberg 1998: 139).

Distribution

China (Zhejiang), new record, Japan (Matsumura 1931: 1098).

Remark

This species is newly recorded for China.

Yponomeuta meguronis (Matsumura, 1931)

Hyponomeuta meguronis Matsumura, 1931: 1098. TL: Japan (Honshu, Tokyo). TD: EIHU.
Hyponomeuta hexabola Meyrick, 1935a: 602.

Yponomeuta meguronis – Inoue 1954: 38.
Yponomeuta hexabola – Inoue 1954: 38.

Host plants

Euonymus japonicus Thunb., *E. fortunei* (Turcz.) Hand.-Maz. var. *radicans* (Siebold, ex Miq.) Rehder (Moriuti 1977: 189; Kim *et al.* 2022: 585[10]).

Distribution

China (Taiwan), Japan, Korea (Matsumura, 1931: 1098; Sohn *et al.* 2010: 2814; Kim *et al.* 2022: 585[10]).

Remark

Sohn *et al.* (2010) reported the occurrence of this species in Taiwan, China.

Yponomeuta menkeni Gershenson & Ulenberg, 1998
Figs 4F, 9B

Yponomeuta menkeni Gershenson & Ulenberg, 1998: 142. TL: Japan (Honshu, Aomori, Kumoinotaki). TD: RMNH.

Diagnosis (adult; Fig. 4F)

Wingspan 23.0 mm. *Yponomeuta menkeni* can be distinguished from its congeners in the male genitalia by possessing the ventral plate of the gnathos carrying the paired processes connected basally, the costa convex before the middle, and the valva with the dorsoapex curved inwards (Fig. 9B). In congeneric species, these characters are different or displayed in different combinations.

Material examined

CHINA – **Shaanxi** • 1 ♂; Zhouzhi; 33.28° N, 107.26° E; 1370 m a.s.l.; 21 Jul. 2018; J.L. Zhuang and T. Liu leg.; slide no. LHY22075; TJNHM.

Host plants

Celastraceae: *Euonymus alatus* (Thunb.) Siebold, *E. hamiltonianus* ssp. *sieboldianus* (Blume) H. Hara (Gershenson & Ulenberg 1998: 142).

Distribution

China (Shaanxi), new record, Japan (Gershenson & Ulenberg 1998: 142).

Remark

This species is newly recorded for China.

Yponomeuta meridionalis Gershenson, 1972
Figs 4G, 9C

Yponomeuta meridionalis Gershenson, 1972: 633. TL: Tadzhikistan (Varzobgorge). TD: ZIN.

Diagnosis (adult; Fig. 4G)

Wingspan 17.5 mm. *Yponomeuta meridionalis* is similar to *Y. padella* (Linnaeus, 1758) in the male genitalia. The former can be distinguished from the latter by the following characters: the socius widened basally, the costa straight, and the saccus inflated apically (Fig. 9C). In *Y. padella*, the socius is not widened basally, the costa is convex in the basal half, and the saccus is parallel-sided anteriorly (Fig. 10B).

Material examined

CHINA – **Xinjiang** • 1 ♂; Buerjin, Hemu; 1114 m a.s.l.; 24 Jul. 2007; X.P. Wang *et al.* leg.; slide no. LHY22300; TJNHM.

Host plants

Rosaceae: *Crataegus korolkowii* L.Henry, *C. songarica* K. Koch., *C. turkestanica* Pojark (Gershenson & Ulenberg 1998: 144).

Distribution

China (Xinjiang), new record, Israel, Tajikistan (Lewis & Sohn 2015: 132).

Remarks

According to Gershenson & Ulenberg (1998), the forewing of *Y. meridionalis* lacks the subradial and supramedian series dots. In this study, we collected one specimen from Xinjiang that has the subradial and supramedian series dots, and its male genitalia characters agree with those of *Y. meridionalis*. This species is newly recorded for China.

Yponomeuta minipunctatus Gershenson & Ulenberg, 1998
Figs 4H, 9D

Yponomeuta minipunctatus Gershenson & Ulenberg, 1998: 144. TL: India (Punjab, Khyra Gully). TD: NHMUK.

Diagnosis (adult; Fig. 4H)

Wingspan 25.0 mm. *Yponomeuta minipunctatus* can be distinguished from its congeneric species by the following combination of characters: the white forewing with dots along veins R_3 and R_4, in the male genitalia by the uncus straight on the posterior margin, and the short aedeagus about 1.6 × as long as the saccus (Fig. 9D).

Material examined

CHINA – **Xizang** • 1 ♂; Jilong County, Jilong Town, Chongdui Village; 28.41° N, 85.31° E; 2858 m a.s.l.; 13 Jul. 2019; M.J. Qi and J.Q. Deng leg.; slide no. LHY22058; TJNHM.

Distribution

China (Xizang), new record, India (Gershenson & Ulenberg 1998: 144).

Remark

This species is newly recorded for China.

Yponomeuta mintenna (Povel, 1985)
Figs 5A, 9E, 14D

Eumonopyta mintenna Povel, 1985: 446. TL: Indonesia (Java, Merbabu). TD: RMNH.

Yponomeuta mintennus – Gershenson & Ulenberg 1998: 146.

Diagnosis (adult; Fig. 5A)

Wingspan 22.0–23.5 mm. *Yponomeuta mintenna* can be distinguished from other congeneric species by the following combination of characters: in the male genitalia by the triangular ventral plate of the gnathos without spines, and the costa concave before the dorsoapex of the valva (Fig. 9E); and in the female genitalia by the subtriangular lamella postvaginalis (Fig. 14D).

Material examined

CHINA – **Guizhou** • 1 ♂; Xishui, Linjiang; 500 m a.s.l.; 3 Jun. 2000; Y.L. Du leg.; slide no. YHL00337♂; TJNHM; 5 ♀♀; same data as for preceding; slide nos YHL00417♀, JQ10058♀, JQ10059♀; TJNHM.

Host plant

Celastraceae: *Euonymus japonicus* Thunb. (Povel 1985: 447).

Distribution

China (Guizhou), new record, Indonesia (Povel 1985: 446).

Remark

This species is newly recorded for China.

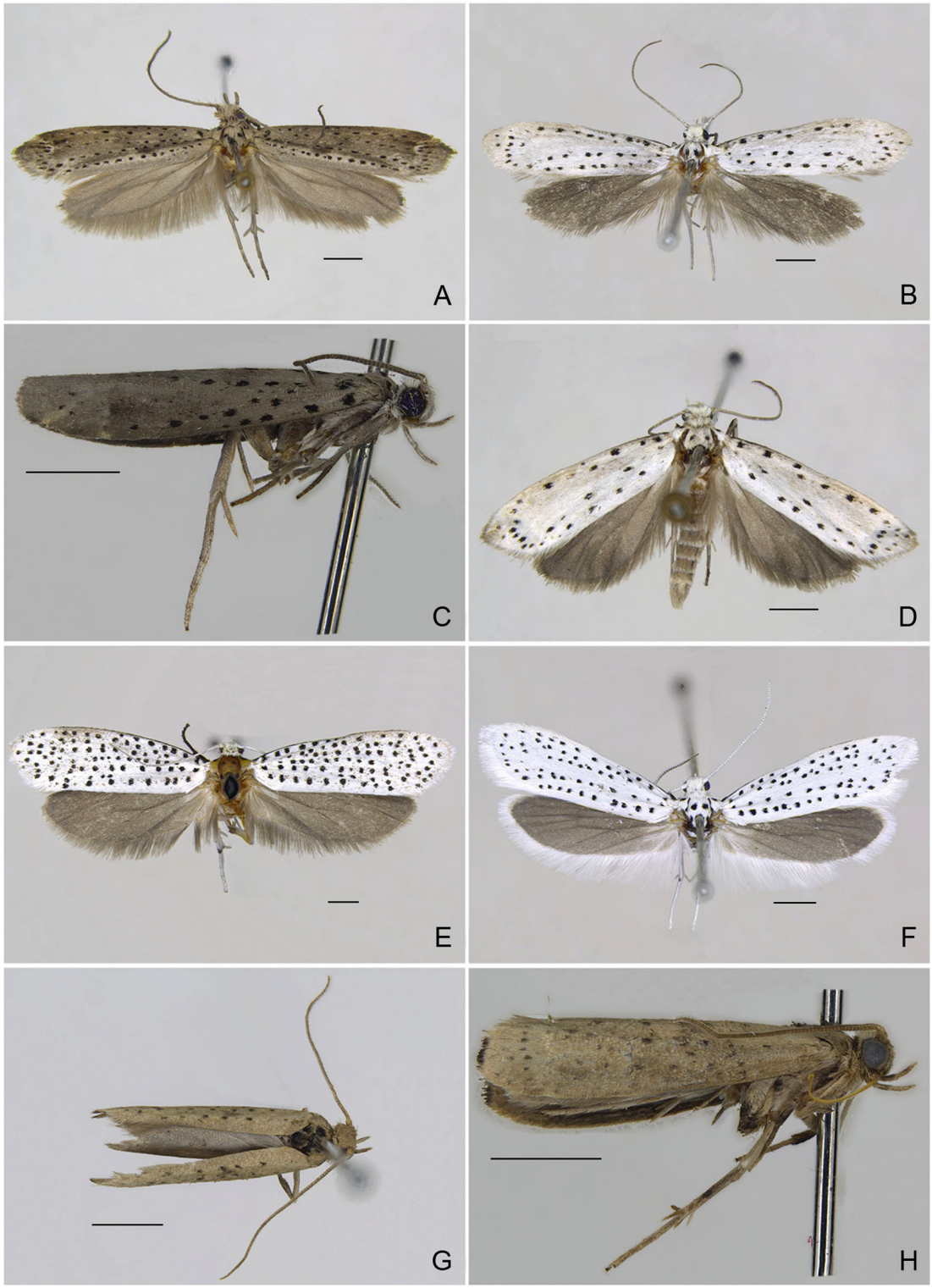

Fig. 5. Adults of *Yponomeuta* spp. **A**. *Y. mintenna* (Povel, 1985), ♂ (slide no. YHL00337). **B**. *Y. orientalis* Zagulajev, 1969, ♂ (slide no. LHY21849). **C**. *Y. osakae* Moriuti, 1977, ♂ (slide no. LHY22109). **D**. *Y. padella* (Linnaeus, 1758), ♂. **E**. *Y. polysticta* (Butler, 1879), ♀ (slide no. LHY21777). **F**. *Y. polystigmellus* (Felder & Felder, 1862), ♂ (slide no. LHY22345). **G**. *Y. quinquepunctata* Li sp. nov., holotype, ♂ (slide no. LHY22176), dorsal view. **H**. *Y. quinquepunctata* Li sp. nov., holotype, ♂ (slide no. LHY22176), lateral view. Scale bars = 2.0 mm.

Yponomeuta orientalis Zagulajev, 1969
Figs 5B, 9F, 14E

Yponomeuta orientalis Zagulajev, 1969: 193. TL: Russia (Sakhalin Island). TD: ZIN.
Yponomeuta okuellus Arduino & Bullini, 1994: 145. TL: Japan (Honshu, Iwate Pref., Morioka). TD: Bullini collection.

Diagnosis (adult; Fig. 5B)

Wingspan 18.5–22.0 mm. *Yponomeuta orientalis* can be distinguished from other congeneric species by the combination of the following characters: in the male genitalia by the valva with the costa straight and the apex obtuse (Fig. 9F), and in the female genitalia by having a dentate, weakly sclerotised area between the papillae anales (Fig. 14E). It is similar to *Y. cagnagella* (Hübner, [1813]) in the male genitalia, and the differences between these two closely related species are stated in the diagnosis of the latter species.

Material examined

CHINA – **Hebei** • 7 ♂♂; Laiyuan, Mt Baishi; 1300 m a.s.l.; 20–21 Jul. 2000; H.L. Yu *et al.* leg.; slide nos LHY21839, LHY22272 to LHY22274, LHY22361 to LHY22363; TJNHM • 7 ♂♂; Mt Heilong National Forest Park; 41.30° N, 116.12° E; 1320 m a.s.l.; 6–7 Jul. 2016; S.N. Zhao and S.R. Li leg.; slide nos LHY21849, LHY22275 to LHY22279, LHY22365; TJNHM • 1 ♂; Lingshou County, Wuyuezhai; 38.71° N, 113.86° E; 928 m a.s.l.; 6–9 Jul. 2016; S.H. Lu and H. Rong leg.; slide no. LHY21852♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22357♀; TJNHM • 1 ♂; Saihanba National Forest Park; 42.40° N, 117.25° E; 1504 m a.s.l.; 9 Jul. 2016; S.N. Zhao and S.R. Li leg.; slide no. LHY21854; TJNHM. – **Shanxi** • 1 ♂; Dahe Forestry Centre; 1340 m a.s.l.; 14–15 Jul. 2012; Q. Gao and N. Chen leg.; slide no. LHY22281♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22358♀; TJNHM • 2 ♂♂; Xiachuan, Xixia; 1500 m a.s.l.; 16 Jul. 2012; Q. Gao and N. Chen leg.; slide nos LHY22282, LHY22366; TJNHM • 1 ♂; Xiachuan, Dongxia; 1620 m a.s.l.; 18 Jul. 2012; Q. Gao and N. Chen leg.; slide no. LHY22284; TJNHM • 1 ♂; Qinshui, Mt Li, Zhuweigou; 35.43° N, 112.00° E; 1589 m a.s.l.; 28 Jul. 2013; S.L. Hao and M.J. Li leg.; slide no. LHY22285; TJNHM.

Host plants

Rosaceae: *Malus domestica* Borkh., *M. halliana* Koehne, *M.* x *micromalus* Makino, *M. pallasiana* Juz., *M. sieboldii* (Regel) Rehder, *Malus* spp. (Gershenson & Ulenberg 1998: 149).

Distribution

China (Hebei, Shanxi), Japan, Korea, Russia (Na *et al.* 2018: 543).

Remarks

Sohn *et al.* (2010) proposed that all the records of *Y. malinellus* Zeller, 1838 and *Y. padella* (Linnaeus, 1758) from East Asia were misidentifications of *Y. orientalis*, based on the distribution of the two species given by Gershenson & Ulenberg (1998). During this study, we confirm the distribution of *Y. orientalis* and *Y. padella* in China.

Yponomeuta osakae Moriuti, 1977
Figs 5C, 10A, 15A

Yponomeuta osakae Moriuti, 1977: 181. TL: Japan (Honshu, Osaka, Minoo). TD: OPU.

Diagnosis

Yponomeuta osakae can be distinguished from the other congeneric species by the combination of the following characters: in the male genitalia by the elongate, finger-shaped processes of the gnathal ventral plate more than 3 × the width (Fig. 10A); in the female genitalia by the ductus bursae slightly inflated toward the corpus bursae, and the subovate corpus bursae (Fig. 15A).

Yponomeuta osakae is similar to *Y. anatolica* (Stringer, 1930) and *Y. minipunctatus* Gershenson & Ulenberg, 1998. *Yponomeuta minipunctatus* can be easily distinguished by the white background colour of the forewing, while the forewings of the other two species are grey (Figs 3A, 4H, 5C). In the male genitalia, the width of the processes of the gnathal ventral plate is more than 3 × that of Y. *osakae* (Fig. 10A), while they are 1.5 × that of *Y. minipunctatus* (Fig. 9D) and 2 × that of *Y. anatolica* (Fig. 7A). Besides, the processes of the gnathal ventral plate are elongate triangular in *Y. anatolica* and digitate in the other two species. In the female genitalia, *Y. osakae* can be distinguished from similar species by having a rounded corpus bursae (Fig. 15A), which is oval in *Y. anatolica* (Fig. 13A). The female of *Y. minipunctatus* is unknown yet.

Material examined

CHINA – **Heilongjiang** • 1 ♂; Heihe, Mt Kalun; 120 m a.s.l.; 25 Jul. 1997; H.H. Li leg.; slide nos YHL00135♂; TJNHM • 1 ♀; same data as for preceding; slide no. JQ10087♀; TJNHM. – **Shaanxi** • 1 ♂; Fu County, Ziwuling Nature Reserve, Huaishu Village; 35.86° N, 108.72° E; 1150 m a.s.l.; 3 Aug. 2019; S. Yu leg.; slide no. LHY22109; TJNHM • 2 ♂♂; Ganquan County, Yaodian Village; 36.25° N, 109.37° E; 975 m a.s.l.; 8 Aug. 2019; S. Yu leg.; slide no. LHY22158; TJNHM.

Description

Female (adult; Fig. 5C)

Mesurements. Wingspan 17.5–20.0 mm.

Famela genitalia (Fig. 15A). Papillae anales large. Intersegmental membrane between papillae anales and eighth abdominal segment short. Apophyses posteriores as long as apophyses anteriores. Lamella postvaginalis composed of paired semioval processes. Antrum funnel-shaped, about 1/5 as long as ductus bursae. Ductus bursae 1.3 × as long as corpus bursae, slightly inflated toward corpus bursae; ductus seminalis arising from posterior ⅓ of ductus bursae. Corpus bursae large, subovate; signum absent.

Host plant

Celastraceae: *Euonymus hamiltonianus* ssp. *sieboldianus* (Blume) H. Hara (Moriuti 1977: 182).

Distribution

China (Heilongjiang, Shaanxi), new record, Japan (Moriuti 1977: 182).

Remark

This species is newly recorded for China, and the female is described for the first time.

Yponomeuta padella (Linnaeus, 1758)
Figs 5D, 10B, 15B

Phalaena Tinea padella Linneaus, 1758: 535. TL: Europe. TD: LSL.
Hyponomeuta variabilis Zeller, 1844: 214 (unnecessary replacement name for *padellus*).
Hyponomeuta padellus f. *grisea* Dufrane, 1960: 11. TL: Belgium (Hainaut, Frameries). TD: RBINS.

Hyponomeuta padellus f. *alba* Dufrane, 1960: 12. TL: Belgium (Hainaut, Mons). TD: RBINS.

Nygmia padella – Hübner 1825: 412.
Yponomeuta padella – Treitschke 1832: 217.
Hyponomeuta padella – Meyrick 1914: 18.

Diagnosis (adult; Fig. 5D)

Wingspan 19.5–22.0 mm. *Yponomeuta padella* can be distinguished from other congeneric species by the following combination of characters: in the male genitalia by the costa convex in the basal half and the saccus parallel-sided anteriorly (Fig. 10B); and in the female genitalia by having paired, small, widely remote lamella postvaginalis (Fig. 15B). It is similar to *Y. meridionalis* Gershenson, 1972 in the male genitalia, and the differences between these closely related species are stated in the diagnosis of the *Y. meridionalis*.

Material examined

CHINA – **Gansu** • 3 ♂♂, 1 ♀; Wen County, Bifenggou; 860 m a.s.l.; 13 Jul. 2005; H.L. Yu leg.; TJNHM. – **Hebei** • 36 ♂♂; Wei County, Xiaowutai; 1200 m a.s.l.; 22–28 Jul. 2000; Y.L. Du and Z.D. Li leg.; slide no. YHL00376♂; TJNHM • 8 ♀♀; same data as for preceding; slide no. YHL00377♂; TJNHM • 5 ♂♂; Mt Qipan, Xiaoshang Village; 16–17 Jul. 2001; Y.L. Du and S.L. Hao leg.; slide nos JQ10023, JQ10025; TJNHM. – **Heilongjiang** • 1 ♂; Heihe, Sanzhan; 400 m a.s.l.; 27 Jul. 1997; H.H. Li leg.; slide no. YHL00131; TJNHM. – **Shaanxi** • 16 ♂♂; Ningshan, Xunyangba; 1360 m a.s.l.; 26 Jun. 2007; H.L. Yu leg.; slide no. JQ10097♂; TJNHM • 3 ♀♀; same data as for preceding; slide no. JQ10098♀; TJNHM. – **Qinghai** • 9 ♂♂, 1 ♀; Huangyuan, Dahua; 14–25 Aug. 1995; L.F. Zhu leg.; slide no. YHL00129♂; TJNHM. – **Xinjiang** • 115 ♂♂; Buerjin, Hemu; 1114 m a.s.l.; 22–24 Jul. 2007; X.P. Wang *et al.* leg.; slide nos JQ09034♂, LHY22305♂, LHY22306♂; TJNHM • 110 ♀♀; same data as for preceding; slide nos JQ09035♀, JQ10088♀, LHY22307♀; TJNHM.

Host plants

Rosaceae: *Amelanchier lamarkii* F.G. Schroed., *Cotoneaster melanocarpus* G. Lodd., *C. nummularioides* Pojark., *C. nummularius* Fisch & C. A. Mey., *Crataegus monogyna* Jacq., *Cr. laevigata* (Poir.) D.C., *Cr. rhipidophylla* Gand., *Cydonia oblonga* Mill., *Malus domestica* Borkh., *Malus praecox* (Pall.) Borkh., *M. sylvestris* (L.) Mill., *Mespilus germanica* Linneaus, *Prunus amygdalus* Stokes., *P. avium* Linnaeus, *P. bucharica* (Korsh.) B. Fedtsch. & Rehder, *P. cerasifera* Ehrn., *P. cerasus* Linnaeus, *P. domestica* Linneaus, *P. spinosa* Linneaus, *P. stepposa* Kotov, *Pyrus bucharica* Litv., *Py. communis* Linneaus, *Sorbus aucuparia* Linneaus, *S. torminalis* (L.) Crantz (Lewis & Sohn 2015: 136).

Distribution

China (Gansu, Hebei, Heilongjiang, Shaanxi, Qinghai, Xinjiang), Albania, Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, UK, USA, [former]Yugoslavia (Lewis & Sohn 2015: 135).

Remarks

Yang (1977) was the first to record the distribution of *Y. padella* in China. Sohn *et al.* (2010) proposed that all the records of East Asia *Y. padella* might be a misidentification of *Y. orientalis*. In this study, we confirm the distribution of *Y. padella* in China.

Yponomeuta polysticta (Butler, 1879)
Figs 5E, 10C, 15C

Hyponomeuta polysticta Butler, 1879: 81. TL: Japan (Honshu, Kanagawa, Yokohama). TD: NHMUK.
Hyponomeuta tyrodes Meyrick, 1913: 138. TL: Japan. TD: NHMUK.

Yponomeuta polysticta – Nagano 1905: 263.

Diagnosis (adult; Fig. 5E)

Wingspan 27.0–30.0 mm. *Yponomeuta polysticta* is similar to *Y. tokyonella* (Matsumura, 1931). It can be distinguished from other congeneric species in the male genitalia by the sacculus without bristles distally (Fig. 10C), and in the female genitalia by the posterior margin of the mound-shaped lamella postvaginalis strongly concave medially. (Fig. 15C). In *Y. tokyonella*, the sclerotised sacculus has dense bristles distally (Fig. 12A), and the posterior margin of the lamella postvaginalis is shallowly concave medially (Fig. 16D).

Material examined

CHINA – **Anhui** • 2 ♂♂; Huangshan, Tanqiao Town; 6–7 Aug. 2004; J.S. Xu and J.L. Zhang leg.; slide no. JQ08355; TJNHM • 1 ♀; Mt Jiuhua, Ke Village; 8 Aug. 2004; J.S. Xu and J.L. Zhang leg.; slide no. JQ08354; TJNHM. – **Chongqing** • 2 ♂♂; Qianjiang, Wuli Town; 870 m a.s.l.; 23 Jul. 2012; Y.H. Sun and A.H. Yin leg.; slide no. LHY22012; TJNHM. – **Gansu** • 4 ♀♀; Wen County, Bifenggou; 860 m a.s.l.; 12–14 Jul. 2005; H.L. Yu leg.; slide no. JQ08345♀; TJNHM • 2 ♂♂; same data as for preceding; slide no. JQ08357♂; TJNHM. – **Guangdong** • 23 ♂♂, 5 ♀♀; Shaoguan, Nanling; 11 Jun. 2005; M. Wang and L.S. Chen leg.; slide nos JQ10010♂, WXC13155♂; TJNHM • 1 ♀; Shaoguan, Shimentai Natural Reserve, Huawu Village; 24.43° N, 113.07° E; 403 m a.s.l.; 28 May 2021; X.H. Zuo leg.; slide no. LHY22342; TJNHM. – **Guangxi** • 2 ♂♂; Guilin, Mt Maoer, Jiuniutang; 25.88° N, 110.49° E; 1016 m a.s.l.; 23–24 Jul. 2015; M.J. Qi and S.N. Zhao leg.; slide no. LHY21993; TJNHM • 2 ♀♀; Hechi, Huanjiang County, Yangmeiao; 1180 m a.s.l.; 24 Jul. 2015; M.Q. Yang and G.E. Lee leg.; slide no. LHY21994♀; TJNHM • 2 ♂♂; same data as for preceding; slide no. LHY22319♂; TJNHM • 1 ♀; Mt Maoer, Jiuniutang; 25.88° N, 110.49° E; 1130 m a.s.l.; 8 Aug. 2022; H. Sun *et al.* leg.; slide no. LHY21777; TJNHM. – **Guizhou** • 2 ♂♂; Chishui, Suoluo; 390 m a.s.l.; 29 May 2000; Y.L. Du leg.; slide no. YHL00338; TJNHM • 1 ♂; Xishui, Sanchahe Town; 28.48° N, 106.42° E; 804 m a.s.l.; 2 Jul. 2019; M.R. Xing *et al.* leg.; slide no. LHY22023; TJNHM • 3 ♀♀; Suiyang, Maoya Town; 28.13° N, 107.16° E; 723 m a.s.l.; 3–4 Jul. 2019; M.R. Xing *et al.* leg.; slide no. LHY22024; TJNHM • 2 ♂♂; Mt Foding; 27.35° N, 108.16° E; 618 m a.s.l.; 17 Jul. 2019; M.R. Xing *et al.* leg.; slide nos LHY22028, LHY22322; TJNHM. – **Henan** • 1 ♀; Luoyang, Mt Baiyun; 1560 m a.s.l.; 23 Jul. 2001; D.D. Zhang leg.; TJNHM. – **Hubei** • 15 ♂♂; Xianning, Mt Jiugong; 26–27 Jul. 2011; Y.L. Xiao leg.; slide nos LHY21982♂, LHY22313♂, LHY22314♂, LHY22315♂, LHY22316♂, LHY22317♂, LHY22328♂, LHY22329♂, LHY22330♂, LHY22331♂, LHY22332♂, LHY22333♂, LHY22334♂, LHY22335♂, LHY22336♂; TJNHM • 8 ♀♀; same data as for preceding; slide no. LHY21983♀; TJNHM • 1 ♂; Baokang County, Dafan Village; 31.99° N, 111.10° E; 250 m a.s.l.; 16 Jul. 2017; W.D. Qi *et al.* leg.; slide no. LHY22254; TJNHM • 4 ♂♂; Fang County, Duchuan Village; 31.89° N, 110.71° E; 793 m a.s.l.; 18–19 Jul. 2017; W.D. Qi *et al.* leg.; slide nos LHY21989♂, LHY22256♂, LHY22258♂, LHY22259♂; TJNHM • 2 ♀♀; same data as for preceding; slide no. LHY22257♀; TJNHM. – **Hunan** • 8 ♂♂, 2 ♀♀; Sangzhi, Mt Badagong; 1250 m a.s.l.; 13 Aug. 2001; H.H. Li and X.P. Wang leg.; slide no. JQ08353♂; TJNHM. – **Shaanxi** • 1 ♂, 3 ♀♀; Taibai, Huangbaiyuan; 33.48° N, 107.32° E; 1295 m a.s.l.; 29 Jun. 2016; J.X. Zhao and Y. Fei leg.; slide no. LHY22065♂; TJNHM • 1 ♀; Langao, Hengxi Town; 32.22° N, 108.81° E; 877 m a.s.l.; 29 Jul. 2016; J.X. Zhao and Y. Fei leg.; slide nos LHY22066♀; TJNHM • 3 ♂♂; same data as for preceding; slide nos LHY22067♂, LHY22073♂, LHY22265♂; TJNHM. – **Sichuan** • 1 ♀; Tianquan, Labahe; 1300 m a.s.l.; 28 Jul. 2004; Y.D. Ren leg.; slide no. JQ08351; TJNHM • 2 ♂♂,

3 ♀♀; Wolong; 1900 m a.s.l.; 7–9 Aug. 2004; Y.D. Ren leg.; slide no. JQ08350♂; TJNHM • 7 ♂♂, 11 ♀♀; Baoxing, Fengtongzhai; 30.57° N, 102.88° E; 1723 m a.s.l.; 16–29 Jul. 2021; S. Yu *et al.* leg.; slide nos LHY22348♂, LHY22349♂, LHY22350♂; TJNHM. – **Zhejiang** • 1 ♂; Mt Jiulong; 400 m a.s.l.; 5 Aug. 2011; L.L. Yang and N. Chen leg.; slide no. LHY21926; TJNHM • 3 ♂♂; Mt Jiulong, Huangtanyu; 28.39° N, 118.84° E; 467 m a.s.l.; 8–9 Jul. 2013; A.H. Yin and X.C. Wang leg.; slide nos LHY21939, LHY22311 to LHY22312; TJNHM • 1 ♂; Jiangshan, Shuangxikou Town, Laofoyan Village; 28.35° N, 118.68° E; 424 m a.s.l.; 8 Aug. 2016; Q.Y. Wang *et al.* leg.; slide no. LHY21974; TJNHM • 1 ♂; Jingning; 27.73° N, 119.64° E; 1102 m a.s.l.; 10 Jul. 2017; Z.G. Zhang *et al.* leg.; slide no. LHY22251♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22252♀; TJNHM.

Host plants

Celastraceae: *Euonymus hamiltonianus* ssp. *sieboldianus* (Blume) H. Hara., *E. maackii* Rupr., *E. oxyphyllus* Miq. (Gershenson & Ulenberg 1998: 155).

Distribution

China (Anhui, Chongqing, Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Zhejiang), Japan, Korea, Russia (Lewis & Sohn 2015: 138).

Yponomeuta polystigmellus (Felder & Felder, 1862)
Figs 5F, 10D, 15D

Hyponomeuta polystigmellus Felder & Felder, 1862: 40. TL: China (Ningbo, Zhejiang Prov.). TD: NHMUK.

Yponomeuta polystigmellus – Moriuti 1972: 154.

Diagnosis (adult; Fig. 5F)

Wingspan 20.5–22.0 mm. *Yponomeuta polystigmellus* can be distinguished from its congeners by the white fringes of the hindwing. This species is similar to *Y. sociatus* Moriuti, 1972, and can be distinguished from the latter by the following characters: in the male genitalia, by the valva rounded dorsoapically, and the sacculus with an uplifted, thorn-shaped sclerite distally (Fig. 10D); in the female genitalia by the elongate ovate corpus bursae (Fig. 15D); while in *Y. sociatus*, the valva is tooth-shaped dorsoapically, and the sacculus lacks a thorn-shaped distal sclerite (Fig. 11C); and the corpus bursae is subrounded (Fig. 16B).

Material examined

CHINA – **Gansu** • 1 ♀; Tianshui, Dangchuan; 12 Aug. 1988; X.Y. Wu leg.; slide no. YHL00044♀; TJNHM • 4 ♂♂; same data as for preceding; slide nos YHL00045♂, YHL00118♂; TJNHM • 6 ♂♂, 5 ♀♀; Wen County, Bifenggou; 860 m a.s.l.; 9–14 Jul. 2005; H.L. Yu leg.; slide nos JQ08356♂, JQ10038♂; TJNHM. – **Guizhou** • 7 ♂♂; Mt Leigong, Xiannvtang; 26.37° N, 108.19° E; 1535 m a.s.l.; 25 Jul. 2019; M.R. Xing *et al.* leg.; slide nos LHY22031♂, LHY22269♂, LHY22270♂, LHY22323♂, LHY22324♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22371♀; TJNHM. – **Hebei** • 3 ♂♂, 3 ♀♀; Xinglong County, Mt Wuling, Shuangyuanfeng; 800 m a.s.l.; 15–30 Jul. 2011; H.H. Li and Y.P. Cai leg.; TJNHM. – **Henan** • 1 ♂; Baotianman; 33.49° N, 111.88° E; 609 m a.s.l.; 26 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22145; TJNHM • 1 ♂; Mt Funiu; 33.64° N, 111.66° E; 1109 m a.s.l.; 22 Jul. 2023; M.J. Qi *et al.* leg.; slide no. LHY22147♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22148♀; TJNHM. – **Hubei** • 1 ♂; Zhuxi County, Quanxi Town; 32.03° N, 109.69° E; 868 m a.s.l.; 9 Jul. 2017; W.D. Qi *et al.* leg.; slide no. LJ17347; TJNHM • 1 ♀; Zhuxi County, Mt Bagua; 32.09° N, 109.67° E; 790 m a.s.l.; 13 Jul. 2017; W.D. Qi *et al.* leg.; slide no. LJ17346♀; TJNHM • 1 ♂; same data

as for preceding; slide no. LJ17349♂; TJNHM. – **Hunan** • 1 ♂, 3 ♀♀; Sangzhi, Mt Badagong; 1250 m a.s.l.; 3–12 Aug. 2001; H.H. Li and X.P. Wang leg.; TJNHM. – **Inner Mongolia** • 1 ♂, 1 ♀; Liang City, Mt Manhan; 1300 m a.s.l.; 8 Aug. 2002; D.D. Zhang and Z.Q. Li leg.; TJNHM. – **Shaanxi** • 2 ♂♂; Xunyi County, Mt Shimen; 35.07° N, 108.54° E; 1487 m a.s.l.; 24–25 Jul. 2019; S. Yu leg.; slide no. LHY22103♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY22372♀; TJNHM. – **Shanxi** • 1 ♂; Lingchuan County, Xizhashui Village; 900 m a.s.l.; 16 Jul. 2010; H.Y. Bai and L.L. Yang leg.; slide no. LHY21858; TJNHM. – **Sichuan** • 102 ♂♂; Wolong; 2008 m a.s.l.; 23–26 Aug. 2005; H.L. Yu leg.; slide nos JQ09038♂, JQ10013♂, WXC13150♂; TJNHM • 40 ♀♀; same data as for preceding; slide nos JQ09039♀, JQ10015♀; TJNHM • 4 ♂♂; Wanglang, Baixionggou; 33.00° N, 104.03° E; 2845 m a.s.l.; 21 Jul. 2017; M.J. Qi and X.F. Yang leg.; slide nos LJ17329 to LJ17330, LHY22004, LHY22267; TJNHM • 2 ♂♂; Mao County, Songpinggou; 32.10° N, 103.62° E; 2424 m a.s.l.; 3–4 Jul. 2021; S. Yu *et al.* leg.; slide nos LHY22345 to LHY22346; TJNHM • 1 ♂; Wenchuan, Wolong; 31.04° N, 103.20° E; 1889 m a.s.l.; 11 Jul. 2021; S. Yu *et al.* leg.; slide no. LHY22347; TJNHM. – **Tianjin** • 12 ♂♂, 16 ♀♀; Ji County, Mt Baxian; 560 m a.s.l.; 23 Jun. 2001; H.H. Li *et al.* leg.; slide no. JQ10037♂; TJNHM.

Host plants

Celastraceae: *Euonymus alatus* (Thunb.) Siebold, *E. hamiltonianus* ssp. *sieboldianus* (Blume) H. Hara (Gershenson & Ulenberg 1998: 157).

Distribution

China (Gansu, Guizhou, Hebei, Henan, Hubei, Hunan, Inner Mongolia, Jiangxi, Shaanxi, Shanxi, Sichuan, Taiwan, Tianjin, Zhejiang), Japan, Korea, Russia (Lewis & Sohn 2015: 138).

Yponomeuta quinquepunctata Li sp. nov.

urn:lsid:zoobank.org:act:AB6A9EFE-88DA-49B4-ACE3-E347A403B15F

Figs 5G–H, 10E

Diagnosis

The new species can be distinguished from its congeners by the following set of characters: the thorax has 5 black spots not distinctly separated, somehow forming an ill-defined large black speckle. This new species is similar to *Y. heterochroma* Li sp. nov. in the male genitalia, and the differences between them are stated in the diagnosis of the latter species.

Etymology

The specific epithet is derived from the Latin '*quinquepunctatus*', referring to the five large black spots in the thorax.

Type material

Holotype

CHINA – **Yunnan** • ♂; Jinghong, Menglun Botanical Garden, Lvshilin; 21.90° N, 101.27° E; 580 m a.s.l.; 5 Aug. 2016; K.J. Teng *et al.* leg.; slide no. LHY22176; TJNHM.

Description

Male (adult; Fig. 5G–H)

Measurements and coloration. Wingspan 14.5 mm. Head ochreous grey. Antenna ochreous grey; flagellum ringed with brown dorsally. Labial palpus dark brown on outer surface, ochreous grey on inner surface. Thorax grey, with 5 black spots not distinctly separated from each other: 2 spots at anterior ¼, 2 spots at posterior ¼ of thorax, one in left, one other in right, and one at the posterior end; these spots

somewhat forming ill-defined large black speckle; tegula ochreous grey, with a small black dot near base. Forewing grey, dark brown along basal ⅓ of costal margin; with 38 small black dots, viz., 3 dots subcostal aligned from basal 1/6 to middle, 7 radial dots stretching from basal 1/6 to distal ¼ of costal margin, 4 subradial dots running from before middle to distal 1/6 below costal margin, 5 supramedian dots running from basal ⅓ to distal 1/6 of forewing, 8 submedian dots situated near base of forewing and extending to tornus, 5 subdorsal dots running from basal ¼ to before tornus, 6 dots situated between supramedian and submedian area; fringe pale ochreous except dark brown along upper half of termen. Hindwing dark grey; fringe grey. Legs pale grey; tibia and tarsus of foreleg mottled with dark brown ventrally; midleg with tibia and tarsus dark brown on outer surface, midtibia with a black dot medially; hindleg with femur dark brown basally, spurs mottled with dark brown.

Male genitalia (Fig. 10E). Uncus subquadrate. Socius stout, slightly narrowed to apex, with two apical thorns. Subscaphium slender. Ventral plate of gnathos trapezoidal, spinous. Valva widened from base to basal 3/5, then narrowed to obtuse apex, roundly produced on ventral margin, with sclerotised narrow belt extending from base of valva, weakened towards beneath distal 1/5 of costa; costa nearly straight; transtilla narrowed toward tip; sacculus relatively long, narrow, with thorn-shaped apical sclerite directed dorsad. Saccus shorter than uncus, about 3/5 as long as sacculus, subparallel-sided in posterior half, dilated in anterior half. Aedeagus 6 × as long as saccus; cornuti consisting of two stout basal spines about ⅓ as long as aedeagus and bearing spinules in their basal 2/5, and two slender distal spines about 2/5 as long as aedeagus.

Female

Unknown.

Distribution

China (Yunnan).

Yponomeuta refrigerata (Meyrick, 1931)
Figs 6A, 10F

Hyponomeuta refrigerata Meyrick, 1931b: 172. TL: Japan (Hokkaido, Sapporo). TD: NHMUK.
Yponomeuta zagulajevi Efremov, 1976: 108. TL: Russia (Amur, Blagoveshchchensk). TD: ZIN.

Yponomeuta refrigerata – Inoue 1954: 37.

Diagnosis (adult; Fig. 6A)

Wingspan 20.5–22.5 mm. *Yponomeuta refrigerata* is similar to *Y. evonymella* (Linnaeus, 1758) in appearance. *Yponomeuta refrigerata* can be distinguished from *Y. evonymella* by the character set in the male genitalia: the ventral plate of the gnathos with processes parallel-sided basally and narrowed from the middle to the apex, and the costa convex in the basal half and concave in the distal half (Fig. 10F). In *Y. evonymella*, the ventral plate of the gnathos has bar-shaped processes parallel-sided from near base to the apex, and the costa is nearly straight (Fig. 8B).

Material examined

CHINA – **Shaanxi** • 1 ♂; Fu County, Ziwuling Natural Reserve, Chenjiahe; 35.52° N, 108.39° E; 1216 m a.s.l.; 4 Aug. 2019; S. Yu leg.; slide no. LHY22113; TJNHM. – **Shanxi** • 2 ♂♂; Qinshui, Mt Li Natural Reserve, Zhuweigou; 35.43° N, 112.00° E; 1589 m a.s.l.; 28 Jul. 2013; S.L. Hao and M.J. Li leg.; slide nos LHY22339 to LHY22340; TJNHM.

Host plant

Celastraceae: *Euonymus maackii* Rupr. (Efremov 1976: 108).

Distribution

China (Shaanxi, Shanxi), new record, Japan, Korea, Russia (Na *et al.* 2018: 542).

Remark

This species is newly recorded for China.

Yponomeuta rorrella (Hübner, 1796)
Figs 6B, 11A, 15E

Tinea rorrella Hübner, 1796: 34. TL: Europe. TD: Not Found.
Tinea helicella Freyer, 1842: 154. TL: Germany (Lech River). TD: not Found.

Nygmia rorella – Hübner 1825: 412 (misspelling of *rorrella*).
Yponomeuta rorella – Treitschke 1832: 222.
Hyponomeuta rorellus – Zeller 1844: 218.
Yponomeuta rorrellus – Hanneman 1977: 139.

Diagnosis (adult; Fig. 6B)

Wingspan 19.5–24.5 mm. *Yponomeuta rorrella* is distinguishable from the congeneric species in the male genitalia by having the costa straight basally, the valva narrowed from near base to apex, and the saccus droplet-shaped distally (Fig. 11A). In the female genitalia, this species is diagnosed by the paired, widely remote, semicircular lamella postvaginalis (Fig. 15E).

Material examined

CHINA – **Gansu** • 1 ♂, 1 ♀; Mt Xiaolong, Dangchuan; 12 Aug. 1988; X.Y. Wu leg.; slide no. YHL00425♂; TJNHM • 10 ♂♂; Wen County, Bifenggou; 860 m a.s.l.; 3–14 Jul. 2005; H.L. Yu leg.; slide no. JQ08348♂; TJNHM • 10 ♀♀; same data as for preceding; slide no. JQ08349♀; TJNHM • 14 ♂♂, 5 ♀♀; Tianshui, Dangchuan, Hua Temple; 1342 m a.s.l.; 28–29 Jul. 2006; X.P. Wang and X.F. Shi leg.; slide no. JQ09049♂; TJNHM. – **Hebei** • 52 ♂♂; Laiyuan, Mt Baishi; 1300 m a.s.l.; 20 Jul. 2000; H.L. Yu *et al.* leg.; slide nos YHL00369♂, YHL00370♂; TJNHM • 18 ♀♀; same data as for preceding; slide no. YHL00438♀; TJNHM • 2 ♂♂; Wei County, Xiaowutai; 1200 m a.s.l.; 26–27 Jul. 2000; Y.L. Du and Z.D. Li leg.; TJNHM • 1 ♂; Zunhua, Dongling, Jingling; 120 m a.s.l.; 8 Jul. 2001; Y.L. Du and S.L. Hao leg.; TJNHM. – **Henan** • 1 ♂, 3 ♀♀; Linzhou, Shibanyan; 550 m a.s.l.; 20–21 Jul. 2006; H. Zhen and D.H. Kuang leg.; TJNHM • 7 ♂♂, 6 ♀♀; Luoning, Shenlingzhai; 800 m a.s.l.; 21 Jul. 2007; Y.D. Ren leg.; TJNHM. – **Ningxia** • 1 ♂, 2 ♀♀; Longtan; 12 Jul. 1983; Ningxia Agricultural Academy leg.; slide no. YHL00427♂; TJNHM • 2 ♂♂, 1 ♀; Mt Liupan; 12–17 Jul. 1983; Ningxia Agricultural Academy leg.; slide no. YHL00440♂; TJNHM • 1 ♂, 2 ♀♀; Yanchi; 22 Jul. 1996; Ningxia Agricultural Academy leg.; slide no. YHL00428♂; TJNHM • 20 ♂♂; Mt Liupan, Xiaonanchuan; 1900 m a.s.l.; 27–28 Jun. 2008; S.L. Hao and Z.W. Zhang leg.; slide no. JQ08338♂; TJNHM • 2 ♀♀; same data as for preceding; slide no. JQ08340♀; TJNHM • 60 ♂♂, 39 ♀♀; Mt Liupan, Dongshanpo Forestry Centre; 2050 m a.s.l.; 7–8 Jul. 2008; S.L. Hao and Z.W. Zhang leg.; slide nos JQ08341♀, JQ08342♀; TJNHM • 20 ♂♂, 22 ♀♀; Mt Liupan, Heshangpu Forestry Centre; 2100 m a.s.l.; 9–10 Jul. 2008; S.L. Hao and Z.W. Zhang leg.; slide no. JQ08339♂; TJNHM. – **Shaanxi** • 2 ♂♂, 3 ♀♀; Mt Taibai, Songping Temple; 11–16 Jul. 2005; P. You leg.; TJNHM • 1 ♂, 1 ♀; Ningshan, Xunyangba; 1360 m a.s.l.; 1–3 Jul. 2007; H.L. Yu leg.; TJNHM. – **Shanxi** • 9 ♂♂, 7 ♀♀; Ningwu County, Mt Luya; 1450 m a.s.l.; 20 Jul. 2011; S.L. Hao and J.Y. Liu leg.;

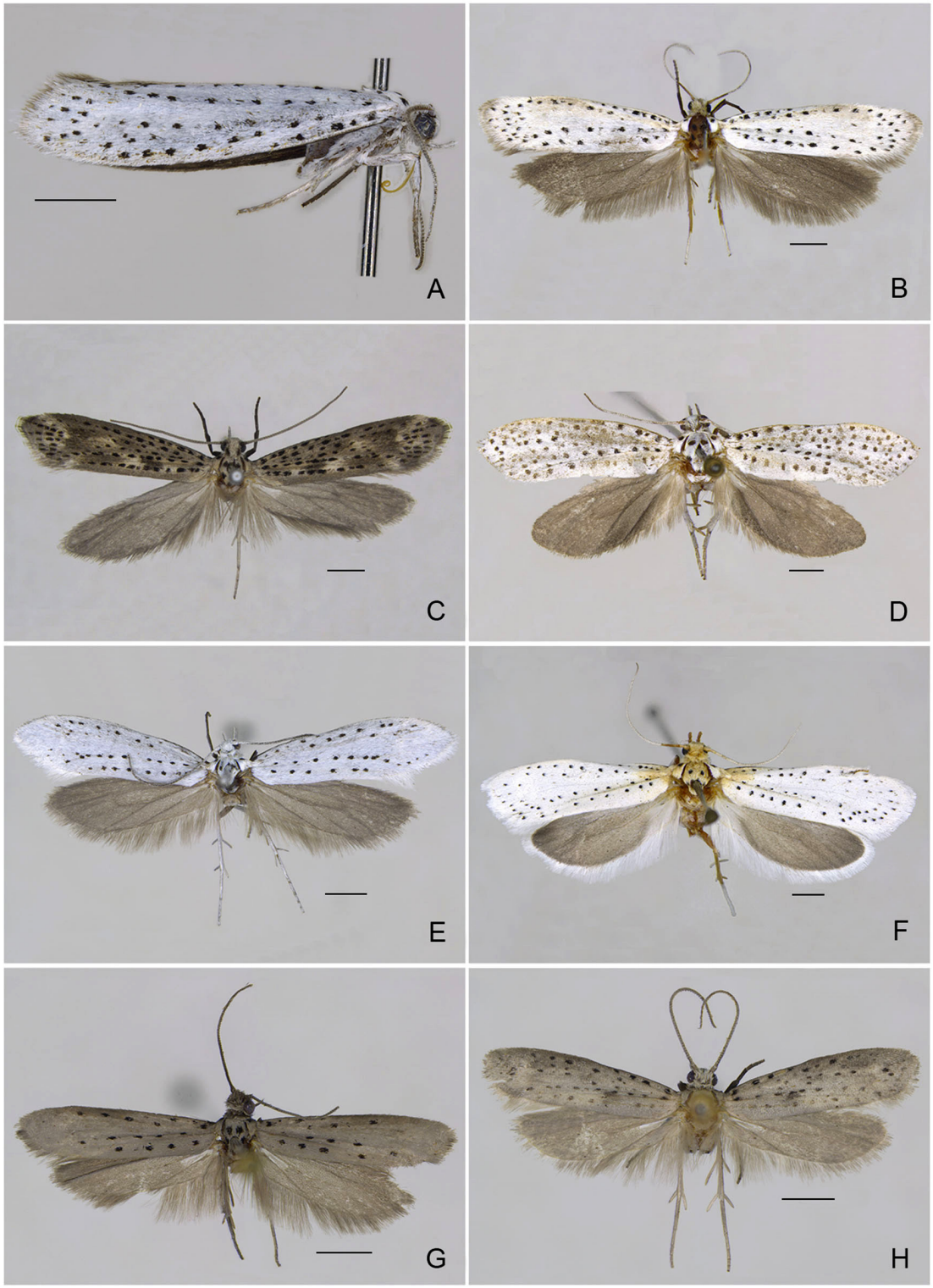

Fig. 6. Adults of *Yponomeuta* spp. **A**. *Y. refrigerata* (Meyrick, 1931), ♂ (slide no. LHY22113). **B**. *Y. rorrella* (Hübner, 1796), ♀ (slide no. JQ08341). **C**. *Y. similicinefacta* Li sp. nov., holotype, ♂, slide no. LHY22343. **D**. *Y. sociatus* Moriuti, 1972, ♂ (slide no. LHY21916). **E**. *Y. spodocrossa* (Meyrick, 1935), ♂ (slide no. LHY22001). **F**. *Y. tokyonella* (Matsumura, 1931), ♂ (slide no. YHL00372). **G**. *Y. vigintipunctata* (Retzius, 1783), ♂ (slide no. LHY21843). **H**. *Y. yanagawana* (Matsumura, 1931), ♂ (slide no. LJ17406). Scale bars = 2.0 mm.

TJNHM • 4 ♂♂, 3 ♀♀; Ningwu County, Xiyao Village; 1475 m a.s.l.; 21 Jul. 2011; S.L. Hao and J.Y. Liu leg.; TJNHM • 7 ♂♂, 17 ♀♀; Jiaocheng County, Mt Guandi, Erhe Village; 1658 m a.s.l.; 28 Jun. 2011; S.L. Hao and Z.W. Zhang leg.; TJNHM.

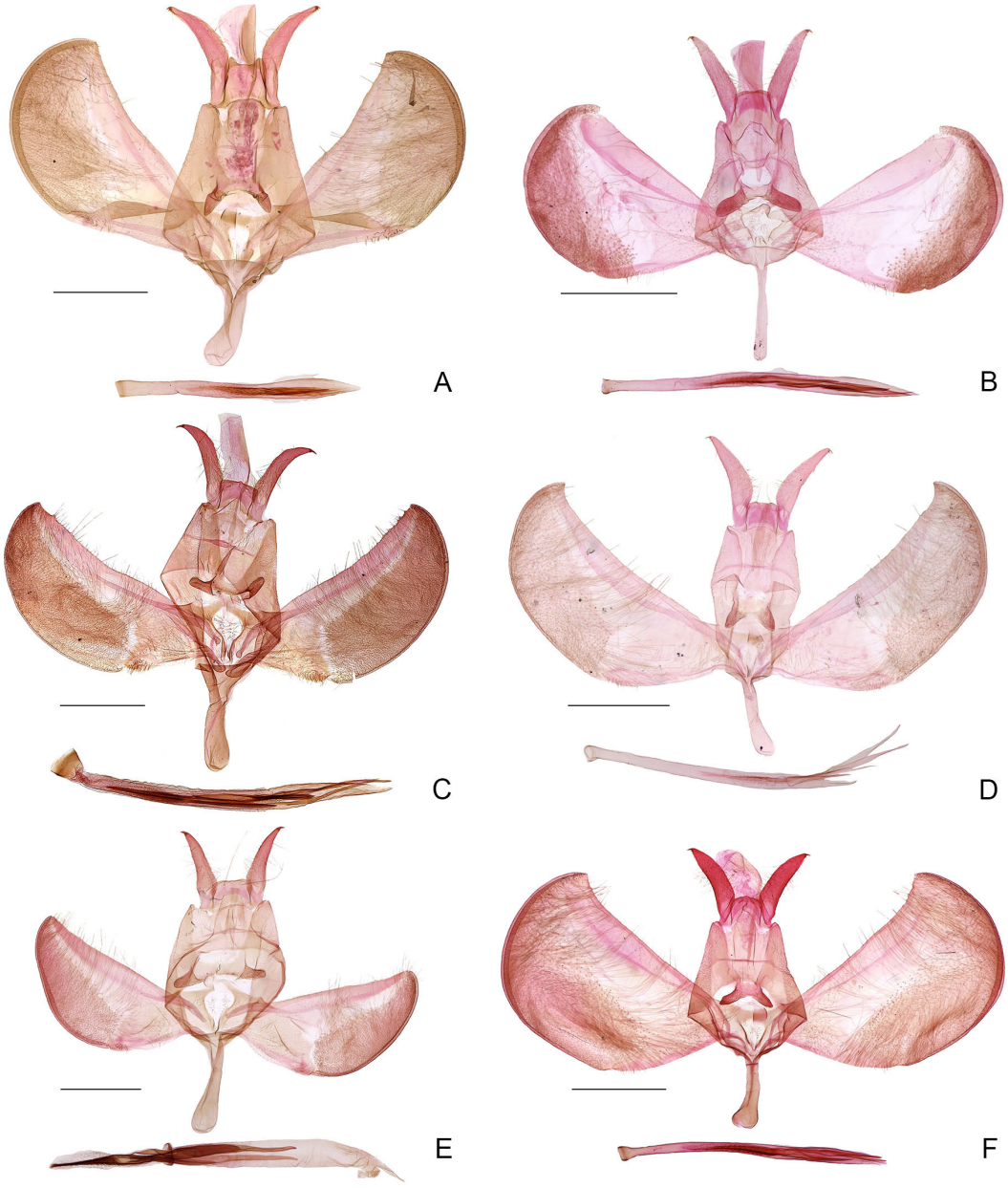

Fig. 7. Male genitalia of *Yponomeuta* spp. **A**. *Y. anatolica* (Stringer, 1930) (slide no. LHY21988). **B**. *Y. bipunctella* (Matsumura, 1931) (slide no. LHY21889). **C**. *Y. cagnagella* (Hübner, [1813]) (slide no. LHY21891). **D**. *Y. catharotis* (Meyrick, 1935) (slide no. LHY22083). **E**. *Y. changbaishana* Li sp. nov., holotype (slide no. LHY22298). **F**. *Y. cinefacta* (Meyrick, 1935) (slide no. LHY22219). Scale bars = 0.5 mm.

Host plants

Salicaceae Mirb.: *Populus alba* L., *Salix alba* L., *S. babylonica* L., *S.caprea* L., *S. cinerea* L., *S. dasyclados* Wimm., *S. elegans* Besser., *S. fragilis* L., *S. incana* Schrank, *S. viminalis* L. (Lewis & Sohn 2015: 140).

Distribution

China (Gansu, Hebei, Henan, Ningxia, Shaanxi, Shanxi), Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Pakistan, Poland, Portugal, Romania, Russia, Spain, Sweden, Switzerland, UK (Lewis & Sohn 2015: 140).

Yponomeuta similicinefacta Li sp. nov.

urn:lsid:zoobank.org:act:7FC674F0-E9E2-4289-A881-EF82D1B452D4

Figs 6C, 11B, 16A

Diagnosis

The new species is similar to *Y. cinefacta* (Meyrick, 1935) in the male genitalia. Externally, the new species can be distinguished from the latter by the pale grey forewing mottled with dark grey, and the presence of a series of subradial and supramedian dots; in the male genitalia the new species can be diagnosed by having the socius widened medially and distinctly arched on the inner margin; and in the female genitalia by having a relatively small subovate corpus bursae. In *Y. cinefacta*, the grey forewing lacks the series of the subradial and supramedian dots (Fig. 3F); the socius is not widened medially and is obtuse on the inner margin (Fig. 7F); and the corpus bursae is round (Fig. 13D).

Etymology

The specific epithet is derived from the Latin '*simil-*' ('similar') and '*cinefacta*', the name of another species, *Yponomeuta cinefacta*, referring to the similarities between the two species.

Type material

Holotype

CHINA – **Sichuan** • ♂; Mao County, Songpinggou; 32.10° N, 103.62° E; 2424 m a.s.l.; 3 Jul. 2021; S. Yu *et al.* leg.; slide no. LHY22343; TJNHM.

Paratypes

CHINA – **Shaanxi** • 1 ♂; Qinling, Jiwozi; 1840 m a.s.l.; 2 Jul. 2015; H.L. Yu and K.L. Liu leg.; slide no. LHY22264; TJNHM. – **Sichuan** • 1 ♂; same data as holotype; slide no. LHY22368♂; TJNHM • 1 ♀; same data as for holotype; slide no. LHY22369♀; TJNHM • 1 ♂; Kangding; 2400 m a.s.l.; 8 Jul. 2001; H.H. Li and X.P. Wang leg.; slide no. JQ10049; TJNHM • 7 ♀♀; Wenchuan, Wolong; 31.04° N, 103.20° E; 1889 m a.s.l.; 11–14 Jul. 2021; S. Yu *et al.* leg.; slide no. LHY22344♀; TJNHM • 2 ♂♂; same data as for preceding; slide no. LHY22370♂; TJNHM.

Description

Male (adult; Fig. 6C)

Measurements and coloration. Wingspan 21.0–25.0 mm. Head pale grey, with two black dots posteriorly. Antenna with scape dark brown dorsally, greyish white ventrally; flagellum pale grey, ringed with dark brown dorsally. Labial palpus dark brown on outer surface, pale grey on inner surface. Thorax grey, with 5 black dots, one pair at anterior ¼, the other pair at posterior ¼, one at posterior end; tegula grey, mottled with dark brown basally, with one black dot before middle. Forewing pale grey mottled

with dark grey, basal ⅓ black along costal margin; with approx 65–77 black dots, viz., 5–7 subcostal dots from base to basal 2/5, 7–9 radial dots from basal 1/6 to distal ¼ below costal margin, 3–5 subradial dots from middle to distal 1/5 below costal margin, 3–5 supramedian dots from basal ⅓ to ⅔, 10–12 submedian dots from base to tornus, 10–12 subdorsal dots from near base to before tornus, line of 6–9 dots running between supramedian and submedian from base to 3/5, 16–20 dots in distal 1/5 between supramedian and submedian area; fold with large dark brown speckle at basal 3/8; fringe pale grey along costal margin,

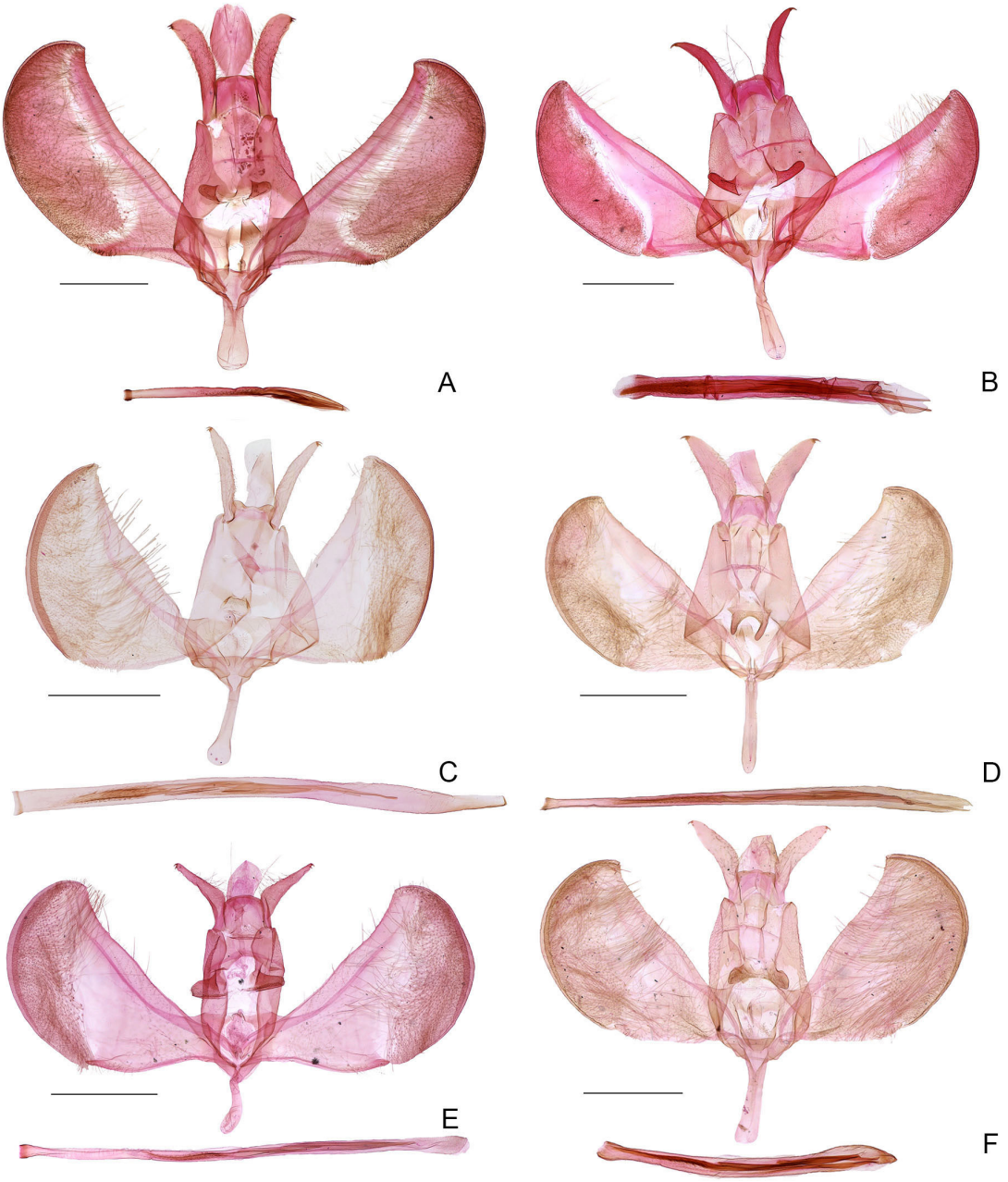

Fig. 8. Male genitalia of *Yponomeuta* spp. **A**. *Y. eurinellus* Zagulajev, 1969 (slide no. LHY22221). **B**. *Y. evonymella* (Linnaeus, 1758) (slide no. LHY21929). **C**. *Y. furvimaculata* Li sp. nov., holotype (slide no. LHY21992). **D**. *Y. griseatus* Moriuti, 1977 (slide no. LHY22014). **E**. *Y. heterochroma* Li sp. nov., holotype (slide no. LHY22341). **F**. *Y. kanaiella* (Matsumura, 1931) (slide no. LHY22140). Scale bars = 0.5 mm.

dark brown around apex, grey along termen and dorsum. Hindwing grey, darkened distally; fringe grey. Foreleg black, coxa and femur grey dorsally; midleg dark brown; hindleg pale grey, femur black basally.

Abdomen. Dark grey dorsally, pale grey ventrally; tuft pale grey.

Male genitalia (Fig. 11B). Uncus subquadrate, posterior margin straight. Socius rather broad, widened medially, and roundly arched on inner margin, with two apical thorns. Subscaphium slender, parallel-sided. Ventral plate of gnathos with paired processes parallel-sided in basal half and narrowed from middle to obtuse apex. Valva distinctly widened from base to basal ¼, thereafter subparallel to before obtuse apex, curved inward dorsoapically; costa straight, weakly sclerotised in basal half; transtilla elongate triangular; sclerotised belt extending from base of valva to beneath middle of costa; sacculus straight, with thorn-shaped distal sclerite directed upwards. Saccus 5/6 as long as sacculus, parallel-sided in posterior 3/5, bulbed in distal 2/5. Aedeagus 2.6 × as long as saccus; cornuti consisting of a stout basal spine about 5/8 as long as aedeagus and with spinules in their basal half, similar distal spine and two slender distal spines 3/8 as long as aedeagus.

Female genitalia (Fig. 16A). Papillae anales broad, setose. Intersegmental membrane between papillae anales and eighth abdominal segment short, about 0.7 × as long as papillae anales. Apophyses anteriores and apophyses posteriores equal in length. Lamella postvaginalis composed of paired, ovaloid-shaped processes, setose. Antrum 1/6 as long as ductus bursae, narrowed anteriorly. Ductus bursae 1.3 × as long as corpus bursae, widened toward corpus bursae; ductus seminalis arising from posterior ⅓ of ductus bursae. Corpus bursae subovate; signum absent.

Distribution

China (Shaanxi, Sichuan).

Yponomeuta sociatus Moriuti, 1972
Figs 6D, 11C, 16B

Yponomeuta sociatus Moriuti, 1972: 153. TL: Japan (Honshu, Aomori, Hirosaki). TD: OPU.

Diagnosis (adult; Fig. 6D)

Wingspan 20.5–26.0 mm. *Yponomeuta sociatus* can be distinguished in the male genitalia by the broad, semicircular valva, and the sacculus with a beak-shaped apex (Fig. 11C); and in the female genitalia by the rounded corpus bursae (Fig. 16B). It is similar to *Y. polystigmellus* (Felder & Felder, 1862), and the differences between them are stated in the diagnosis of the latter species.

Material examined

CHINA – **Gansu** • 1 ♂; Wen County, Bifenggou; 860 m a.s.l.; 11 Jul. 2005; H.L. Yu leg.; slide no. JQ08343; TJNHM. – **Guangxi** • 2 ♂♂; Hechi, Huanjiang County, Yangmeiao; 1180 m a.s.l.; 24 Jul. 2015; M.Q. Yang and G.E. Lee leg.; slide nos LHY21995, LHY22318; TJNHM. – **Guizhou** • 1 ♂; Xishui, Sanchahe Town; 28.48° N, 106.42° E; 804 m a.s.l.; 2 Jul. 2019; M.R. Xing *et al.* leg.; slide no. LHY22320♂; TJNHM • 2 ♀♀; same data as for preceding; slide nos LHY22373♀, LHY22374♀; TJNHM. – **Henan** • 15 ♂♂, 2 ♀♀; Nei Town, Xiaguan; 650 m a.s.l.; 12 Jul. 1998; H.H. Li leg.; slide nos YHL00136♂, YHL00137♂, YHL00138♂, WXC13154♂; TJNHM • 4 ♂♂; Nei Town, Baotianman; 1350 m a.s.l.; 13 Jul. 1998; H.H. Li leg.; slide no. YHL00139; TJNHM • 1 ♂, 3 ♀♀; Xixia, Huangshian; 890 m a.s.l.; 18–19 Jul. 1998; H.H. Li leg.; slide nos YHL00433♀, JQ10092♀; TJNHM • 1 ♂; Baotianman; 33.49° N, 111.88° E; 609 m a.s.l.; 26 Jun. 2023; M.J. Qi *et al.* leg.; slide no. LHY22146; TJNHM. – **Hubei** • 3 ♂♂; Xianning, Mt Jiugong; 27 Jul. 2011; Y.L. Xiao leg.; slide nos LHY22326 to

LHY22327, LHY22337; TJNHM • 2 ♂♂; Fang County, Duchuan Village; 31.89° N, 110.71° E; 793 m a.s.l.; 18–19 Jul. 2017; W.D. Qi *et al.* leg.; slide nos LHY21990, LHY22255; TJNHM • 1 ♂; Yizhang County, Xiangsikeng; 24.95° N, 112.98° E; 1326 m a.s.l.; 25 Jul. 2020; H. Sun *et al.* leg.; slide no. LHY21991; TJNHM. – **Jiangxi** • 1 ♂; Chongyi, Mt Qiyun, Shipotou; 1200 m a.s.l.; 30 Jul. 2007; J.S. Xu leg.; slide no. LHY21916; TJNHM. – **Shaanxi** • 1 ♂; Ningshan, Xunyangba; 1360 m a.s.l.; 1 Jul. 2007; H.L. Yu leg.; slide no. JQ08344; TJNHM • 1 ♂; Pingli, Niutoudian; 32.03° N, 109.33° E; 772 m

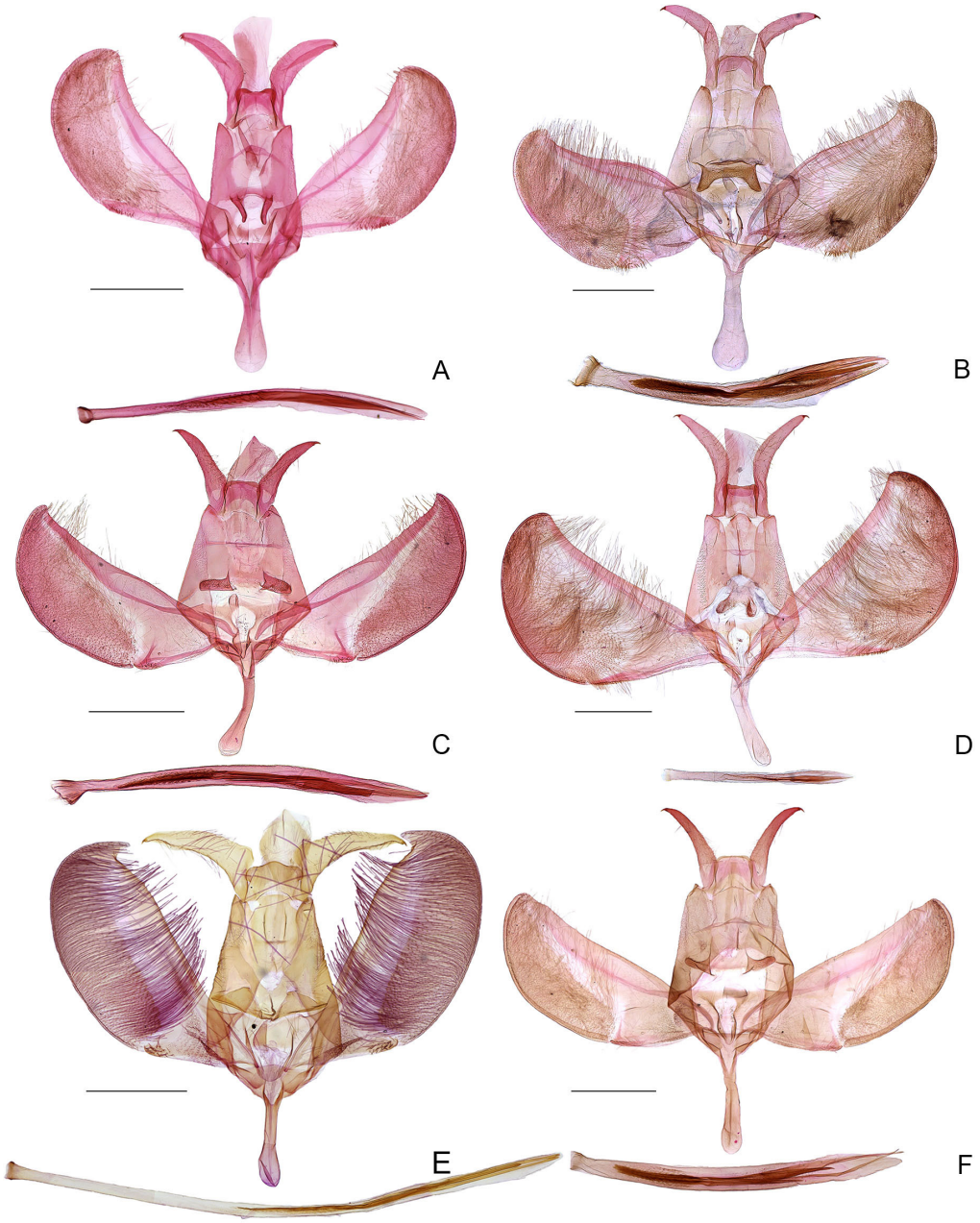

Fig. 9. Male genitalia of *Yponomeuta* spp. **A**. *Y. mayumivorella* (Matsumura, 1931) (slide no. LHY22246). **B**. *Y. menkeni* Gershenson & Ulenberg, 1998 (slide no. LHY22075). **C**. *Y. meridionalis* Gershenson, 1972 (slide no. LHY22300). **D**. *Y. minipunctatus* Gershenson & Ulenberg, 1998 (slide no. LHY22058). **E**. *Y. mintenna* (Povel, 1985) (slide no. YHL00337). **F**. *Y. orientalis* Zagulajev, 1969 (slide no. LHY22366). Scale bars = 0.5 mm.

a.s.l.; 1 Aug. 2016; W.X. Feng and W.T. Shi leg.; slide no. LHY22325; TJNHM. – **Zhejiang** • 1 ♂; Mt Jiulong, Yanping; 28.38° N, 118.89° E; 530 m a.s.l.; 4 Jul. 2013; A.H. Yin and X.C. Wang leg.; slide no. LHY21938; TJNHM.

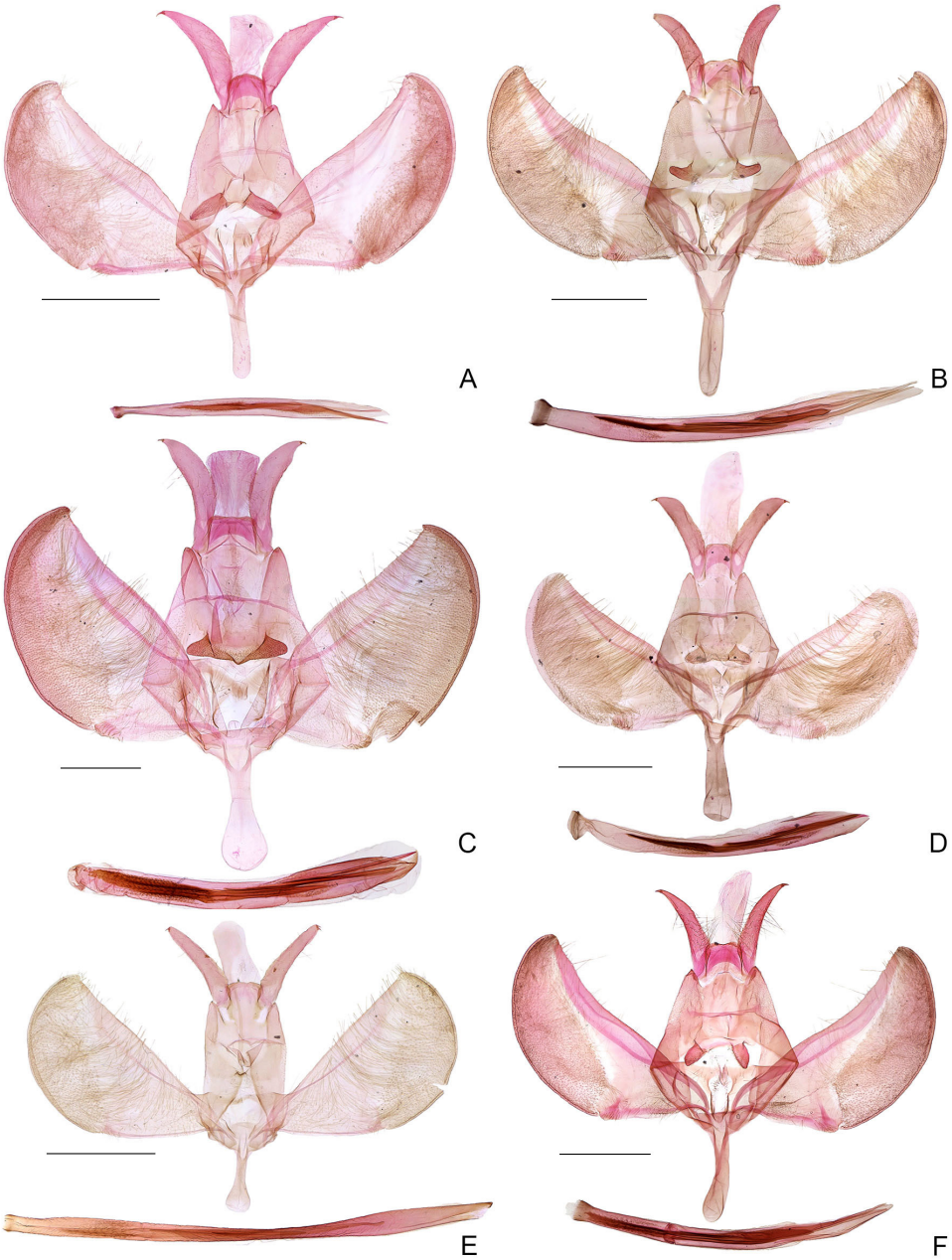

Fig. 10. Male genitalia of *Yponomeuta* spp. **A**. *Y. osakae* Moriuti, 1977 (slide no. LHY22109). **B**. *Y. padella* (Linnaeus, 1758) (slide no. LHY22306). **C**. *Y. polysticta* (Butler, 1879) (slide no. LHY22012). **D**. *Y. polystigmellus* (Felder & Felder, 1862) (slide no. LHY22346). **E**. *Y. quinquepunctata* Li sp. nov., holotype (slide no. LHY22176). **F**. *Y. refrigerata* (Meyrick, 1931), (slide no. LHY22340). Scale bars = 0.5 mm.

Host plants

Celastraceae: *Celastrus orbiculatus* Thunb., *Euonymus macropterus* Rupr. (Gershenson & Ulenberg 1998: 163).

Distribution

China (Gansu, Guangxi, Guizhou, Henan, Hubei, Jiangxi, Shaanxi, Sichuan, Zhejiang), Japan, Korea (Lewis & Sohn 2015: 141).

Yponomeuta spodocrossa (Meyrick, 1935)
Figs 6E, 11D, 16C

Hyponomeuta spodocrossa Meyrick, 1935a: 602. TL: Japan (Honshu, Miyagi, Yumoto). TD: NHMUK.

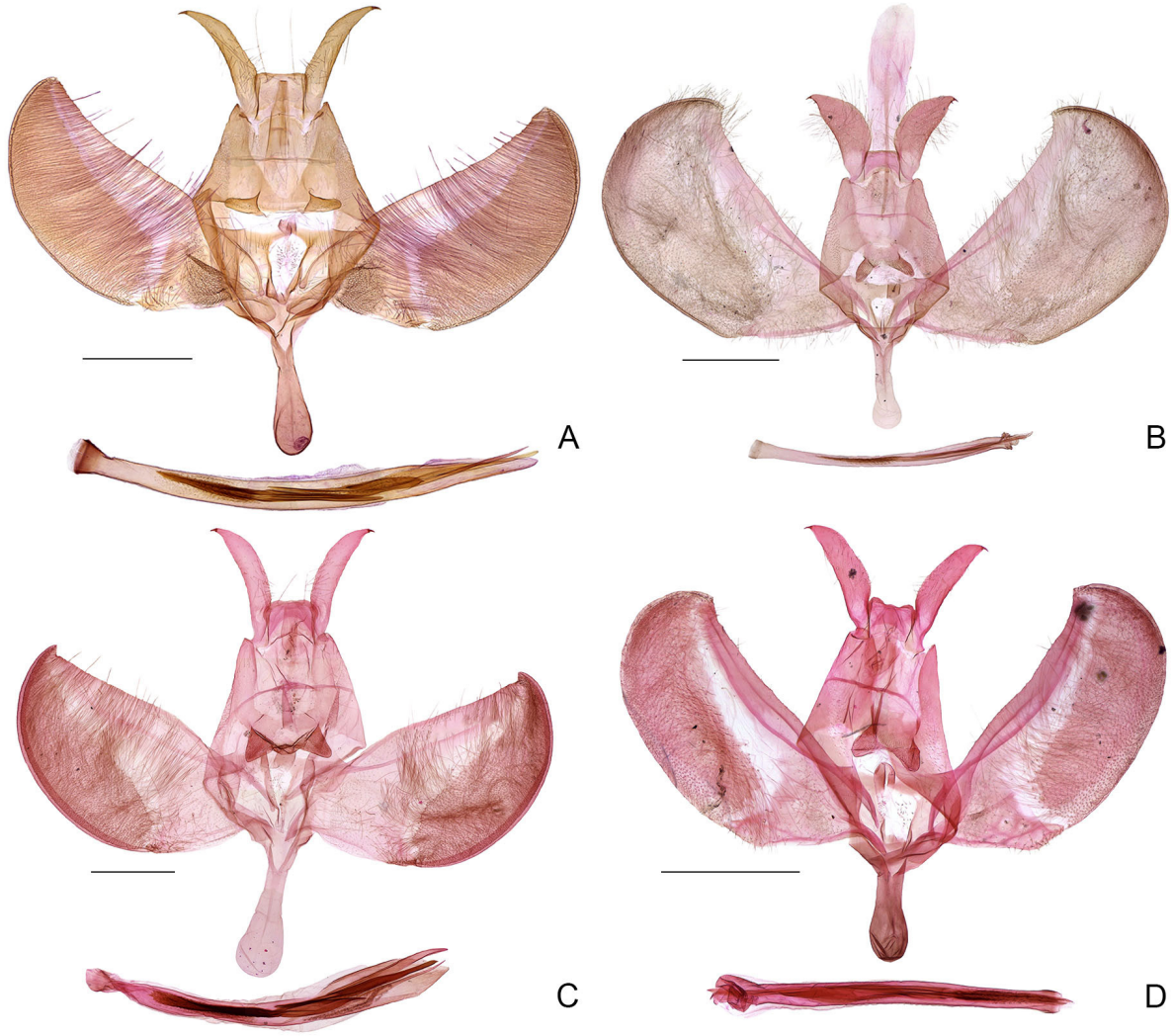

Fig. 11. Male genitalia of *Yponomeuta* spp. **A**. *Y. rorrella* (Hübner, 1796) (slide no. YHL00370). **B**. *Y. similicinefacta* Li sp. nov., holotype (slide no. LHY22343). **C**. *Y. sociatus* Moriuti, 1972 (slide no. LHY21916). **D**. *Y. spodocrossa* (Meyrick, 1935) (slide no. LHY22260). Scale bars = 0.5 mm.

Yponomeuta spodocrossa – Inoue 1954: 38.

Diagnosis (adult; Fig. 6E)

Wingspan 18.0–22.0 mm. *Yponomeuta spodocrossa* can be distinguished from other congeneric species in the male genitalia by the ventral plate of the gnathos with short, digitate processes, and the elongate valva with the obtuse apex (Fig. 11D). It is similar to *Y. catharotis* (Meyrick, 1935) and *Y. kanaiella* (Matsumura, 1931) in the male genitalia. The differences between them are stated in detail in the diagnosis of *Y. catharotis*.

Material examined

CHINA – **Gansu** • 7 ♂♂; Yuzhong, Mt Xinglong; 2130 m a.s.l.; 2 Aug. 1993; H.H. Li leg.; slide nos YHL00026, YHL00028, YHL00030; TJNHM. – **Henan** • 8 ♂♂; Luoyang, Mt Baiyun; 1560 m a.s.l.; 22–23 Jul. 2001; D.D. Zhang leg.; slide no. FXM06119♂; TJNHM • 1 ♀; same data as for preceding; slide no. JQ10027♀; TJNHM • 2 ♂♂; Dengfeng, Mt Song, Shaolin Temple; 700 m a.s.l.; 15–17 Jul. 2002; X.P. Wang leg.; slide no. LHY21917; TJNHM. – **Hubei** • 5 ♂♂; Shennongjia; 1800 m a.s.l.; 8 Jul. 2009; M. Wang and Y. Long leg.; slide no. JQ10016♂; TJNHM • 5 ♀♀; same data as for preceding; slide no. JQ10017♀; TJNHM • 1 ♂; Yingshan County, Mt Wu; 31.11° N, 115.80° E; 794 m a.s.l.; 1 Jul. 2022; J.X. Wang and P. Yu leg.; slide no. LHY22171; TJNHM. – **Ningxia** • 4 ♂♂; Mt Liupan; 1700 m a.s.l.; 20 Jun. 2008; S.L. Hao and Z.W. Zhang leg.; slide no. JQ10018♂; TJNHM • 4 ♀♀; same data as for preceding; slide no. JQ10019♀; TJNHM. – **Shaanxi** • 7 ♂♂; Yan'an, Nanniwan; 36.26° N, 109.67° E; 1157 m a.s.l.; 17 Jun. 2019; S. Yu leg.; slide nos LHY22078♂, LHY22079♂; TJNHM • 10 ♀♀; same data as for preceding; slide no. LHY22080♀; TJNHM • 9 ♂♂, 16 ♀♀; Fu County, Ziwuling Natural Reserve, Huaishu Village; 35.86° N, 108.72° E; 1150 m a.s.l.; 20–23 Jun. 2019; S. Yu leg.; slide nos LHY22086♂, LHY22087♂; TJNHM • 2 ♂♂, 3 ♀♀; Huangling County, Diantou Town; 35.64° N, 109.08° E; 921 m a.s.l.; 28 Jun. 2019; S. Yu leg.; slide nos LHY22093♂, LHY22095♂; TJNHM • 4 ♂♂, 3 ♀♀; Huangling County, Duluowei Village; 35.64° N, 108.89° E; 1021 m a.s.l.; 31 Jun. 2019; S. Yu leg.; slide no. LHY22107♂; TJNHM • 11 ♂♂; Fu County, Ziwuling Natural Reserve, Chenjiahe; 35.52° N, 108.39° E; 1216 m a.s.l.; 3–7 Aug. 2019; S. Yu leg.; slide nos LHY22108♂, LHY22111♂, LHY22115♂, LHY22119♂; TJNHM • 12 ♀♀; same data as for preceding; slide no. LHY22120♀; TJNHM. – **Shanxi** • 4 ♂♂, 3 ♀♀; Linfen, Yi City; 35.45° N, 111.92° E; 1202 m a.s.l.; 24–26 Jul. 2013; S.L. Hao and M.J. Li leg.; slide no. LHY21876♂; TJNHM • 1 ♂, 1 ♀; Jiexiu, Mt Mian; 36.87° N, 111.99° E; 1370 m a.s.l.; 15–21 Jul. 2014; T.T. Liu *et al.* leg.; slide no. LHY21883♂; TJNHM. – **Sichuan** • 4 ♀♀; Wanglang, Qikeshu; 32.94° N, 104.13° E; 2446 m a.s.l.; 22–23 Aug. 2016; Y. Fei leg.; slide no. LHY21998♀; TJNHM • 1 ♂; same data as for preceding; slide no. LHY21999♂; TJNHM • 3 ♂♂, 1 ♀; Wanglang, Muyangchang; 32.97° N, 104.10° E; 2577 m a.s.l.; 19 Jul. 2017; M.J. Qi and X.F. Yang leg.; slide no. LHY22000♂; TJNHM • 3 ♂♂, 4 ♀♀; Wanglang, Baozigou; 32.91° N, 104.16° E; 2369 m a.s.l.; 20 Jul. 2017; M.J. Qi and X.F. Yang leg.; slide nos LHY22001♂, LHY22002♂; TJNHM • 6 ♂♂, 4 ♀♀; Wanglang Scenic Spot; 32.89° N, 104.16° E; 2377 m a.s.l.; 22–24 Jul. 2017; M.J. Qi and X.F. Yang leg.; slide nos LJ17350♂, LHY22008♂, LHY22009♂, LHY22260♂; TJNHM.

Host plants

Celastraceae: *Euonymus hamiltonianus* ssp. *sieboldianus* (Blume) H. Hara., *E. macropterus* Rupr. (Moriuti 1977: 165).

Distribution

China (Gansu, Henan, Hubei, Ningxia, Shaanxi, Shanxi, Sichuan), Japan (Meyrick 1935a: 603).

Yponomeuta tokyonella (Matsumura, 1931)
Figs 6F, 12A, 16D

Hyponomeuta tokyonella Matsumura, 1931: 1098. TL: Japan (Honshu, Tokyo). TD: EIHU.

Yponomeuta tokyonella – Inoue 1954: 37.

Diagnosis (adult; Fig. 6F)

Wingspan 28.0–33.5 mm. *Yponomeuta tokyonella* can be distinguished from other congeneric species in the male genitalia by the ventral plate of the gnathos with elongate triangular processes, and the sacculus with a tuft of bristles distally (Fig. 12A); and in the female genitalia by the lamella postvaginalis shallowly concave posteromedially (Fig. 16D). It is similar to *Y. polysticta* (Butler, 1879), and the differences between them are stated in the diagnosis of the latter species.

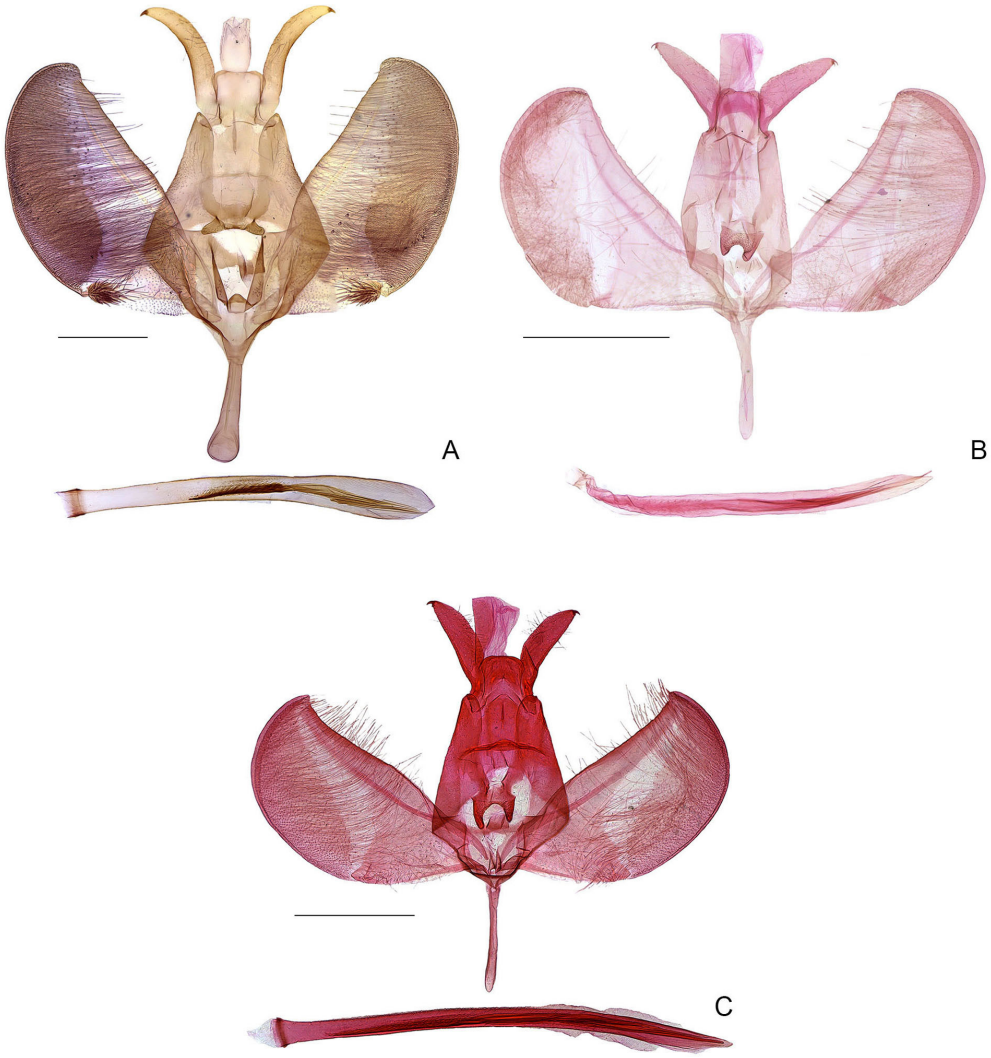

Fig. 12. Male genitalia of *Yponomeuta* spp. **A**. *Y. tokyonella* (Matsumura, 1931) (slide no. YHL00133). **B**. *Y. vigintipunctata* (Retzius, 1783) (slide no. LHY22169). **C**. *Y. yanagawana* (Matsumura, 1931) (slide no. LJ17406). Scale bars = 0.5 mm.

Material examined

CHINA – **Anhui** • 1 ♀; Mt Tianzhu, Fengjing Village; 10 Aug. 2004; J.S. Xu and J.L. Zhang leg.; TJNHM • 1 ♀; Si County, Xiaoliang Town; 15 Aug. 2004; J.S. Xu leg.; TJNHM. – **Hebei** • 1 ♀; Chengde; 350 m a.s.l.; 12 Jul. 2001; Y.L. Du and S.L. Hao leg.; TJNHM. – **Heilongjiang** • 2 ♂♂; Harbin; 150 m a.s.l.; 23 Jul. 1997; H.H. Li leg.; slide no. YHL00133; TJNHM. – **Henan** • 1 ♂; Tongbai, Shuiliandong; 300 m a.s.l.; 26 May 2000; H.L. Yu leg.; slide no. YHL00336; TJNHM. – **Inner Mongolia** • 1 ♀; Jiaoyu Forestry Centre; 1075 m a.s.l.; 15 Jul. 2006; X. Zhang and Z.W. Zhang leg.; TJNHM. – **Liaoning** • 4 ♂♂, 3 ♀♀; Shenyang, Beiling; 2 Jun. 1985; J.F. Liu and S.F. Sun leg.; slide no. YHL00145♂; TJNHM • 3 ♂♂; Faku, Wangyeling; 27–29 Jul. 2006; Y.P. Wang leg.; slide no. JQ10032; TJNHM. – **Ningxia** • 1 ♂; Mt Liupan; 27 Jul. 1983; Ningxia Agricultural Academy leg.; slide no. YHL00437; TJNHM. – **Shaanxi** • 3 ♂♂, 1 ♀; Wugong; 10 Jul. 1965; Y. Zhou leg.; slide nos YHL00436♂, YHL00448♂; TJNHM. – **Tianjin** • 3 ♂♂; Nankai University; 13–15 May 2000; Y.R. Wang leg.; slide no. YHL00372♂; TJNHM • 7 ♀♀; same data as for preceding; slide no. YHL00439♀; TJNHM.

Host plants

Celastraceae: *Euonymus hamiltonianus* ssp. *sieboldianus* (Blume) H. Hara (Moriuti 1977: 168).

Distribution

China (Anhui, Beijing, Hebei, Heilongjiang, Henan, Inner Mongolia, Jiangsu, Jiangxi, Liaoning, Ningxia, Shaanxi, Shanghai, Tianjin), Japan, Korea (Lewis & Sohn 2015: 143).

Yponomeuta vigintipunctata (Retzius, 1783)
Figs 6G, 12B, 16E

Phalaena vigintipunctata Retzius, 1783: 52. Type not found.
Yponomeuta sedella Treitschke, 1832: 223. TL: Germany (Meißen Mts). TD: TMB.
Yponomeuta apicalis Matsumura, 1931: 1097. TL: Japan (Sapporo). TD: EIHU.
Hyponomeuta elementaris Meyrick, 1931b: 172. TL: Japan (Gifu). TD: NHMUK.

Hyponomeuta vigintipunctatus – Zeller 1844: 210.
Yponomeuta vigintipunctatus – Meyrick 1895: 696.

Diagnosis (adult; Fig. 6G)

Wingspan 13.5–19.0 mm. *Yponomeuta vigintipunctata* can be distinguished from the congeneric species by the forewing without the series of the supramedian dots, and in the male genitalia by the ventral plate of the gnathos with short processes directed ventrad (Fig. 12B); in the female genitalia by the short antrum almost uniformly wide (Fig. 16E). It is similar to *Y. griseatus* Moriuti, 1977 and *Y. yanagawana* (Matsumura, 1931) while sharing some characters in the male genitalia. The diagnostic differences between these species mentioned above are stated in the diagnosis of *Y. griseatus*.

Material examined

CHINA – **Anhui** • 1 ♂; Yuexi; 25 Jul. 1996; X.F. Hu leg.; slide no. YHL00423; TJNHM. – **Gansu** • 1 ♂; Tianshui, Dangchuan; 9 Aug. 1988; X.Y. Wu leg.; TJNHM. – **Hebei** • 3 ♂♂; Xinglong County, Mt Wuling; 800 m a.s.l.; 28 Jul. 2009; A.H. Zhang *et al.* leg.; slide no. LHY21841♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY21842♀; TJNHM • 8 ♂♂, 3 ♀♀; Xinglong County, Mt Wuling; 800 m a.s.l.; 14 Jul. 2010; A.H. Zhang *et al.* leg.; slide no. LHY21843♂; TJNHM • 1 ♂; Saihanba National Forest Park; 42.40° N, 117.25° E; 1504 m a.s.l.; 9 Jul. 2016; S.N. Zhao and S.R. Li leg.; slide no. LHY21853; TJNHM. – **Heilongjiang** • 1 ♂; Wudalianchi, Mt Xiaogu; 270 m a.s.l.; 30 Jul. 1997;

H.H. Li leg.; slide no. YHL00134; TJNHM • 1 ♂; Daxinganling, Tahe; 52.37° N, 124.88° E; 369 m a.s.l.; 28 Jul. 2016; M.J. Qi *et al.* leg.; slide no. LHY21913; TJNHM. – **Henan** • 2 ♂♂, 1 ♀; Luoshan County, Mt Ling; 350 m a.s.l.; 21–22 May 2000; H.L. Yu leg.; TJNHM • 1 ♂, 1 ♀; Tongbai, Shuiliandong; 300 m a.s.l.; 24–26 May 2000; H.L. Yu leg.; TJNHM. – **Hubei** • 1 ♂; Luotian, Jiuzihe Town, Qingtaiguan; 31.20° N, 115.70° E; 684 m a.s.l.; 21 Aug. 2021; Y.L. Xiao *et al.* leg.; slide no. LHY22169; TJNHM. – **Tianjin** • 3 ♂♂; Mt Baxian, Heishuihe; 540 m a.s.l.; 2 Jun. 2010; H.H. Li *et al.* leg.; slide no. LHY21836; TJNHM • 1 ♂; Mt Baxian, Heishuihe; 600 m a.s.l.; 29 Aug. 2010; Y.H. Mou and S.R. Liu leg.; slide no. LHY21837; TJNHM. – **Zhejiang** • 1 ♂; Mt Tianmu; 500 m a.s.l.; 16 Aug. 1999; H.H. Li *et al.* leg.; slide no. YHL00060; TJNHM • 5 ♂♂; Taishun, Wuyanling; 680 m a.s.l.; 28 Jul. 2005; Y.L. Xiao leg.; slide no. JQ08332♂; TJNHM • 3 ♀♀; same data as for precding; slide no. JQ09047♀; TJNHM • 2 ♂♂;

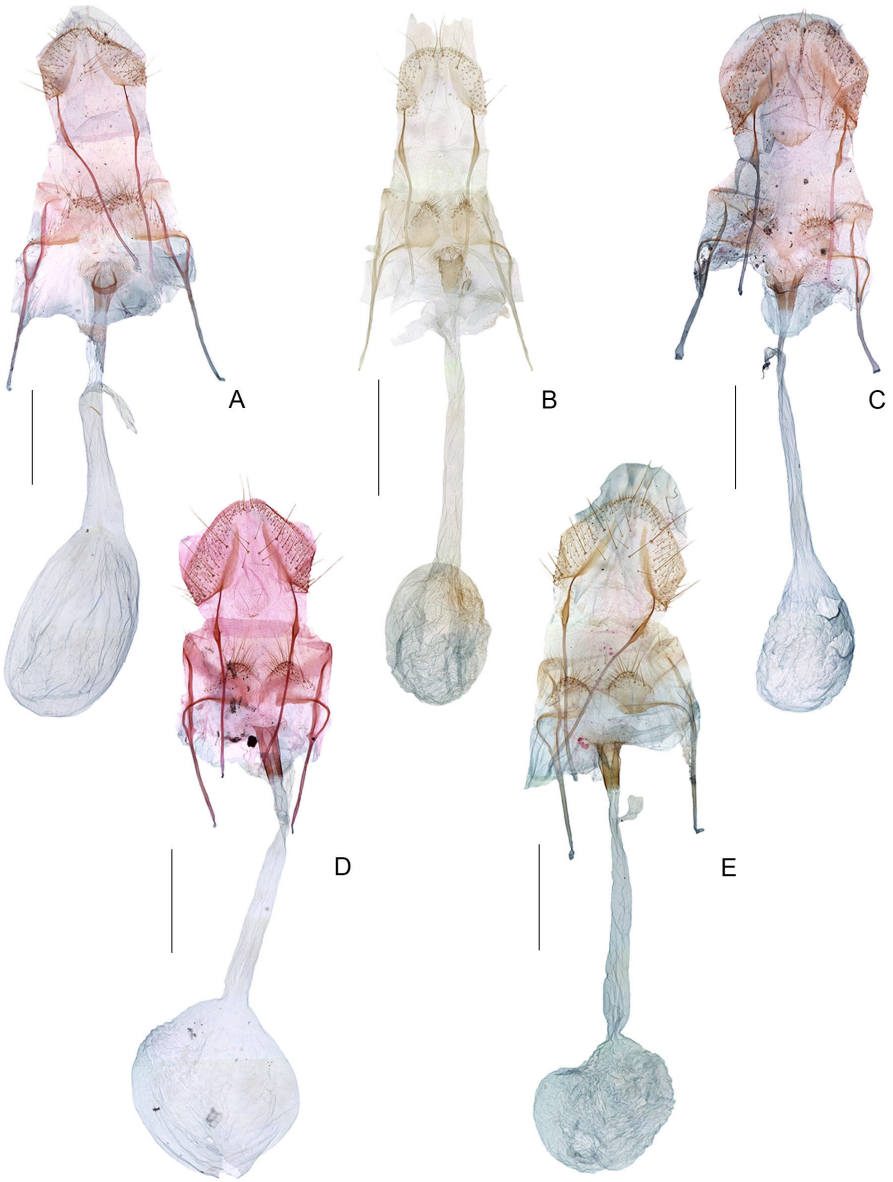

Fig. 13. Female genitalia of *Yponomeuta* spp. **A**. *Y. anatolica* (Stringer, 1930) (slide no. LHY22241). **B**. *Y. bipunctella* (Matsumura, 1931) (slide no. JQ08325). **C**. *Y. catharotis* (Meyrick, 1935) (slide no. LHY22136). **D**. *Y. cinefacta* (Meyrick, 1935) (slide no. LHY21894). **E**. *Y. eurinellus* Zagulajev, 1969 (slide no. LHY22142). Scale bars = 0.5 mm.

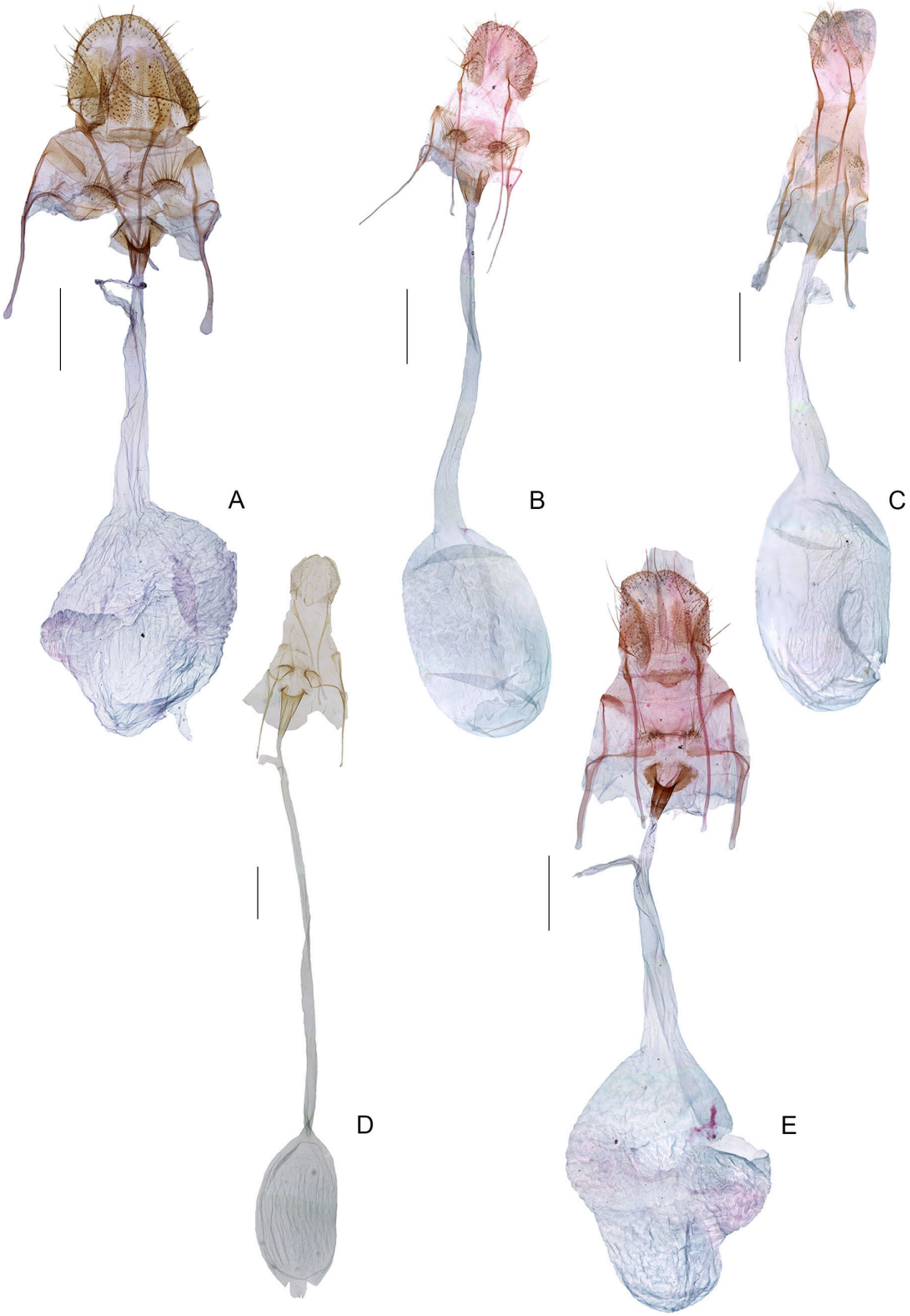

Fig. 14. Female genitalia of *Yponomeuta* spp. **A**. *Y. evonymella* (Linnaeus, 1758) (slide no. LHY21928). **B**. *Y. griseatus* Moriuti, 1977 (slide no. LHY22026). **C**. *Y. kanaiella* (Matsumura, 1931) (slide no. LHY22232). **D**. *Y. mintenna* (Povel, 1985) (slide no. JQ10059). **E**. *Y. orientalis* Zagulajev, 1969 (slide no. LHY22357). Scale bars = 0.5 mm.

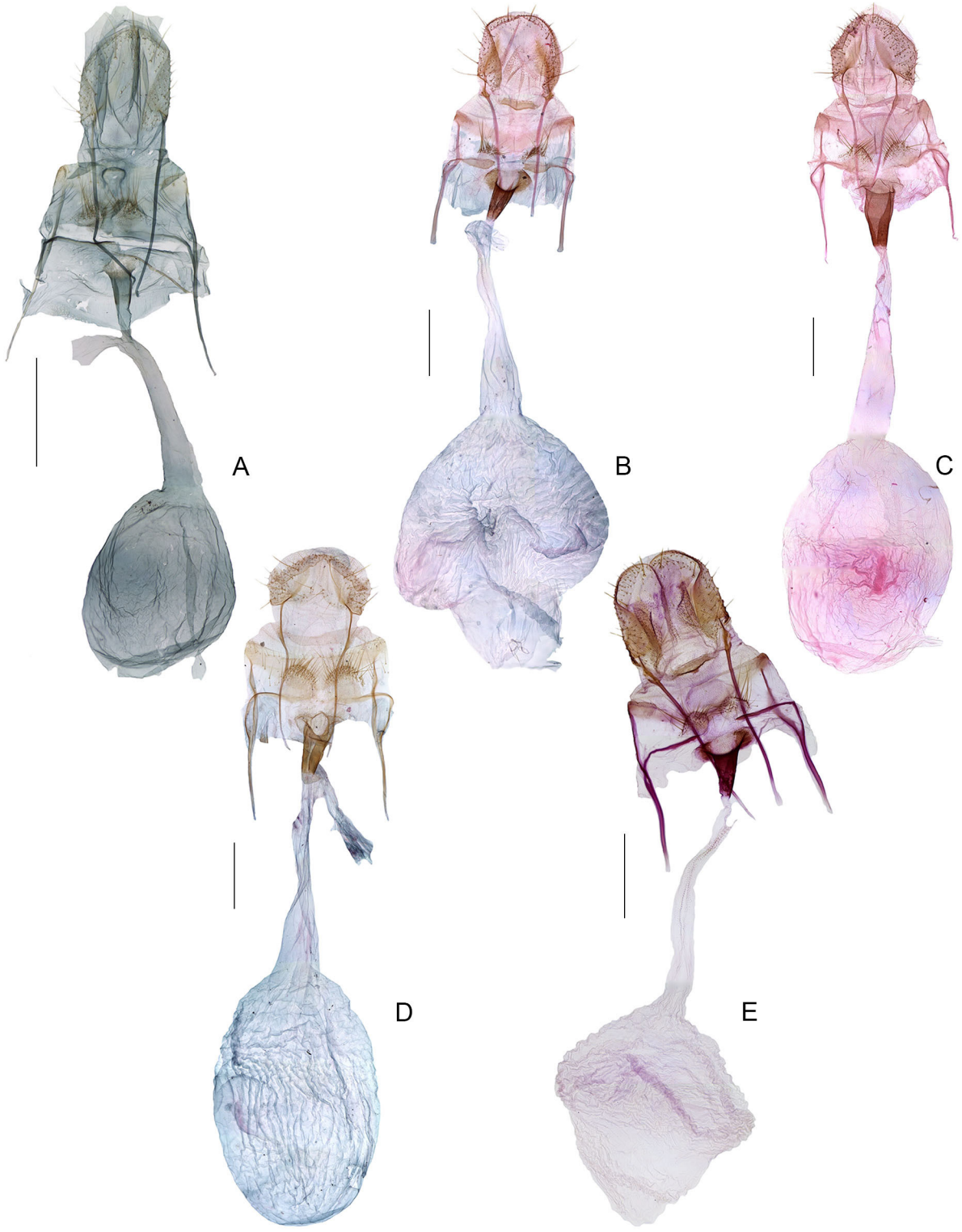

Fig. 15. Female genitalia of *Yponomeuta* spp. **A**. *Y. osakae* Moriuti, 1977 (slide no. JQ10087). **B**. *Y. padella* (Linnaeus, 1758) (slide no. LHY22307). **C**. *Y. polysticta* (Butler, 1879) (slide no. LHY21777). **D**. *Y. polystigmellus* (Felder & Felder, 1862) (slide no. LHY22148). **E**. *Y. rorrella* (Hübner, 1796) (slide no. JQ08341). Scale bars = 0.5 mm.

Mt Tianmu, Tianmu Village; 30.31° N, 119.44° E; 335 m a.s.l.; 1 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21941♂; TJNHM • 1 ♀; same data as for preceding; slide no. LHY21942♀; TJNHM • 2 ♂♂; Mt Tianmu, Laoan; 30.33° N, 119.40° E; 555 m a.s.l.; 3–4 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21947; TJNHM • 1 ♂; Mt Tianmu, Sanmuping; 30.37° N, 119.43° E; 789 m a.s.l.; 13 Jul. 2014; A.H. Yin *et al.* leg.; slide no. LHY21950; TJNHM • 5 ♂♂; Mt Tianmu, Qianjiangyuan; 30.39° N, 119.49° E; 866 m a.s.l.; 12 Aug. 2014; A.H. Yin *et al.* leg.; slide nos LHY21799, LHY21968; TJNHM • 1 ♂; Mt Longxu, Mt Longxu Village; 30.40° N, 119.54° E; 778 m a.s.l.; 20 Aug. 2014; A.H. Yin *et al.* leg.; slide no. LHY21798; TJNHM • 1 ♀; Lin'an, Mt Longtang; 30.10° N, 118.90° E; 550 m a.s.l.; 14 May 2017; S.N. Qian and G.E. Lee leg.; slide no. LHY21975; TJNHM.

Host plants

Crassulaceae: *Sedum album* L., *S. erythrostictum* Miq., *S. maximum* (L.) Suter, *S. spectabile* Boreau, *S. taqueti* Pragener, *S. telephium* L. (Lewis & Sohn 2015: 141).

Distribution

China (Anhui, Gansu, Hebei, Heilongjiang, Henan, Hubei, Shanghai, Tianjin, Zhejiang), Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, UK, [fomer]Yugoslavia (Lewis & Sohn 2015: 141).

Remarks

The specific name *viginti punctata* Retzius, 1783 used to be invalid according to Article 11c of the International Commission of Zoological Nomenclature in 1985 (not binominal). But according to the decision of the International Commission of Zoological Nomenclature (Opinion 2333, Case 3548) in 2014, the name is recognised as consistently binomial.

Yponomeuta yanagawana (Matsumura, 1931)
Figs 6H, 12C

Hyponomeuta yanagawana Matsumura, 1931: 1098. TL: Japan (Fukuoka, Yanagawa). TD: EIHU.
Hyponomeuta mochlocrossa Meyrick, 1935a: 602. TL: Japan (Tokyo). TD: NHMUK.

Yponomeuta mochlocrossa – Inoue 1954: 37.
Yponomeuta yanagawana – Inoue 1954: 38.

Diagnosis (adult; Fig. 6H)

Wingspan 17.0 mm. *Yponomeuta yanagawana* can be distinguished from its congeneric species in the male genitalia by possessing the gnathos with a broad ventral plate that bears elongate processes, and the saccus, which is rather slender, parallel-sided (Fig. 12C). It is similar to *Y. griseatus* Moriuti, 1977 and *Y. vigintipunctata* (Retzius, 1783) in the male genitalia, and the differences between these related species by micromorphology of male genitalia are stated in the diagnosis of *Y. griseatus*.

Material examined

CHINA – **Zhejiang** • 1 ♂; Mt Siming; 29.73° N, 121.08° E; 843 m a.s.l.; 30 Jun. 2017; Z.G. Zhang *et al.* leg.; slide no. LJ17406; TJNHM.

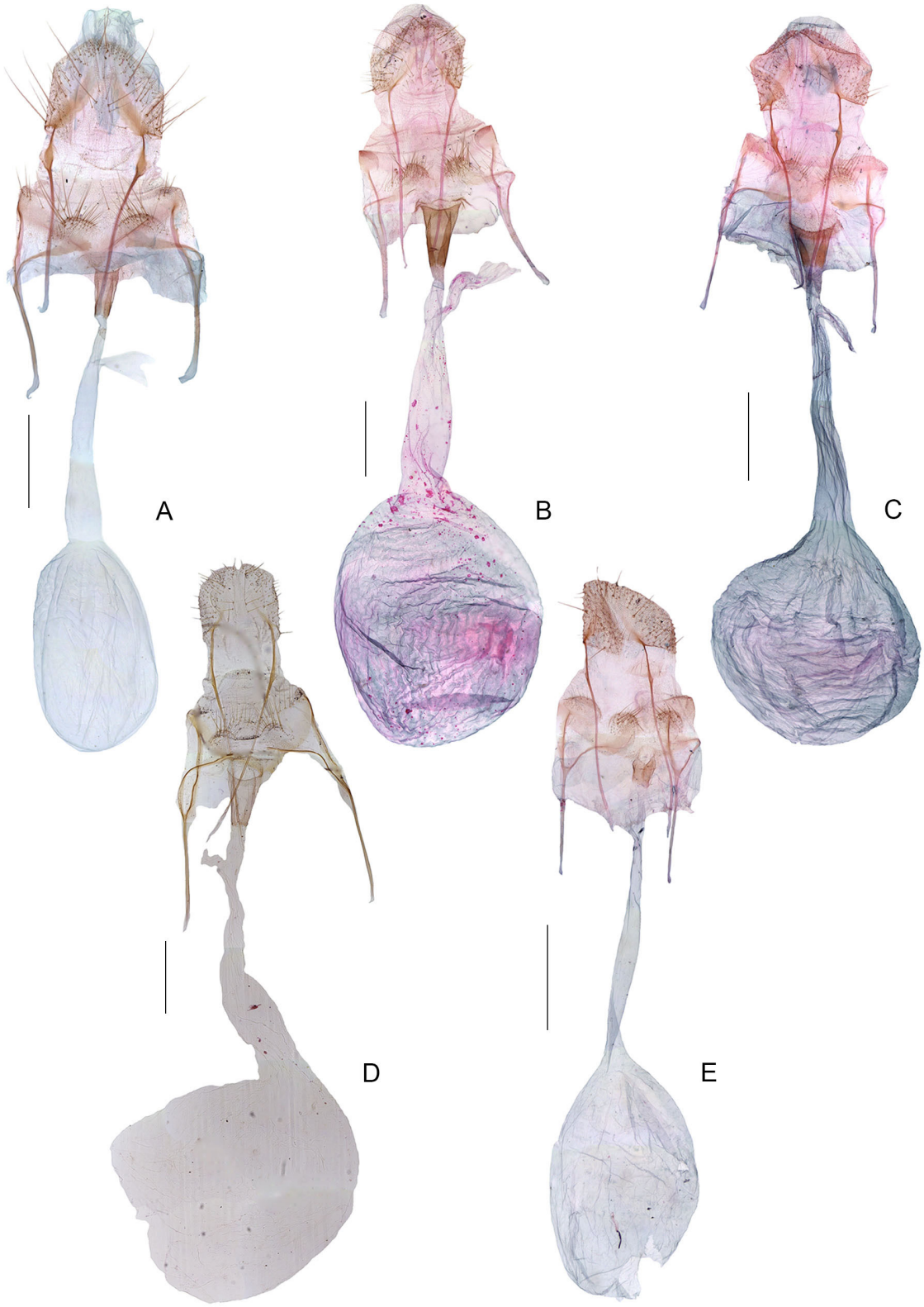

Fig. 16. Female genitalia of *Yponomeuta* spp. **A**. *Y. similicinefacta* Li sp. nov., paratype (slide no. LHY22369). **B**. *Y. sociatus* Moriuti, 1972 (slide no. LHY22374). **C**. *Y. spodocrossa* (Meyrick, 1935) (slide no. LHY22080). **D**. *Y. tokyonella* (Matsumura, 1931) (slide no. YHL00439). **E**. *Y. vigintipunctata* (Retzius, 1783) (slide no. LHY21975). Scale bars = 0.5 mm.

Host plants

Celastraceae: *Euonymus alatus* (Thunb.) Siebold, *E. japonicus* Thunb. (Gershenson & Ulenberg 1998: 168).

Distribution

China (Zhejiang), new record, Japan, Korea (Lewis & Sohn 2015: 143).

Remark

This species is newly recorded for China.

Yponomeuta zebra Sohn & Wu, 2010

Yponomeuta zebra Sohn & Wu in Sohn, Wu & Han, 2010: 2807. TL: China (Zhangmukoan, Xizang). TD: IZCAS.

Distribution

China (Xizang), Nepal (Lewis & Sohn 2015: 144).

Remarks

Sohn, Wu & Han (2010) described this species based on a female specimen from China. Currently, we do not have this species in our collection.

List of the genus Teinoptila Sauber, 1902

Teinoptila anistatica (Meyrick, 1931)

Hyponomeuta anistatica Meyrick, 1931a: 87. TL: Indonesia (Java). TD: NHMUK.

Teinoptila anistatica – Moriuti 1977: 205.

Distribution

China (Guizhou, Yunnan), Indonesia (Java) (Lewis & Sohn 2015: 112).

Teinoptila bolidias (Meyrick, 1913)

Hyponomeuta bolidias Meyrick, 1913: 137. TL: Thailand (Muoklek, Saraburi Prov.). TD: NHMUK.
Choutinea shaanxiensis Huang, 1982: 269. TL: China (Ziyang, Shaanxi Prov.). TD: NWAFU.

Yponomeuta bolidias – Friese 1962: 309.
Teinoptila bolidias – Moriuti 1977: 205.

Distribution

China (Gansu, Hubei, Hunan, Shaanxi, Yunnan, Zhejiang), Malaysia, Thailand (Lewis & Sohn 2015: 113).

Teinoptila brunnescens (Moore, [1888])

Hyponomeuta brunnescens Moore, [1888]: 282. TL: India (Darjeeling). TD: MFN.

Teinoptila brunnescens – Moriuti 1977: 205. — Gershenson & Ulenberg 1998: 97.
Yponomeuta brunnescens – Robinson *et al.* 1995: 179.

Distribution

Bhutan, China (Yunnan), India, Nepal (Lewis & Sohn 2015: 113).

Teinoptila calcarata (Meyrick, 1924)

Hyponomeuta calcarata Meyrick, 1924: 117. TL: Bermuda Island. TD: NHMUK.

Teinoptila calcarata – Moriuti 1977: 205.

Distribution

Bermuda Island, USA (Florida) (Sohn 2021: 656).

Teinoptila clavata Jin, Wang & Li, 2009

Teinoptila clavata Jin, Wang & Li, 2009: 49. TL: China (Yongfu, Guangxi). TD: TJNHM.

Distribution

China (Guangxi) (Jin *et al.* 2009: 49).

Teinoptila corpuscularis (Meyrick, 1907)

Yponomeuta corpuscularis Meyrick, 1907b: 153. TL: India (Tamil Nadu). TD: NHMUK.

Hyponomeuta corpuscularis – Meyrick 1914: 19.
Teinoptila corpuscularis – Moriuti 1977: 205.

Distribution

India (Tamil Nadu), Sri Lanka (Matala) (Lewis & Sohn 2015: 114).

Teinoptila gnophera (Agassiz, 2019) comb. nov.

Yponomeuta gnophera Agassiz, 2019: 25. TL: Madagascar (Betroka). TD: NHMUK.

Distribution

Madagascar (Betroka) (Agassiz 2019: 25).

Teinoptila griseomacula (Agassiz, 2019) comb. nov.

Yponomeuta griseomacula Agassiz, 2019: 10. TL: Malawi (Nyasaland). TD: NHMUK.

Distribution

Malawi, Zimbabwe (Agassiz 2019: 10).

Teinoptila guttella Moriuti, 1977

Teinoptila guttella Moriuti, 1977: 206. TL: China (Taiwan). TD: OPU.

Distribution

China (Taiwan), Ryukyu Islands (Lewis & Sohn 2015: 114).

Teinoptila horologa (Meyrick, 1935) comb. nov.

Hyponomeuta horologa Meyrick, 1935a: 556. TL: D.R. Congo (Kivu, Lulenda). TD: MRAC.

Yponomeuta horologus – Gershenson & Ulenberg 1998: 132.

Distribution

D.R. Congo, Rwanda, Uganda (Agassiz 2019: 25).

Teinoptila ingens Gershenson & Ulenberg, 1998 comb. rev.

Teinoptila ingens Gershenson & Ulenberg, 1998: 100. TL: Burundi (Kitega). TD: MRAC.

Yponomeuta ingens – Agassiz 2019: 7.

Distribution

Burundi, Tanzania (Agassiz 2019: 7).

Teinoptila interruptella Sauber, 1902

Teinoptila interruptella Sauber, 1902: 701. TL: Philippines (Luzon, Guimaras). TD: NMS.

Yponomeuta interruptella – Meyrick 1907a: 77.
Hyponomeuta interruptella – Meyrick 1914: 19.
Teinoptila interruptella – Moriuti 1977: 205.

Distribution

Australia (Queensland), Indonesia (Tukangbesi Island), New Guinea, Philippines (Luzon) (Lewis & Sohn 2015: 114).

Teinoptila ioni (Agassiz, 2019) comb. nov.

Yponomeuta ioni Agassiz, 2019: 10. TL: Ethiopia. TD: DJLA.

Distribution

Ethiopia (Agassiz 2019: 10).

Teinoptila malagasella (Agassiz, 2019) comb. nov.

Yponomeuta malagasella Agassiz, 2019: 11. TL: Madagascar (Diego Suarez). TD: NHMUK.

Distribution

Madagascar (Agassiz 2019: 11).

Teinoptila melanephos (Agassiz, 2019) comb. nov.

Yponomeuta melanephos Agassiz, 2019: 8. TL: Malawi (Nkhorango Mzuzu, Mzimba). TD: TMSA.

Distribution

Malawi (Agassiz 2019: 8).

Teinoptila nephella (Agassiz, 2019) comb. nov.

Yponomeuta nephella Agassiz, 2019: 9. TL: Ruanda (Lake Tshohoa). TD: NHMUK.

Distribution

Angola, Ivory Coast, Rwanda (Agassiz 2019: 9).

Teinoptila onyxella (Agassiz, 2019) comb. nov.

Yponomeuta onyxella Agassiz, 2019: 26. TL: Kenya (Castle Forest Lodge). TD: DJLA.

Distribution

Kenya, Uganda (Agassiz 2019: 26).

Teinoptila oromiensis (Agassiz, 2019) comb. nov.

Yponomeuta oromiensis Agassiz, 2019: 27. TL: Ethiopia (Oromia). TD: DJLA.

Distribution

Ethiopia (Agassiz 2019: 27).

Teinoptila pseudostrigillatus (Gershenson & Ulenberg, 1998) comb. nov.

Yponomeuta pseudostrigillatus Gershenson & Ulenberg, 1998: 157. TL: Cameroon (Buea). TD: MRAC.

Distribution

Cameroon, D.R. Congo (Agassiz 2019: 25).

Teinoptila puncticornis (Walsingham, 1891) comb. rev.

Hyponomeuta puncticornis Walsingham, 1891: 90. TL: Mozambique (Delagoa Bay). TD: NHMUK.

Teinoptila puncticornis – Gershenson & Ulenberg 1998: 101.
Yponomeuta puncticornis – Agassiz 2019: 7.

Distribution

Gambia, Malawi, Mozambique, Nigeria, Republic of South Africa, Senegal, Swaziland, Tanzania, Uganda, Yemen (Agassiz 2019: 8).

Teinoptila staudei (Agassiz, 2019) comb. nov.

Yponomeuta staudei Agassiz, 2019: 9. TL: Malawi (Mzimba). TD: TMSA.

Distribution

Malawi, Republic of South Africa, Zimbabwe (Agassiz 2019: 9).

Teinoptila taprobanae Sohn, 2021

Teinoptila taprobanae Sohn, 2021: 654. TL: Sri Lanka (near Wilpattu, Hunuwilacama, Anuradhapura). TD: USNM.

Distribution

Sri Lanka (Sohn 2021: 656).

Discussion

Arduino & Bullini (1994) found that some *Yponomeuta* specimens from Japan were misidentified by Moriuti (1977) as *Y. malinellus* Zeller, 1838 that actually represented a new species and named it *Y. okuellus* Arduino & Bullini 1994. Later, Gershenson & Ulenberg (1998) proposed that *Y. okuellus* was a synonym of *Y. orientalis* Zagulajev, 1969. Sohn *et al.* (2010) proposed that all records of *Y. malinellus* Zeller, 1838 and *Y. padella* (Linnaeus, 1758) from East Asia were confused with *Y. orientalis*, and they removed *Y. malinellus* Zeller, 1838 and *Y. padella* (Linnaeus, 1758) from the list of Chinese *Yponomeuta*, and added *Y. orientalis* to the list. In this study, we recognised both *Y. orientalis* and *Y. padella* in China, and hence confirmed their distribution in China. Whether *Y. malinellus* Zeller, 1838 is distributed in China needs further study.

Four species of *Yponomeuta*, *Y. chalcocoma* (Meyrick, 1938), *Y. gershensoni* Sinev, 2008, *Y. meguronis* (Matsumura, 1931) and *Y. zebra* Sohn & Wu, 2010 were recorded to occur in China. But during this study, we have not rediscovered them. *Yponomeuta chalcocoma* was described from specimens collected in Yunnan, China (Meyrick 1938). According to the photos provided by Clarke (1965), the forewing of this species lacks a series of black dots, the shape of the valva is quite different from that of the other species in *Yponomeuta*, and the stout aedeagus is strongly curved near the base. Both adult and male genital characters of *Y. chalcocoma* show that this species might not belong to the genus *Yponomeuta*; hence, it is not included in the present paper.

Agassiz (2019) treated *Teinoptila* Sauber, 1902 and *Ptiloteina* Gershenson & Ulenberg, 1998 as synonyms of *Yponomeuta* based on the great variability of the species structures in the Afrotropical Region. Sohn (2021) described one species of *Teinoptila* from Sri Lanka, and restored the genus *Teinoptila* from synonymy. However, the two African species, *Y. ingens* (Gershenson & Ulenberg, 1998) and *Y. puncticornis* (Walsingham, 1891), remain in *Yponomeuta*. The species of *Teinoptila* are quite different from those of *Yponomeuta* in the Palaearctic, Oriental and Nearctic regions in the male genitalia characters, such as 1) gnathos with long arms dilated anteriorly; 2) the triangular sacculus with a narrow arm along dorsal margin in some species; 3) the extraordinarily long, slender aedeagus usually bending near the middle; and in the female genitalia character; 4) the corpus bursae with a dentate signum triangular in the posterior half and ovate in the anterior half. These characters show that *Teinoptila* should not be a synonym of *Yponomeuta*. Among the nine African *Yponomeuta* species groups defined by Agassiz (2019), species of the *puncticornis* group (*Y. ingens* (Gershenson & Ulenberg, 1998), *Y. puncticornis* (Walsingham, 1891), *Y. melanephos* Agassiz, 2019, *Y. staudei* Agassiz, 2019, *Y. nephella* Agassiz, 2019, *Y. ioni* Agassiz, 2019, *Y. griseomacula* Agassiz, 2019 and *Y. malagasella* Agassiz, 2019), the *gnophera* species group (*Y. gnophera* Agassiz, 2019) and the *horologa* species group (*Y. horologa* (Meyrick, 1935) and *Y. pseudostrigillatus* Gershenson & Ulenberg, 1998), are similar to those of the Palaearctic and Oriental *Teinoptila*, and species of the *onyxella* species group (*Y. onyxella* Agassiz, 2019 and *Y. oromiensis* Agassiz, 2019) are similar to those of the Nearctic species *Teinoptila calcarata* in genitalia. Based on our present study, we propose that these species should be removed from *Yponomeuta* to *Teinoptila*. Herein we provide a suggested list of *Teinoptila*, including the species that are transferred from the genus *Yponomeuta*.

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