

New and poorly known *Pleurota* Hübner, [1825] species from peninsular Spain, the Balearic Islands, and the Canary Islands (Lepidoptera: Oecophoridae, Pleurotinae)

Jukka Tabell, Martin Honey, Théo Leger, Marko Mutanen,
Timo Nupponen & Pasi Sihvonen

Abstract

Four new *Pleurota* Hübner, [1825] species from peninsular Spain, one species from the Balearic Islands and one species from the Canary Islands are described: *P. rondaensis* Tabell & Nupponen, sp. nov., *P. pyrenaella* Tabell, sp. nov., *P. balearica* Tabell & Honey, sp. nov., *P. malagaensis* Tabell & Nupponen, sp. nov., *P. grancanariella* Tabell, sp. nov. and *P. subnobilella* Tabell, sp. nov. In addition, adults, and genitalia of seven poorly known Spanish *Pleurota* species are illustrated, most of them for the first time, and photos of several type specimens are presented. Lectotypes for *P. protasella* Staudinger, 1883, *P. glitzella* (Staudinger, 1883), *P. pleurotella* (Staudinger, 1871), *P. sobriella* (Staudinger, 1859) and *P. nobilella* Rebel, 1901 are designated. DNA barcodes of the aforementioned species are compared with those of all other Pleurotinae available to us in the BOLD database. Each of the species studied herein has a unique BIN (Barcode Index Number).

Keywords: Lepidoptera, Oecophoridae, Pleurotinae, *Pleurota*, new species, Spain.

Especies nuevas y poco conocidas de *Pleurota* Hübner, [1825] de España peninsular, Islas Baleares e Islas Canarias (Lepidoptera: Oecophoridae, Pleurotinae)

Resumen

Se describen cuatro nuevas especies de *Pleurota* Hübner, [1825] de España peninsular, una especie de las Islas Baleares y una especie de las Islas Canarias: *P. rondaensis* Tabell & Nupponen, sp. nov., *P. pyrenaella* Tabell, sp. nov., *P. balearica* Tabell & Honey, sp. nov., *P. malagaensis* Tabell & Nupponen, sp. nov., *P. grancanariella* Tabell, sp. nov. y *P. subnobilella* Tabell, sp. nov. Además, se ilustran los adultos y la genitalia de siete especies españolas de *Pleurota* poco conocidas, la mayoría de ellas por primera vez y se presentan fotos de varios especímenes tipo. Se designan los lectotipos de *P. protasella* Staudinger, 1883, *P. glitzella* (Staudinger, 1883), *P. pleurotella* (Staudinger, 1871), *P. sobriella* (Staudinger, 1859) y *P. nobilella* Rebel, 1901. Los códigos de barras de ADN de las especies mencionadas se comparan con los de todos los demás Pleurotinae de que disponemos en la base de datos BOLD. Cada una de las especies aquí estudiadas tiene un BIN (Barcode Index Number) único.

Palabras clave: Lepidoptera, Oecophoridae, Pleurotinae, *Pleurota*, nuevas especies, España.

Introduction

This article is the fourth contribution in a series of revisionary studies on the Palearctic Pleurotinae (Oecophoridae) (see Kaila et al. 2019, Tabell et al. 2019, 2021). The aim of this study is to present poorly known Spanish *Pleurota* Hübner, [1825] species and provide photos on both type and

recently collected specimens, as well as to describe new species. In the Spanish mainland the Pleurotinae fauna is diverse with 26 known taxa (Vives Moreno, 2014), and a remarkable portion of them are considered endemic to the Iberian Peninsula. Recent collecting excursions to Spain, carried out by Timo and Kari Nupponen and Jukka Tabell, have produced many *Pleurota* specimens, and some of the research findings are presented below. More results will be released in forthcoming articles.

When checking the Pleurotinae specimens collected by Paul Grotenfelt in the early 1980s and 1990s, currently housed in MZH in University of Helsinki (Finland), the first author detected a series of *Pleurota* originating from the Canary Islands: Gran Canaria, Maspalomas. The examination of the genitalia indicated that the species may be new for science. Two samples were sent for DNA-studies, but both of them failed to yield DNA sequences. In order to get fresh material for genetic study, an excursion to Maspalomas and surrounding slopes was conducted by J. Tabell in 2019. The excursion was successful in the sense that aforementioned *Pleurota* species was found again. Simultaneously Per Falck, during his field work also succeeded in finding several specimens from two different areas. The species is described below as new to science. Previously only one member of the family Oecophoridae, namely *Epicallima mikkolai* (Lvovsky, 1995) was known to inhabit the Canary Islands (Falck et al. 2019), and therefore we report genus *Pleurota* here for the first time from the Canary Islands.

When visiting the NHMUK in London in 2018, P. Sihvonen received a box with a series of small *Pleurota* species for study, collected by Martin Honey from three Balearic Islands. Small size and wing patterns indicated these may represent an unknown species, and this was confirmed later by morphological and molecular evidence. The genus *Pleurota* is reported here for the first time from the Balearic Islands.

Material and methods

Abbreviations

MFNB	=	Museum für Naturkunde Berlin, Germany
MNCN	=	Museo Nacional de Ciencias Naturales, Madrid, Spain
MNHN	=	National Museum of Natural History, Paris, France
MZH	=	Finnish Museum of Natural History, Helsinki, Finland
NHMUK	=	Natural History Museum, London, United Kingdom
HON	=	research collection of Martin Honey, London, United Kingdom
JUJ	=	research collection of Jari Junnilainen, Vantaa, Finland
NUP	=	research collection of Timo & Kari Nupponen, Espoo, Finland
TAB	=	research collection of Jukka Tabell, Hartola, Finland
bp	=	base-pair

The holotype specimens and a part of the paratype specimens of newly described species are deposited in the public collections of MZH and NHMUK, and private collections of JUJ and NUP. Furthermore, a part of the paratype specimens is deposited in the private collection of TAB. The holotypes that are deposited in MZH have been digitized and have a unique graphical QR code and web identifier, following the open access policy of that museum. URL links for these holotype records are provided in the article. Tissues (legs) of at least of two samples of each species, when available, were sent to the Canadian Centre for DNA Barcoding (CCDB) to obtain molecular data of the 658 bp fragment of the mitochondrial COI gene (DNA barcode). The DNA barcodes of the species presented here were compared with those of all Pleurotinae available to us in BOLD, altogether clustering in 135 different BINs (Barcode Index Numbers). The results are discussed under the Molecular data section of each species. The barcodes used in this study are publicly available through the BOLD dataset DS-PLEESP at dx.doi.org/10.5883/DS-PLEESP.

Terminology for forewing markings and male and female genitalia, as well as methods and equipment used for dissecting and photographing adult specimens, are explained by Kaila et al. (2019)

and Tabell et al. (2019) and are not repeated here. Pleurotinae species are generally characterized by long and porrect labial palpi that are densely covered by long, piliform scales, with a straight, upward pointing 3rd segment. Morphological traits characterizing and delimiting Pleurotinae (Oecophoridae) are provided in Kaila et al. (2019).

Taxonomy

A review of seven Spanish *Pleurota* species

Pleurota hebetella Ragonot, 1889 (Figures 1, 27, 51)

Barcode Index Number: BOLD:ADA2839

Pleurota hebetella Ragonot, 1889. *Bull. Soc. ent. Fr.*, (6)9, 130

Type locality: SPAIN: Albarracín and Cuenca. Paratype ♂, coll. E. L. Ragonot (MNHN [not found]), designated by Back (1973), Albarracín, Cotype, male genitalia illustrated by Back (1973).

Material studied: SPAIN, Aragón, prov. TERUEL, 3.5 km ENE Monteagudo del Castillo vill., 1530-1600 m, 2 ♂ (DNA sample 24684 Lepid Phyl; DNA sample 24685 Lepid Phyl), 24-VI-2012, T. Nupponen leg.; same collecting data, 1 ♂ (GP 5574 J. Tabell, DNA sample 24683 Lepid Phyl) but 25-VI-2012; same collecting data, but 1500 m, N40.46847 W0.77984, 4 ♂ (GP 5769 J. Tabell), 6-VII-2016, J. Tabell leg. (coll. TAB).

Diagnosis: *P. hebetella* is characterized by unicolorous ochreous brown forewing with dark grey costal and dorsal fringes. In the male genitalia, the large area of scobination of gnathos and the long posterior lobe of juxta are diagnostic. The female is unknown.

Molecular data: Three specimens of *P. hebetella* were sequenced successfully, resulting in 658 bp (n=2) and 567 bp (n=1) DNA barcodes. The nearest neighbour to *P. hebetella* is *P. rondaensis* sp. nov., with a 3.13 % divergence. The barcodes of *P. hebetella* exhibit 0.36 % intraspecific variation.

Description: Adult. Wingspan 13.5-15 mm. Labial palpus pale ochreous brown, ventrally mixed with off-white scales, apical half dark brown, about 6.5x as long as diameter of the eye (1st and 2nd palpomeres), 3rd palpomere 0.25x length of 1st and 2nd palpomeres. Antenna brown, hairy, 0.75x length of forewing. Tegula and thorax ochreous brown, frontal tuft, and neck slightly paler. Forewing narrow, ochreous brown, without longitudinal pale lines and dark spots, except for narrow pale ochre costal line from near base to $\frac{3}{4}$. Cilia dark grey. Hindwing and cilia dark grey. Abdomen slightly lustrous, blackish grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus thimble-shaped from ventral view, elongate, lined with several bristles of different length, distal margin concave. Gnathos 1.65x as long as uncus, funnel-shaped from ventral view, apex broadly rounded, with a shallow medial longitudinal crest, apical $\frac{2}{3}$ surfaced by transverse ridges and small nodules, apex with sharp spines. Valva upwards oblique, thimble-shaped, ventral margin concave; sacculus covered with long bristles. Anterior extension of juxta straight, robust; posterior lobe exceeding the apex of uncus, apex with a small tooth; valval lobe elongate, parallel-sided, upwards oblique, apex evenly rounded, broadly covered with long bristles. Phallus arched, parallel-sided, with one weakly sclerotized cornutus and a group of numerous tiny spines, apical $\frac{1}{4}$ dorsally covered with small spines and nodules.

Female genitalia: Unknown.

Biology: Unknown. The habitat in Teruel is a calcareous meadow.

Distribution: Spain. Records from Portugal and France should be re-examined.

Remarks: Back (1973) states that one paratype is housed in MNHN, but it has not been found there despite searching efforts (Sylvain Delmas, pers. comm.). The location of other type specimens is not known. The male genitalia of the paratype are illustrated and described by Back (1973), the female is unknown. The original description corresponds well with the specimens presented here, except for the different size (17 mm). It is possible that the original type series enclosed two or more different species, as was the case with *P. amaurodoxa* (see Remarks section of *P. amaurodoxa*). Back (1973)

points out that specimens determined as *P. hebetella* in different collections are mostly misidentifications.

Pleurota amaurodoxa Meyrick, 1935 (Figures 2-3, 28-29, 42, 51)

Barcode Index Number: BOLD:AED0185

Pleurota amaurodoxa Meyrick, 1935. *Exotic Microlep.*, 4(18-19), 593

Type locality: SPAIN: Burgos, Estepar. Lectotype ♂, designated by Vives Moreno (2014) (NHMUK; examined from photographs).

Material studied: SPAIN, Castilla y León, BURGOS, 8 km SE, 42.28170 -3.64025, 980 m, 4 ♂ (GP 6124 J. Tabell; DNA sample 26327 Lepid Phyl; DNA sample 26329 Lepid Phyl), 1 ♀ (GP 6349 J. Tabell, DNA sample 26328 Lepid Phyl), 4-VII-2019, J. Tabell leg.; same collecting data, 1 ♂, but 5-VII-2019 (coll. TAB).

Diagnosis: *P. amaurodoxa* is a small species which externally resembles the Spanish species *P. hebetella* and *P. pyrenaella* sp. nov. The male genitalia can be distinguished by shorter uncus and posterior lobe of juxta, and broader valval lobe. The female genitalia are similar to those of *P. pyrenaella*, but both apophyses are longer, the posterior signa are markedly longer, and the spines of anterior signum are longer. The female of *P. hebetella* is unknown.

Molecular diagnosis: Three specimens of *P. amaurodoxa* were sequenced, resulting in 655, 654 and 651 bp DNA barcodes. The nearest neighbour to *P. amaurodoxa* is *P. hebetella*, with a 3.13 % divergence. The barcodes of *P. amaurodoxa* exhibit no intraspecific variation.

Description: Adult. Wingspan 12-15.5 mm. Labial palpus mixed with off-white, brown and blackish brown scales, ventrally darker, about 5x as long as diameter of eye (1st and 2nd palpomeres), 3rd palpomere 0.3x length of 1st and 2nd palpomeres. Antenna brown, mixed with off-white scales, 0.85x length of forewing. Frontal tuft and neck brown, mixed with off-white, tegula and thorax ochre, mixed with off-white. Forewing narrow, covered by pale ochre, ochre-tipped and brown scales, without longitudinal lines and dark spots, except for a narrow off-white costal line from base to $\frac{2}{3}$. Cilia brownish grey. Hindwing and cilia dark brownish grey. Abdomen slightly lustrous, dark brownish grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus thimble-shaped from ventral view, elongate, lined with several bristles of different length, distal margin concave. Gnathos 1.75x as long as uncus, funnel-shaped from ventral view, tapered towards apex, with a shallow, long longitudinal median crest, medially surfaced by small nodules. Valva elongate, upwards oblique, thimble-shaped, ventral margin evenly curved. Anterior extension of juxta straight, well sclerotized; median part rounded; posterior lobe not reaching apex of uncus, apex with a small tooth; valval lobe club-shaped, moderately broad, apex evenly rounded, lined with several bristles. Phallus curved, parallel-sided, moderately narrow, with a narrow chain of small spines.

Female genitalia: Papilla analis ovoid, narrow, covered with bristles of different length. Apophyses long; posterior apophysis 6x as long as papilla analis and 1.05x as long as anterior apophysis, which is 2.4x as long as segment 8. Segment 8 longitudinally elongated, rectangular, membranous, quadrate, distally sparsely covered with bristles, dorsolaterally reinforced by sclerotized band; branch of anterior apophysis apically fused, U-shaped; ventral longitudinal sclerotization narrow, shorter than segment 8. Antrum tubular, parallel-sided, anterior half sclerotized, colliculum short. Ductus bursae slightly expanded towards corpus bursae. Corpus bursae ovoid; anterior signum strongly arched, broad, protuberances long, thornlike; two leaf-shaped posterior signa with thornlike protuberance and strongly elongated base.

Biology: Unknown. The specimens collected by the first author were netted around *Genista* sp.

Distribution. Known only from northern Spain, near Burgos.

Remarks: The species description by Meyrick was based on three specimens collected from Estepar, Burgos, in northern Spain. According to Vives Moreno (2014) the type series embraces three different species: *P. pyropella* ([Denis & Schiffermüller], 1775) (= *P. iberica*?), *P. ericella* (Duponchel, 1839) and *P. amaurodoxa*. The last specimen was selected as a lectotype by Vives Moreno (2014).

Pleurota protasella Staudinger, 1883 (Figures 4-5, 30, 43, 51)

Barcode Index Number: BOLD:ACY6183

Pleurota protasella Staudinger, 1883, *Stettin Ent. Ztg.*, 44(4-6), 184-185

Type locality: SPAIN: Granada, Sierra de Alfacar. Lectotype [here designated]: “Origin.” [pink label], “Sierra de Alfacar m[ich] 80.” [pale blue label], “Paralectotypus” [red label], “ex coll. Staudinger” (MFNB, examined from photographs and barcode: DNA sample MFNLEP252, 658 bp[89n]).

Material studied: SPAIN, Prov. GRANADA, Sierra Nevada, 1490 m, 4 km SW Güejar-Sierra, N37.135 W3.473, 3 ♂, 2 ♀ (GP 5500 J. Tabell, DNA sample 24575 Lepid. Phyl; GP 5956 J. Tabell, DNA sample 24927 Lepid. Phyl), 2-VII-2015, J. Tabell leg.; Prov. Granada, Sierra Nevada 1620 m, 2 km NW Bayárcal, N37.040 W3.014, 4 ♂, 1 ♀ (DNA sample 24574 Lepid. Phyl), 4-VII-2015, J. Tabell leg.; Granada, Sierra Nevada 2030 m, 1 km S Puerto de la Ragua, N37.104 W3.027, 3 ♂ (GP 5471 J. Tabell, DNA sample 24572 Lepid. Phyl), 5-VII-2015, J. Tabell leg.; ALMERÍA, Sierra de los Filabres, Calar Alto 2130 m, N37.222 W2.545, 4 ♂ (DNA sample 24573 Lepid. Phyl; DNA sample 24926 Lepid. Phyl), 5-VII-2015, J. Tabell leg.; ALICANTE, 9 km NNW Albaterra, 460 m, N38.254 W0.913, 1 ♂ (DNA sample 25603 Lepid. Phyl), 21-V-2016, J. Tabell leg.; Alicante, 9.4 km NNW Albaterra, 500 m, N38.256 W0.919, 2 ♂ (GP 5694 J. Tabell), 22-V-2016, J. Tabell leg. (all coll. TAB). The species was not treated by Back (1973).

Diagnosis: Characterized by broad white costal line, dark discal and discocellular spots and short 3rd palpomere of labial palpus. Very long posterior lobe of juxta and long chain of cornuti in the male genitalia, and the combination of long apophyses, long and broad antrum and long corpus bursae in the female genitalia distinguish *P. protasella* from other species.

Molecular diagnosis: Seven specimens of *P. protasella* were sequenced, resulting in 658 bp DNA barcode sequences for all specimens. The nearest neighbour to *P. protasella* is the Moroccan species *P. ternaria* Tabell, 2019, with a 5.74 % divergence. The barcodes of *P. protasella* exhibit 1.71 % intraspecific variation, which may indicate cryptic diversity.

Description: Adult. Wingspan 12.5-15.5 mm. Labial palpus 5.6x as long as diameter of eye (1st and 2nd palpomeres), 3rd palpomere 0.25x length of 1st and 2nd palpomeres, white, below broadly dark brown. Antenna hairy, pale brown, 0.65x length of forewing. Head, thorax and tegula off-white. Forewing white, scattered with pale fuscous, brown-tipped scales, blackish brown discal and discocellular spots distinct, between them a faint streak, another streak from base to plical spot, fringe line formed of several dark to blackish brown scales; costal line white, from base to $\frac{2}{3}$, widest at middle; subcostal line greyish brown, mixed with white, apically scattered with a few blackish brown scales, gradually widened from near base to apex; cilia long, pale brown, basally and apically white. Hindwing pale grey, cilia pale grey, apically paler. Abdomen slightly lustrous, pale grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus bell-shaped from ventral view, markedly shorter than gnathos, lined with few long bristles, apical half narrow. Gnathos funnel-shaped from ventral view, 1.55x length of uncus, gradually tapered towards apex, surfaced with small nodules medially, apex rounded, moderately broad. Valva upwards oblique; cucullus narrow, ventral margin medially concave, costa slightly concave; valval lobe narrow, finger-shaped, basally bulged, surfaced with a few long bristles apically. Anterior extension of juxta straight, median part rounded, posterior lobe narrow, very long, with a small apical tooth. Vinculum V-shaped. Phallus curved, slightly tapered towards apex, with an elongate plate-shaped cornutus and a narrow chain of several spiniform cornuti, apical $\frac{1}{5}$ with small nodules dorsally.

Female genitalia: Papilla analis ovoid, narrow, covered with bristles of different length. Apophyses long; posterior apophysis about 5x as long as papilla analis and 1.5x as long as anterior apophysis, which is 2x as long as segment 8. Segment 8 longitudinally elongated, rectangular, membranous, quadrate, distally very sparsely covered with bristles, dorsolaterally reinforced by sclerotized band; branch of anterior apophysis apically fused, U-shaped. Antrum tubular, long, posterior half densely covered by small spinules, anterior half more sclerotized. Ductus bursae

membranous, short. Corpus bursae ovoid, long, with a large arched signum with two sclerotized wedge-shaped protuberances, and two leaf-shaped signa of equal size.

Biology: Unknown.

Distribution: Spain. Records from France should be re-examined.

Remarks: The species description by Staudinger was based on four male specimens, but only three specimens labelled as paralectotypes were found in MFNB. These designations are unpublished, and according to the International Code of Zoological Nomenclature (ICZN 1999, Article 74.7) they are not valid. Consequently, one original specimen is designated herein as a lectotype.

Pleurota glitzella (Staudinger, 1883) (Figures 6-7, 31, 51)

Barcode Index Number:-

Protasis glitzella Staudinger, 1883. *Stettin Ent. Ztg.*, 44(4-6), 185

Type locality: SPAIN: Granada. Lectotype [here designated]: "Lectotypus ♂" [red label], "Lectotypus n 9. ♂ *Pleurota glitzella* Stgr. Lvovsky det.", "Granada m[ich] 80" [pale blue label], "Origin." [pink label] (MFNB, examined from photographs and barcode: DNA sample MFNLEP246, 658 bp [250n]).

Material studied: SPAIN, ALMERÍA, Sierra de los Filabres, route Purchena-Senés, 1600 m, 1 ♂ (GP 5637 J. Tabell, DNA sample 25437 Lepid Phyl [barcoding failed]), 16-VI-2007, Jan Šumpich leg. & coll. The species was not treated by Back (1973).

Diagnosis: A small species, characterized by very short 3rd palpomere of labial palpus, which is concealed by hairy scales, and long cilia in the forewing with two distinct dark, broad, and slightly concave fringe lines. In the male genitalia, the shape of gnathos, valval lobe and strongly concave outer margin of cucullus distinguish *P. glitzella* from other species. The female is unknown.

Molecular diagnosis: An old lectotype was sequenced successfully, resulting in a 658 bp DNA sequence [250n]. It exhibits 97.26 % similarity with the sequence of a Spanish still undetermined *Pleurota* species (n=3, private records).

Description: Adult (faded to brown, originally greyer). Wingspan 11-13 mm (original description). Labial palpus white to pale brownish white above, 3rd palpomere not visible. Antenna pale brown. Head, thorax and tegula white. Forewing white, dorsal third covered with pale brown scales, blackish brown discal, discocellular and plical spots distinct; no costal line; subcostal line broad, brown, mixed with white. Fringe line V-shaped, formed of blackish brown scales, cilia long, white, with two distinct brown lines, lines slightly concave at dorsal area. Hindwing and cilia pale brown. Abdomen slightly lustrous, pale grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus triangular from ventral view, lined with several long bristles. Gnathos fluke-shaped from ventral view, tapered towards apex, moderately short, 1.3x length of uncus, surfaced with small nodules medially. Valva upwards oblique; cucullus narrow, ventral margin medially concave, costa slightly bulged basally; valval lobe club-shaped, basally slightly bulged, apical half surfaced with several nodules and short bristles. Anterior extension of juxta straight and narrow, posterior lobe very long, with a small apical tooth. Vinculum U-shaped. Phallus curved, parallel-sided, with a robust plate-shaped cornutus and a long loose bundle of numerous spiniform cornuti.

Female genitalia: Unknown.

Biology: Unknown.

Distribution: Southern Spain.

Remarks: The designation by Lvovsky is unpublished, and according to the ICZN (1999, Article 74.7) it is not valid. Consequently, one original specimen is designated herein as a lectotype.

Pleurota pleurotella (Staudinger, 1871) (Figures 8-10, 32, 44, 51)

Barcode Index Number: BOLD:ACW2024

Protasis pleurotella Staudinger, 1871. *Berl. Ent. Z.*, 14(3/4), 317

Type locality: SPAIN: Andalusia. Lectotype [here designated]: "Origin" [pink label], "ex Coll. Staudinger", "Andalucia Kal.[isch]" [pale blue label], "Zool. Mus. Berlin" [pale brown label],

“Lectotypus *Pleurota pleurotella* Stgr. design. Lvovsky” [red label] (MFNB; examined from photographs).

Material studied: SPAIN, GRANADA, Sierra Nevada 700 m, 2 km N Cherin, 1 ♀, 28-III-1998, T. Nupponen leg.; ALICANTE, 3 km E San Miguel de Salinas, 1 ♀ (GP 5951 J. Tabell), 16-IV-2009, J. Tabell leg.; Alicante, 6 km NW San Miguel de Salinas, 2 ♀ (GP 5298 J. Tabell), 22-IV-2009, J. Tabell leg.; ALMERÍA, 1 km SW Tabernas, 370 m, 1 ♂ (GP 5460 J. Tabell, DNA sample 23688 Lepid. Phyl), 7-IV-2014, J. Tabell leg.; GRANADA, 10 km NE Baza, 700 m, N37.563 W2.709, 2 ♂ (DNA sample 23701 Lepid. Phyl), 1 ♀, 8-IV-2014, J. Tabell leg.; 1 ♂, same collecting data, but 10-IV-2014; same collecting data, 1 ♂ (GP 5308, DNA sample 23687 Lepid. Phyl), but 13-IV-2014; Granada, 7.5 km N Motril, 100 m, N36.811 W3.546, 1 ♂ (GP 5409 J. Tabell), 10-IV-2014, J. Tabell leg.; Granada, 5.5 km N Cúllar, 870 m, N37.632 W2.571, 1 ♂, 12-IV-2014, J. Tabell leg. (all coll. TAB). The species was not treated by Back (1973).

Diagnosis: From the outer appearance, *P. pleurotella* is similar to *P. gallicella* Huemer & Luquet, 1995, but the dark spots on the forewing are larger, and the 3rd palpomere of the labial palpus is not visible. The combination of a narrow cucullus, long valval lobe and long posterior lobe of juxta distinguish *P. pleurotella* from other species. In the female genitalia, the long segment 8 and the shape of signa are characteristic.

Molecular diagnosis: Three specimens of *P. pleurotella* were sequenced successfully, resulting in 658 bp barcodes for all specimens. The nearest neighbour to *P. pleurotella* is the morphologically distinct *P. candida* Back, 1973, with a 7.77 % divergence. The barcodes of *P. pleurotella* exhibit no intraspecific variation.

Description: Adult. Wingspan 13.5-16 mm. Labial palpus 5.8x as long as diameter of eye (1st and 2nd palpomeres), 3rd palpomere very short, entirely concealed by scales, greyish white, mixed with pale brown, below broadly dark brown. Antenna hairy in male, brown, 0.65x length of forewing. Head off-white, thorax and tegula mixed with brown and grey. Forewing off-white, scattered with brownish grey scales, blackish brown discal, discocellular and plical spots large, fringe line formed of several blackish brown scales; costal line absent; subcostal line brownish grey, mixed with white, gradually widened from base to near apex, apically indistinctly edged; cilia long, off-white, with two grey lines. Hindwing pale grey, cilia pale grey with yellow tinge, apically white. Abdomen slightly lustrous, grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus triangular from ventral view, lined with few long bristles. Gnathos basally fluke-shaped, distally finger-shaped from ventral view, 1.6x length of uncus, surfaced with small nodules medially, apex broadly rounded. Valva upwards oblique; cucullus narrow, ventral margin medially concave, costa slightly bulged basally; valval lobe narrow and long, club-shaped, basally slightly bulged, apical half more sclerotized, surfaced with few short bristles apically. Anterior extension of juxta straight, posterior lobe very long, with a small apical tooth. Vinculum trapezoid. Phallus curved, parallel-sided, with a robust plate-shaped cornutus and a loose bundle of several spiniform cornuti.

Female genitalia: Papilla analis ovoid, narrow, apical half covered with bristles. Apophyses long; posterior apophysis 6.8x as long as papilla analis and 1.5x as long as anterior apophysis, which is 1.7x as long as segment 8. Segment 8 longitudinally elongated, membranous, quadrate, dorsolaterally reinforced by sclerotized band; branch of anterior apophysis apically fused, U-shaped, weakly sclerotized; ventral longitudinal sclerotization narrow, as long as segment 8. Antrum tubular, long, parallel-sided. Ductus bursae narrow. Corpus bursae ovoid, narrow, with one arched signum with two serrated protuberances, and two leaf-shaped signa with long, straight spine.

Biology: Unknown.

Distribution: Known from southern Spain.

Remarks: The designation by Lvovsky is unpublished, and according to the ICZN (1999, Article 74.7) it is not valid. Consequently, one original specimen is designated herein as a lectotype.

Pleurota sobriella (Staudinger, 1859) (Figures 11-13, 33, 45, 51)

Barcode Index Number: BOLD:ADB3164

Anchinia sobriella Staudinger, 1859. *Stettin ent. Ztg.*, 20(7-9), 245-246

Type locality: SPAIN: Granada. Lectotype [here designated]: "21/6" [pale brown label], "Origin" [pink label], "Lectotypus *Pleurota sobriella* Stgr. ♂ Lvovsky det.", "Granada. m[ich] [pale blue label], "Lectotypus ♂" [red label], "ex Coll. Staudinger", "19" [pale brown label] (MFNB; examined from photographs).

Material studied: SPAIN, JAÉN, Albánchez, 1 ♂ (DNA sample 24672 Lepid Phyl), 8-VI-1994, F. Schepler leg. (coll. TAB); Aragón, TERUEL, Albarracín, 3 km N, 1 ♂ (DNA sample 24812 Lepid Phyl [barcoding failed]), 12-VI-2004, T. Nupponen leg.; Aragón, Teruel, Albarracín, 1 ♂ (GP 5338 J. Tabell, DNA sample 23657 [barcoding failed]), 17-VI-2004, J. Junnilainen leg.; Prov. Soria, SORIA, 30 [km] SW, El Temeroso, 1080 m, 1 ♀ (DNA sample 24814 Lepid Phyl), 26-VI-2012, T. Nupponen leg.; Aragón, prov. TERUEL, Monteagudo del Castillo vill. 3.5 km ENE, 1 ♂ (DNA sample 24811 Lepid Phyl), 14-VI-2008, K. Nupponen leg.; ibidem, 1530-1610 m, 1 ♀ (DNA sample 24813 Lepid Phyl), 16-VII-2012, T. Nupponen leg.; Aragón, Teruel, Monteagudo del Castillo 3.5 km ENE, 1550 m, N40.46847 W0.77984, 3 ♂ (GP 6035 J. Tabell; GP 6036 J. Tabell; DNA sample 25577 Lepid Phyl), 3 ♀ (GP 5756 J. Tabell; GP 5768 J. Tabell), 6-VII-2016, J. Tabell leg. (all coll. TAB).

Diagnosis: *P. sobriella* is characterized by olive-brown forewing with narrow white lines. The shape of gnathos and valval lobe in the male genitalia, and thick and long apophyses in the female genitalia are distinguishing details.

Molecular diagnosis: Five specimens of *P. sobriella* were sequenced successfully, resulting in 658 bp (n=3), 611 bp (n=1) and 572 bp (n=1) sequences. The nearest neighbour to *P. sobriella* is *P. subnobilella* with a 1.66 % divergence. The barcodes of *P. sobriella* exhibit 0.56 % intraspecific variation.

Description: Adult. Wingspan 22-24 mm. Labial palpus ochre, ventrally mixed white and brown, dorsolaterally with a dark brown apical spot, about 7.3x as long as diameter of the eye (1st and 2nd palpomeres), 3rd palpomere 0.35x length of 1st and 2nd palpomeres. Antenna brown, basally mixed with white scales. Frontal tuft and neck ochre, tegula and thorax yellowish olive-brown. Costal line narrow, indistinctly edged, from near base to $\frac{2}{3}$; subcostal line yellowish olive-brown, parallel-sided; median line white, narrow, not connected to dent of median line, which forms a separate narrow line from base to tornus; fringe line off-white; dorsal line narrow and short; median area yellowish olive-brown, in female paler. Cilia grey, apically off-white. Hindwing and cilia dark grey. Abdomen slightly lustrous, dark grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus thimble-shaped from ventral view, lined with several bristles of different length, apex blunt. Gnathos 1.9x as long as uncus, from ventral view elongate, funnel-shaped, medially covered with small nodules, apical half narrow, parallel-sided, apex blunt. Valva elongate, upwards oblique; cucullus thimble-shaped. Anterior extension of juxta straight, short, median part rounded, posterior lobe extended to uncus, apex armed with a small tooth. Valval lobe well sclerotized, very broad, rounded apically, covered with several small nodules and short bristles apically. Phallus curved, tapered towards apex, apex pointed, with one robust plate-shaped cornutus surrounded by numerous tiny spines.

Female genitalia: Papilla analis ovoid, covered with bristles of different length. Apophyses very long; posterior apophysis 10x as long as papilla analis and 1.6x as long as anterior apophysis. Segment 8 elongated longitudinally, rectangular, membranous, dorsolaterally reinforced by sclerotized band, lined with a few bristles distally, ventral longitudinal sclerotization narrow, as long as segment 8, branch of anterior apophysis narrow. Antrum tubular, short, membranous, anterior $\frac{1}{3}$ tapered and sclerotized. Ductus bursae membranous, moderately broad, parallel-sided. Corpus bursae ovoid, with one robust arched signum bearing two serrated, thorn-like protuberances, and two leaf-shaped signa.

Biology: Unknown.

Distribution: Spain.

Remarks: The designation by Lvovsky is unpublished, and according to the ICZN (1999, Article 74.7) it is not valid. Consequently, one original specimen is designated herein as a lectotype.

Pleurota nobilella Rebel, 1901 (Figures 14-15, 34, 51)

Barcode Index Number: BOLD:ADI2705

Pleurota honorella Hb. v. *nobilella* Rebel, 1901. *Dt. ent. Z. Iris*, 13(2), 169

Type locality: SPAIN: Murcia. Lectotype [here designated] ♀ [abdomen missing] “Type” [red ink], “Origin.” [pink label], “ex coll. Staudinger” (MFNB, examined from photographs and barcode: DNA sample MFNLEP252, 658 bp[89n]).

Material studied: SPAIN, ALICANTE, 9 km NNW Albaterra, 460 m, N38.25317 W0.91450, 5 ♂ (GP 5856 J. Tabell, DNA sample 25562 Lepid Phyl; GP 5901 J. Tabell, DNA sample 25563 Lepid Phyl; DNA sample 26200 Lepid Phyl), 21-V-2016, J. Tabell leg. (coll. TAB).

Diagnosis: Brown subcostal line, which is markedly darker than the rest of the wing, distinguishes *P. nobilella* from *P. honorella* and *P. subnobilella* sp. nov. In the male genitalia, the broad posterior lobe of juxta is characteristic. The female genitalia are unknown.

Molecular diagnosis: Three fresh specimens of *P. nobilella* were sequenced, resulting in 658 bp (n=2) and 652 bp (n=1) barcodes. In addition, two old type specimens were sequenced (see Remarks). The nearest neighbor to *P. nobilella* is the Corsican *P. cyrniella* Mann, 1855, with a 6.53 % divergence. Minimum and maximum genetic divergences between the lectotype and three *P. nobilella* specimens are 0.72 % and 0.9 %, respectively.

Description: Adult. Wingspan 18-23.5 mm, ♀ lectotype 29 mm. Labial palpus pale grey, ventrally mixed white and brown, dorsolaterally with a dark brown apical spot, about 6.3x as long as diameter of the eye (1st and 2nd palpomeres), 3rd palpomere 0.25x length of 1st and 2nd palpomeres. Antenna dark brown. Frontal tuft and neck off-white, mixed with pale beige, tegula white, mixed with pale ochre, thorax white, medially mixed with pale ochre. Costal line white, from near base to $\frac{4}{5}$, evenly tapered towards apex; subcostal line brown, evenly expanded towards apex; median line from base to apex, white, at junction of dent of median line narrow, then slightly expanded, apical $\frac{1}{3}$ tapered, dent wedge-shaped, not reaching termen; fringe line indistinct, only slightly paler than median area; dorsal line parallel-sided, white, from base to $\frac{1}{3}$; median area pale ochreous yellow. Cilia pale brown. Hindwing and cilia brownish grey. Abdomen slightly lustrous, grey, each segment with a row of ochre scales.

Male genitalia: Uncus thimble-shaped from ventral view, lined with several bristles of different length, apex blunt. Gnathos 1.7x as long as uncus, from ventral view elongate, funnel-shaped, medially covered with small nodules, gradually tapered towards apex, apex weakly beak-shaped. Valva elongate, upwards oblique, ventral margin evenly curved; cucullus narrow, apex slightly expanded. Juxta robust; anterior extension straight, short, median part rounded, posterior lobe broad, not extended to uncus, apex armed with a small tooth. Valval lobe broad, rounded apically, covered with several short bristles apically. Vinculum U-shaped. Phallus curved, parallel-sided, with one robust plate-shaped cornutus surrounded by numerous tiny spines.

Female genitalia: Unknown. The female lectotype lacks the abdomen. The description by Back (1973) is not based on type material and is thus dubious.

Biology: Unknown.

Distribution: Known from south-eastern Spain, provinces of Murcia and Alicante.

Remarks: *P. nobilella* was originally described as a variation of *P. honorella* (Hübner, [1813]), based on two specimens. Back (1973) upgraded it to a valid species, stating “Verbleib nicht nachgewiesen” [location is not known]. Two specimens found in MFNB bear “Origin”, “Type” and “ex coll. Staudinger” labels, and they indisputably are the original type specimens. The male genitalia are illustrated and described by Back (1973), the female genitalia are shortly described but not illustrated (from the specimen collected from Sierra de Espuña, province of Murcia).

Based on the external appearance, the male and female type specimens are not conspecific. Also,

the DNA analysis supports our interpretation, the genetic distance between them is 8.4 %. We have designated the female specimen as a lectotype because Rebel (1901) emphasizes the importance of the dark subcostal stripe as a distinguishing character, and in the female specimen it is strikingly dark. The identity of the male specimen (Figure 16) remains undefined, it has a unique BIN (BOLD:AER7277) and its genetic divergence to the nearest neighbour *P. subnobilella* is 1.28 %.

Descriptions of new species

Pleurota rondaensis Tabell & Nupponen, sp. nov. (Figures 17, 35, 46, 51)

Barcode Index Number: BOLD:ADA1289

Type material: Holotype ♂ (DNA sample 24689 Lepid Phyl [barcoding failed]): SPAIN, Málaga, 20 km NE Ronda, 10-IV-2002, T. & K. Nupponen leg. (coll. NUP).

Paratypes: 25 ♂ (GP 5581 J. Tabell, DNA sample 24688 Lepid Phyl), 3 ♀, same collecting data as holotype; 5 ♂, same collecting data, but 2-IV-1998, T. Nupponen leg.; 18 ♂, 2 ♀ (GP 5990 J. Tabell; DNA sample 24690 Lepid Phyl), same collecting data, but 9-IV-2002, T. & K. Nupponen leg. (colls. NUP and TAB, 2 exx. coll. MNCN); 1 ♂, Spain, Málaga, Ronda, 24-V-1989, H. Holmberg leg. (coll. NUP).

Diagnosis: *Pleurota rondaensis* is characterized by unicolorous brown forewing. It can be distinguished from similarly coloured *P. hebetella*, *P. amaurodoxa* and *P. pyrenaella* sp. n. by larger size. In the male genitalia, distinguishing features are the uncus (longer in *P. hebetella* and *P. pyrenaella*), the gnathos (longer in *P. hebetella*), the posterior lobe of juxta (shorter in *P. amaurodoxa*, longer in *P. hebetella* and *P. pyrenaella*), and the valval lobe (narrower in other related species). In the female genitalia, the narrow ductus bursae and the shape of posterior signa are characteristic.

Molecular data: Two specimens of *P. rondaensis* were sequenced successfully, resulting in 599 and 614 bp barcode fragments. The nearest neighbours to *P. rondaensis* are *P. pyrenaella*, *P. hebetella* and *P. amaurodoxa*, with 3.49 %, 4.15 % and 4.57 % divergences, respectively. The barcodes of *P. rondaensis* exhibit no intraspecific variation.

Description: Adult. Wingspan 18-20.5 mm. Labial palpus pale yellowish brown, mixed brown, ventrally darker. 7x as long as diameter of the eye (1st and 2nd segments), 3rd segment 0.35x length of 1st and 2nd segments. Antenna brown, hairy, 0.55x length of forewing. Head, tegula and thorax mixed yellowish brown and brown. Forewing covered with long brown, yellow-tipped scales; costal line pale yellow, from near base to $\frac{4}{5}$, slightly bulged medially; subcostal line slightly darker than rest of forewing. Cilia brownish grey. Hindwing dark grey, cilia paler, with a distinct fringe line. Abdomen slightly lustrous, blackish grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus jingle bell-shaped from ventral view, lined with several bristles of different length, distal margin concave. Gnathos 1.45x as long as uncus, funnel-shaped from ventral view, evenly tapered towards apex, largely and densely surfaced by transverse ridges and small nodules, with a medial longitudinal crest. Valva upwards oblique, thimble-shaped, ventral margin concave; sacculus covered with long bristles. Anterior extension of juxta straight, robust; median part a roundish plate; posterior lobe not exceeding the apex of uncus, apex with a small tooth; valval lobe large, parallel-sided, upwards oblique, apex evenly rounded, broadly covered with long bristles. Phallus arched, slightly tapered towards apex, cornutus indistinct, apical $\frac{1}{5}$ covered with small spines and nodules.

Female genitalia: Papilla analis ovoid, narrow, apical half covered with bristles. Posterior apophysis 5.6x as long as papilla analis and 2.3x as long as anterior apophysis, which is as long as segment 8. Segment 8 longitudinally elongated, membranous, quadrate, dorsolaterally reinforced by sclerotized band; branch of anterior apophysis apically fused, deeply U-shaped, weakly sclerotized; ventral longitudinal sclerotization narrow, shorter than segment 8. Antrum tubular, narrow, anterior half sclerotized, colliculum short. Ductus bursae very narrow, expanded towards corpus bursae. Corpus bursae ovoid; anterior signum arched, broad, both apices broad, protuberances thornlike; two leaf-shaped posterior signa, spike needle-shaped, base strongly elongated.

Biology: Unknown. The type locality in Ronda was a roadside meadow, subsequently the roadworks has destroyed the habitat. Most specimens were netted from *Ononis* sp.

Distribution: Known only in southern Spain.

Derivation of name: The specific name refers to the collecting locality of the holotype.

***Pleurota pyrenaella* Tabell, sp. nov.** (Figures 18-19, 36, 47, 51)

Barcode Index Number: BOLD:ADI2982

Type material: Holotype ♂ (GP 5710 J. Tabell, DNA sample 25823 Lepid Phyl): SPAIN, Aragón, Huesca, 5.5 km SW Sabiñánigo, 740 m, N42.47143 W0.38573, 8-VII-2016, J. Tabell leg. (coll. MZH), BOLD sample ID: MM25823, <http://id.luomus.fi/GBT.25>

Paratypes: 23 ♂ (GP 5713 J. Tabell; GP 5869 J. Tabell, DNA sample 25825 Lepid Phyl; GP 5870 J. Tabell, DNA sample 25592 Lepid Phyl; DNA sample 25593 Lepid Phyl; GP 5872 J. Tabell), 2 ♀ (DNA sample 25590 Lepid Phyl, DNA sample 25591 Lepid Phyl), same collecting data as holotype; 1 ♂, same collecting data, but 6-VII-2019; 6 ♂ (DNA sample 26330 Lepid Phyl), Spain, Aragón, Huesca, 2 km N Jaca, 800 m, 42.59453 -0.54540, 6-VII-2019, J. Tabell leg. (all coll. TAB, 2 exx. Coll. MNCN).

Diagnosis: *P. pyrenaella* is a small species which externally resembles the Spanish species *P. hebetella* and *P. amaurodoxa*, but the forewing is paler. The male genitalia can be distinguished from those of *P. hebetella* by narrower uncus, the shape of gnathos (smaller area with scobination, apex less rounded) and narrower valval lobe. Compared to *P. amaurodoxa*, the uncus is shorter, the gnathos narrower, and the posterior lobe of juxta shorter. In the female genitalia of *P. pyrenaella*, both apophyses are shorter, and the posterior signa and the spines of anterior signum are shorter.

Molecular data: Seven specimens of *P. pyrenaella* were sequenced, resulting in 658 bp (n=6) and 654 bp (n=1) barcodes. The nearest neighbour to *P. pyrenaella* is *P. amaurodoxa*, with a 3.49 % divergence. The barcodes of *P. pyrenaella* exhibit 0.15 % intraspecific variation.

Description: Adult. Wingspan 10.5-14 mm, one male 15.5 mm. Labial palpus mixed with off-white, brown and pale brown scales, ventrally darker, in female paler, about 5.1x as long as diameter of eye (1st and 2nd palpomeres), 3rd palpomere 0.4x length of 1st and 2nd palpomeres. Antenna brown, 0.75x length of forewing. Frontal tuft, neck, tegula and thorax off-white, mixed with pale brown. Forewing densely covered by off-white, pale brown-tipped scales, without longitudinal lines and dark spots, except for off-white costal line from base to 1/2, in female forewing is more ochre. Fringe off-white with brown median line. Hindwing and fringe dark grey. Abdomen slightly lustrous, dark grey, each segment with a transverse row of ochre scales.

Male genitalia: Uncus thimble-shaped from ventral view, elongate, lined with several bristles of different length, distal margin concave. Gnathos 1.5x as long as uncus, funnel-shaped from ventral view, evenly tapered towards apex, largely smooth, with shallow medial and apical crests, medially surfaced by small nodules. Valva elongate, upwards oblique, thimble-shaped; sacculus long, covered with long bristles. Anterior extension of juxta straight, narrow and long; median part with a broad plate; posterior lobe almost reaching the apex of uncus, apex with a small tooth; valval lobe elongate, upwards oblique, apex evenly rounded, lined with several long bristles, apical half parallel-sided, basal part bulged. Phallus curved, parallel-sided, apex acute, with one weakly sclerotized cornutus and a group of numerous tiny spines, apical 1/4 with a wedge-shaped sclerotization.

Female genitalia: Papilla analis ovoid, narrow, apical half covered with bristles. Posterior apophysis 3.75x as long as papilla analis and 1.5x as long as anterior apophysis, which is 1.5x as long as segment 8. Segment 8 longitudinally elongated, membranous, quadrate, dorsolaterally reinforced by sclerotized band; branch of anterior apophysis apically fused, U-shaped, weakly sclerotized; ventral longitudinal sclerotization narrow, shorter than segment 8. Antrum tubular, sclerotized, parallel-sided. Ductus bursae slightly expanded towards corpus bursae. Corpus bursae rounded, with one arched broad signum with two protuberances, and two leaf-shaped signa.

Biology: Unknown. The specimens were netted in the afternoon around *Genista* sp., females were swept from white-flowering chrysanthemums.

Distribution: Known only from northern Spain.

Derivation of name. The specific epithet refers to the collecting area.

***Pleurota balearica* Tabell & Honey, sp. nov.** (Figures 20-21, 37, 48, 51)

Barcode Index Number: BOLD:ADY6686

Type material: Holotype ♂ (GP 5989 J. Tabell, DNA sample 26270 Lepid Phyl [barcoding failed]): SPAIN, Mallorca, Boquer valley - by day, 13-V-2007, M. R. Honey leg. (coll. NHMUK). Paratypes: 2 ♂ (DNA sample 26268 Lepid Phyl [barcoding failed]), same collecting data as holotype; 1 ex. [abdomen missing], Mallorca, Cuber reservoir by day, 3-VI-2000, M. R. Honey leg.; 2 ♂, Mallorca, Bocquer valley, 25-V-2001, M. R. Honey leg.; 1 ♂, Mallorca, Puig de Sant Marti - by day, 19-V-2007, M. R. Honey leg.; 1 ♂ ibidem, Cova Sant Marti; 3 ♂ (DNA sample 26269 Lepid Phyl [barcoding failed]), Mallorca, Son Carbata Sa Calobra road - by day, 21-V-2007, M. R. Honey leg.; 3 ♀ (DNA sample 26266 Lepid Phyl [barcoding failed]; DNA sample 26267 Lepid Phyl), Cabrera, beach - by day, 18-IV-2012, M. R. Honey leg.; 1 ♂, Eivissa, Cap d'Es Falcó, Pinar no fum, 30-IV-2006, I. Ferris & M. R. Honey leg.; 2 ♀ (GP 6471 J. Tabell), Eivissa, Can Savi, Sant Llorenç de Balàfia, 5-V-2006 swept at dusk, I. Ferris & M. R. Honey leg. (all colls. NHMUK and TAB).

Diagnosis: A small species. Externally *P. balearica* is somewhat similar to *P. pleurotella*, but smaller size and beige colour (grey in *P. pleurotella*) are separating characters. In the male genitalia, the combination of the gnathos, the valval lobe and the posterior lobe of juxta distinguish *P. balearica* from other species. In the female genitalia, the shape of posterior signa is characteristic.

Molecular diagnosis: Of five samples sent for barcoding, four failed and one resulted in a 651 bp DNA barcode. The nearest neighbour to *P. balearica* is morphologically divergent *P. candia* Back, 1973, with a 7.13 % divergence.

Description: Adult. Wingspan 8-10.5 mm. Labial palpus 3-3.5x as long as diameter of eye (1st and 2nd palpomeres), 3rd palpomere short, mostly concealed by scales, off-white, mixed with pale beige. Antenna setose in male, naked in female, brown, annulated with beige. Head and tegula pale beige, thorax mixed with beige. Forewing pale beige: subcostal line pale brown, from base to apex, gradually expanding towards apex, costal line absent; medial area white, with distinct blackish brown discal, discocellular and plical spots. Fringe line indistinct, formed of a few blackish brown scales; cilia long, pale grey, basally pale beige. Hindwing pale brown, cilia pale greyish brown. Abdomen slightly lustrous, pale brown or beige, each segment with a transverse row of ochre scales.

Male genitalia: Uncus triangular from ventral view, lined with few long bristles, apex blunt. Gnathos 1.5x as long as uncus, funnel-shaped from ventral view, medially covered with small nodules. Valva upwards oblique, ventral margin convex; cucullus narrow, thimble-shaped. Median part of juxta narrow, funnel-shaped, posterior lobe very long, narrow, exceeding markedly apex of uncus. Valval lobe long, finger-shaped, parallel-sided, covered apically with few long bristles. Phallus curved, tapered towards apex, with elongated bundle of small needle-shaped cornutus and slightly curved plate-shaped cornutus.

Female genitalia: Papilla analis ovoid, short, covered with bristles. Posterior apophysis 9.4x as long as papilla analis and 1.5x as long as anterior apophysis, which is 1.6x as long as segment 8. Segment 8 longitudinally elongated, membranous, quadrate, dorsolaterally reinforced by sclerotized band; branch of anterior apophysis U-shaped, weakly sclerotized; ventral longitudinal sclerotization narrow, slightly shorter than segment 8. Antrum tubular, anterior $\frac{2}{3}$ sclerotized. Ductus bursae slightly expanded towards corpus bursae. Corpus bursae rounded; anterior signum strongly arched, narrow, protuberances long, thornlike; two leaf-shaped posterior signa, spike curved, long, base small.

Biology: Unknown.

Distribution: Known from three Balearic Islands (Spain): Mallorca, Ibiza and Cabrera.

Derivation of name: The specific epithet refers to the collecting area of the specimens.

***Pleurota malagaensis* Tabell & Nupponen, sp. nov.** (Figures 22, 38)

Barcode Index Number: BOLD:-

Type material. Holotype ♂ (GP 5589 J. Tabell): SPAIN, Málaga, Fuengirola, 22-V-1989, H. Holmberg leg., Coll. T. & K. Nupponen. Paratypes: 2 ♂, same collecting data as holotype (colls. NUP and TAB).

Diagnosis: Externally *P. malagaensis* can be distinguished by a small size, pale brown forewing with scattered brown scales and a narrow white costal stripe, and a short 3rd segment of labial palpus. In the male genitalia, the characteristic shape of uncus and gnathos are diagnostic. The female is unknown.

Molecular diagnosis: Barcodes not available.

Description: Adult. Wing 5.5-6.5 mm (not spread). Labial palpus mixed with white, pale brown and brown, about 5x as long as diameter of the eye (1st and 2nd segments), 3rd segment 0.15x length of 1st and 2nd segments. Antenna annulated with dark brown and pale brown, apex dark brown. Frontal tuft, neck, tegula and thorax mixed with white and pale brown. Forewing pale brown with faint white streaks, scattered with brown and dark brown scales; costal line white, from base to near apex; subcostal line pale brown, darker at basal half, slightly expanded towards apex. Fringe white, fringe line pale brown. Hindwing not visible.

Male genitalia: Uncus inverted funnel-shaped from ventral view, lined with few long bristles, apex sharp. Gnathos 1.7x as long as uncus, broad, arm long, fluke-shaped from ventral view, medially and apically covered with small nodules, apical part triangular, apex blunt. Valva upwards oblique, ventral margin convex; cucullus club-shaped. Median part of juxta rounded, posterior lobe narrow, exceeding apex of uncus, apex armed with small tooth. Valval lobe small, club-shaped, covered with several long bristles. Phallus curved, tapered towards apex, apex sharp, with elongated bundle of small cornuti, apical $\frac{1}{7}$ with small spines dorsally.

Female genitalia: Unknown.

Biology: Unknown.

Distribution: Known only from the southernmost Spain in the province of Andalusia.

Derivation of name: The specific epithet refers to the collecting area of the specimens.

***Pleurota grancanariella* Tabell, sp. nov.** (Figures 23, 39, 49, 51)

Barcode Index Number: BOLD:ADY6687

Type material. Holotype ♂ (GP 5563 J. Tabell, DNA sample 24934 Lepid Phyl [barcoding failed]): Hispana [SPAIN], Gran Canaria, Maspalomas, 19-III-1992, P. Grotenfelt [leg.] (coll. MZH), <http://id.luomus.fi/GBT.26>. Paratypes: 1 ex, same collecting data as holotype; 1 ♀ (GP 5567 J. Tabell, DNA sample 24935 Lepid Phyl [barcoding failed], same collecting data, but 14-III-1992 (coll. TAB); 1 ♀, same collecting data, but 23-III-1981; 3 ♀, same collecting data, but 24-III-1981; 2 ♂, same collecting data, but 15-III-1983; 3 ♀, same collecting data, but 17-III-1983 (coll. MZH, 1 ex. coll. MNCN); 2 ♂ (DNA sample 26272 Lepid Phyl; DNA sample 26273 Lepid Phyl), Canary Islands, Gran Canaria, 6 km N Maspalomas, 400 m, 27.813347-15.581433, 23-III-2019, J. Tabell leg. (coll. TAB); 1 ♂, Spain, Gran Canaria, Maspalomas, 17-III-1996, K. Nupponen & J. Junnilainen leg. (coll. JUJ); 2 ♂, 5 ♀, Spain, Gran Canaria, El Sao, 110 m, 4-23-III-2019, leg. P. Falck; 1 ♂, same collecting data, but 1-13-IV-2022; 1 ♂, 2 ♀, Spain, Gran Canaria, Degollada de la Yegua, 415 m, leg. P. Falck (coll. Falck).

Diagnosis: Externally somewhat similar to *P. tricolor* Tabell, 2019, known from Morocco, but the forewing is more elongated and greyer, and the cilia of antenna is longer.

Molecular diagnosis: Two specimens were sequenced successfully, resulting in 654 and 653 bp barcode fragments. The nearest neighbour to *P. grancanariella* is *P. algeriella* Baker, 1885 from Algeria, with a 6.44 % divergence. The barcodes of *P. grancanariella* exhibit 0.15 % intraspecific variation.

Description: Adult. Wingspan 19-20 mm. Labial palpus greyish white, ventrally dark brown,

dorsolaterally with a blackish brown apical spot, about 6.4x as long as diameter of the eye (1st and 2nd segments), 3rd segment 0.3x length of 1st and 2nd segments. Antenna setose, greyish brown. Frontal tuft, neck, tegula and thorax mixed with white and pale greyish brown. Forewing pale greyish brown mixed with white and scattered by brown scales; costal line white, indistinct; subcostal line brown, parallel-sided, at base narrower; median line from base to $\frac{2}{3}$, white, moderately broad, dorsal margin indistinctly edged, dent narrow, from near base to $\frac{1}{3}$; dorsal line absent. Fringe line brown. Fringe cilia basally white, apically brown. Hindwing and fringe cilia brown.

Male genitalia: Uncus thimble-shaped from ventral view, elongated, lined with several bristles of different length, apex blunt. Gnathos 1.5x as long as uncus, from ventral view elongate, fluke-shaped, medially expanded and surfaced by small scales, apex with a small rectangular protuberance. Valva elongate, upwards oblique; cucullus thimble-shaped. Anterior extension of juxta straight, short, median part rounded, posterior lobe almost extended to apex of uncus, apex armed with a small tooth. Valval lobe gutter-shaped, upcurved, covered with several small nodules and short bristles distally. Phallus curved, slightly tapered towards apex, with one small plate-shaped cornutus surrounded by a few tiny spines.

Female genitalia: Papilla analis ovoid. Posterior apophysis 10x as long as papilla analis and 1.7x as long as anterior apophysis. Segment 8 elongated longitudinally, rectangular, membranous, dorsolaterally reinforced by sclerotized band, lined with a few long bristles distally, ventral longitudinal sclerotization narrow, as long as segment 8, branch of anterior apophysis narrow. Antrum tubular, as long as segment 8, membranous, anterior $\frac{1}{4}$ slightly tapered and sclerotized. Ductus bursae membranous, parallel-sided. Corpus bursae ovoid, with one robust arched signum bearing two short, thorn-like protuberances, and two leaf-shaped signa.

Biology: Unknown.

Distribution: Endemic to Gran Canaria, where it is known in Maspalomas and surrounding slopes and in El Sao.

Derivation of name: The specific epithet refers to the island of Gran Canaria, where the moths were collected.

***Pleurota subnobilella* Tabell, sp. nov.** (Figures 24-26, 40-41, 50-51)

Barcode Index Number: BOLD:ACW1897

Type material. Holotype ♂ (GP 5900 J. Tabell, DNA sample 26130 Lepid Phyl): SPAIN, Alicante, Albatera 9 km NNW, 460 m, N38.25317 W0.91450, 21-V-2016, J. Tabell leg. (coll. MZH), <http://id.luomus.fi/GBT.27>, BOLD sample ID:MM26130. Paratypes: 1 ♀ (GP 6348 J. Tabell, DNA sample 26199 Lepid Phyl), same collecting data as holotype; 2 ♂♀ (GP 5303 J. Tabell, DNA sample 23663 Lepid Phyl; GP 5399 J. Tabell, DNA sample 23658 Lepid Phyl), Spain, Alicante, San Miguel de Salinas 6 km NW, 22-IV-2009, J. Tabell leg. (coll. TAB, 1 ex. coll. MNCN).

Diagnosis: Externally *P. subnobilella* resembles *P. nobilella* and *P. honorella*. *P. subnobilella* can be distinguished from these species by the narrower median line, which may be interrupted at the junction of longitudinal median dent, and by white fringe line. *P. subnobilella* can be distinguished from *P. nobilella* also by a lighter subcostal line. The male genitalia are similar to those of *P. nobilella*, but the basal half of gnathos is broader, the valval lobe longer and the posterior lobe of juxta more robust. The female genitalia are characterized by long apophyses, short antrum and broad ductus bursae.

Molecular diagnosis: All four type specimens were sequenced successfully, resulting in 658 (n=3) and 653 bp DNA barcodes. The nearest named neighbour to *P. subnobilella* is *P. sobriella*, with a 1.66 % divergence. The barcodes of *P. subnobilella* exhibit no intraspecific variation. See also *Remarks* for *P. nobilella*.

Description: Adult. Wingspan 21.5-22 mm. Labial palpus brownish white, ventrally mixed brown and white, inner side dark brown, dorsolaterally with a dark brown apical spot, about 6.6x as long as diameter of the eye (1st and 2nd segments), 3rd segment 0.25x length of 1st and 2nd segments. Antenna brown. Frontal tuft and neck brownish white, tegula ochre, thorax laterally white, medially mixed ochre

and pale grey. Costal line white, from near base to apex, basally broader; subcostal line ochre, evenly expanded towards apex; median line from base to near apex, white, at junction of dent of median line interrupted, then slightly expanded, apical $\frac{1}{5}$ tapered, dent long, narrow, not reaching termen; fringe line off-white; dorsal line parallel-sided, white, from base to $\frac{1}{4}$; median area yellowish ochre. Fringe pale brown, apically off-white. Hindwing grey, fringe concolorous, apically white to off-white.

Male genitalia: Uncus thimble-shaped from ventral view, lined with several bristles of different length, apex blunt. Gnathos 1.6x as long as uncus, from ventral view elongate, funnel-shaped, medially bulged and covered with small nodules, gradually tapered towards apex, apex beak-shaped. Valva elongate, upwards oblique, ventral margin slightly curved. Anterior extension of juxta straight, median part rounded, posterior lobe broad, not extended to uncus, apex armed with a small tooth. Valval lobe fusiform, covered with several short bristles apically, membranous basally. Phallus curved, slightly tapered towards apex, with one robust plate-shaped cornutus surrounded by numerous tiny spines, apical $\frac{1}{4}$ dorsally covered with small spines.

Female genitalia: Papilla analis oval, covered with bristles of different length. Apophyses long; posterior apophysis 7.25x as long as papilla analis and 1.6x as long as anterior apophysis, which is 1.6x as long as segment 8. Segment 8 longitudinally elongated, rectangular, membranous, dorsolaterally reinforced by sclerotized band, distal margin ventrally sparsely covered with bristles, ventral longitudinal sclerotization narrow, shorter than segment 8, branch of anterior apophysis long, not fused medially. Antrum tubular, short, membranous, colliculum sclerotized. Ductus bursae membranous, parallel-sided, broad, posterior $\frac{1}{5}$ narrow. Corpus bursae roundish, with an arched broad anterior signum with two narrow and long sclerotized thorn-like protuberances, and two small leaf-shaped posterior signa.

Biology: Unknown. Most specimens were collected together with a series of *P. nobilella* under a wire line at an elevation of 460 m.

Distribution: Known only from two type localities in the province of Alicante in south-eastern Spain.

Derivation of name: The specific epithet refers to close affinity with *P. nobilella*.

Acknowledgements

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*Jukka Tabell
Laaksotie, 28
FI-19600 Hartola
FINLANDIA / FINLAND
E-mail: jukka.tabell@phnet.fi
<https://orcid.org/0000-0002-3477-5360>

Théo Leger
Museum für Naturkunde Berlin
Invalidenstraße, 43
D-10115 Berlin
ALEMANIA / GERMANY
E-mail: Theo.Leger@mf.n.berlin
<https://orcid.org/0000-0001-7330-3940>

Timo Nupponen
Staffanintie, 10 A
FI-02360 Espoo
FINLANDIA / FINLAND
E-mail: timo.nupponen@capgemini.com
<https://orcid.org/0009-0003-8532-2171>

Martin Honey
Natural History Museum
Department of Life Sciences
Cromwell road
GB-London SW7 5BD
REINO UNIDO / UNITED KINGDOM
E-mail: m.honey@nhm.ac.uk
<https://orcid.org/0000-0002-7282-5074>

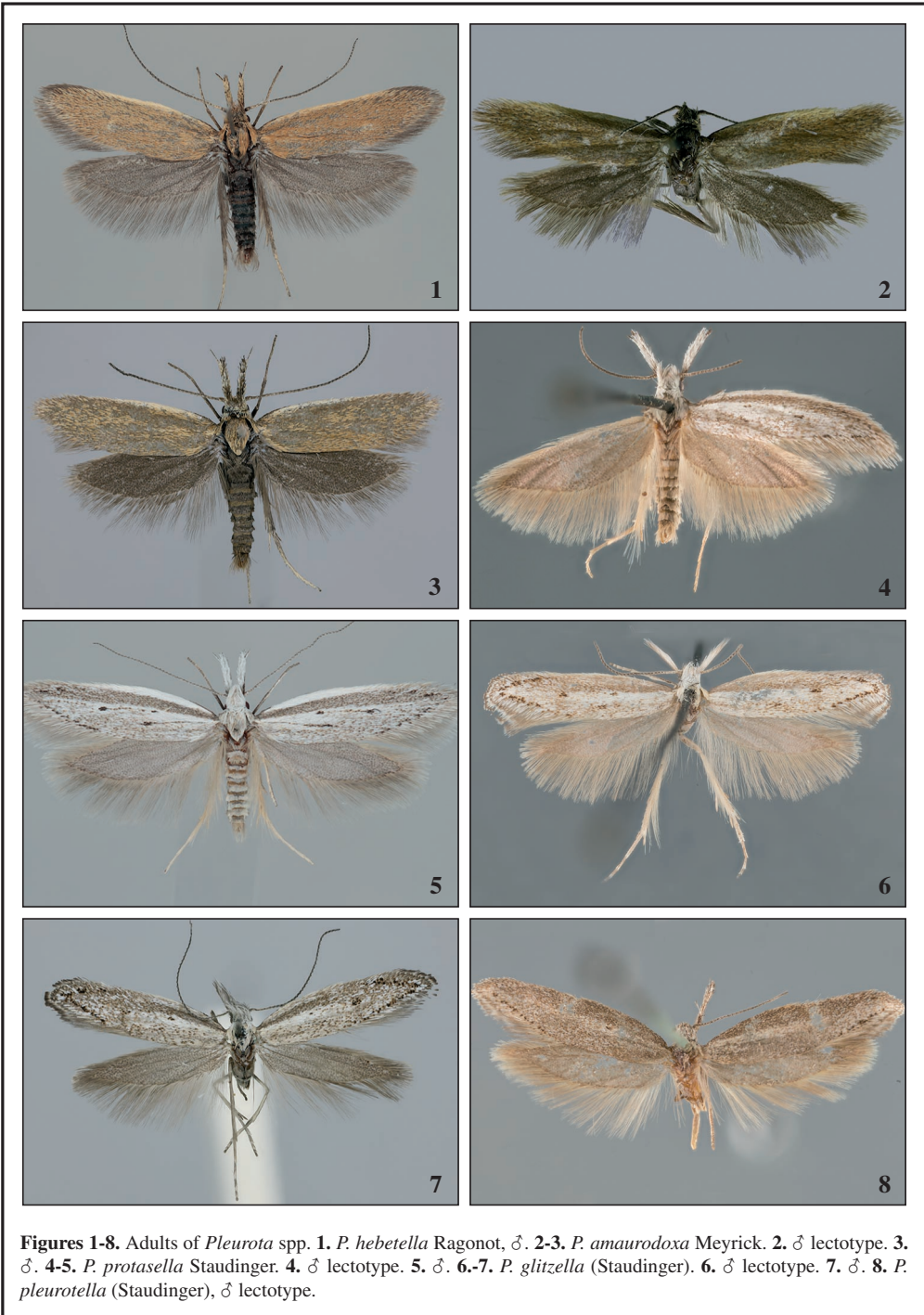
Marko Mutanen
Ecology and Genetics research unit
University of Oulu
P. O. Box, 3000
FI-90014 University of Oulu
FINLANDIA / FINLAND
E-mail: marko.mutanen@oulu.fi
<https://orcid.org/0000-0003-4464-6308>

Pasi Sihvonen
Finnish Museum of Natural History
University of Helsinki
P.O. Box 17
FI-00014 Helsinki
FINLANDIA / FINLAND
E-mail: pasi.sihvonen@helsinki.fi
<https://orcid.org/0000-0003-2237-9325>

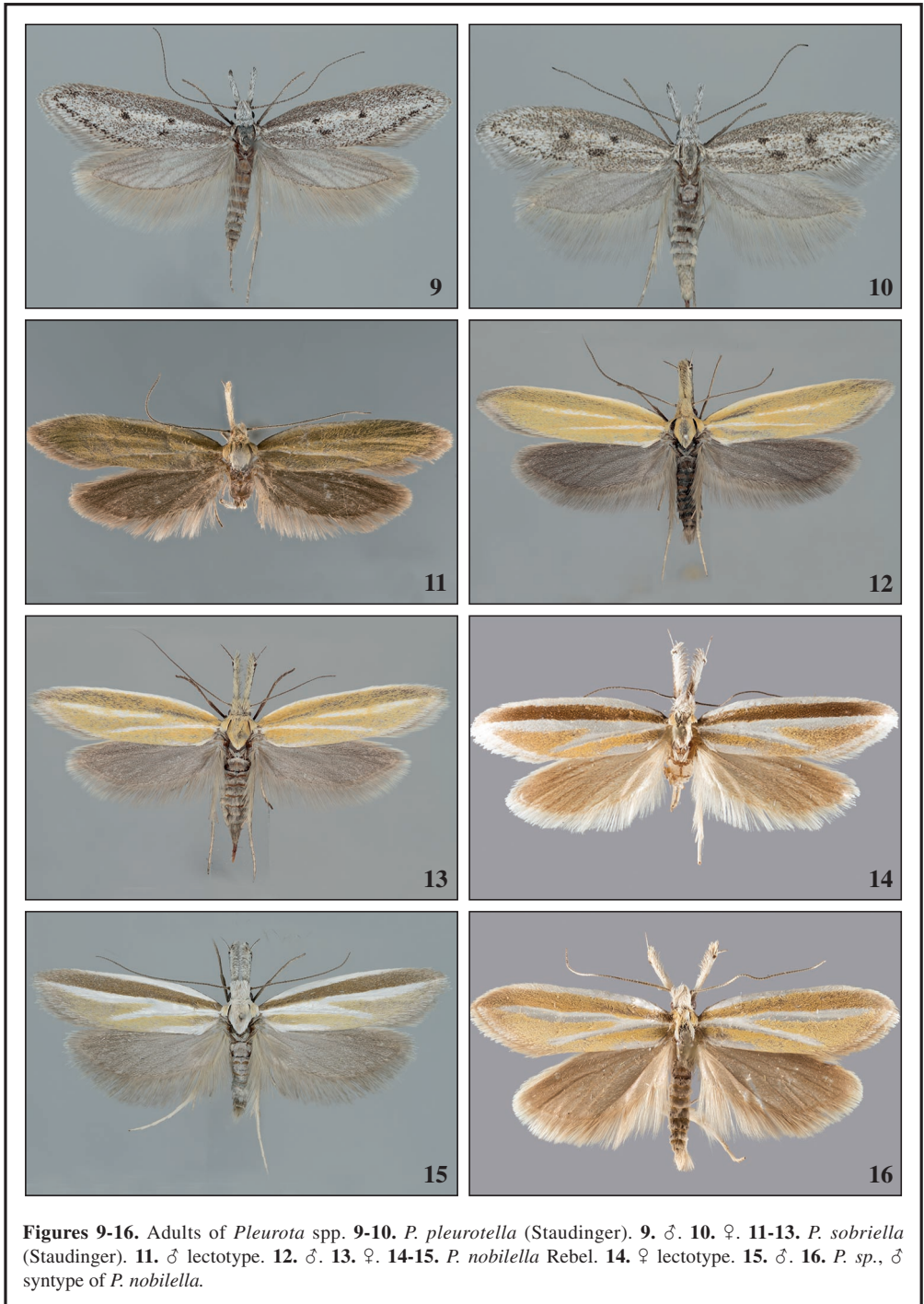
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Figures 1-8. Adults of *Pleurota* spp. **1.** *P. hebetella* Ragonot, ♂. **2-3.** *P. amaurodoxa* Meyrick. **2.** ♂ lectotype. **3.** ♂. **4-5.** *P. protasella* Staudinger. **4.** ♂ lectotype. **5.** ♂. **6-7.** *P. glitzella* (Staudinger). **6.** ♂ lectotype. **7.** ♂. **8.** *P. pleurotella* (Staudinger), ♂ lectotype.



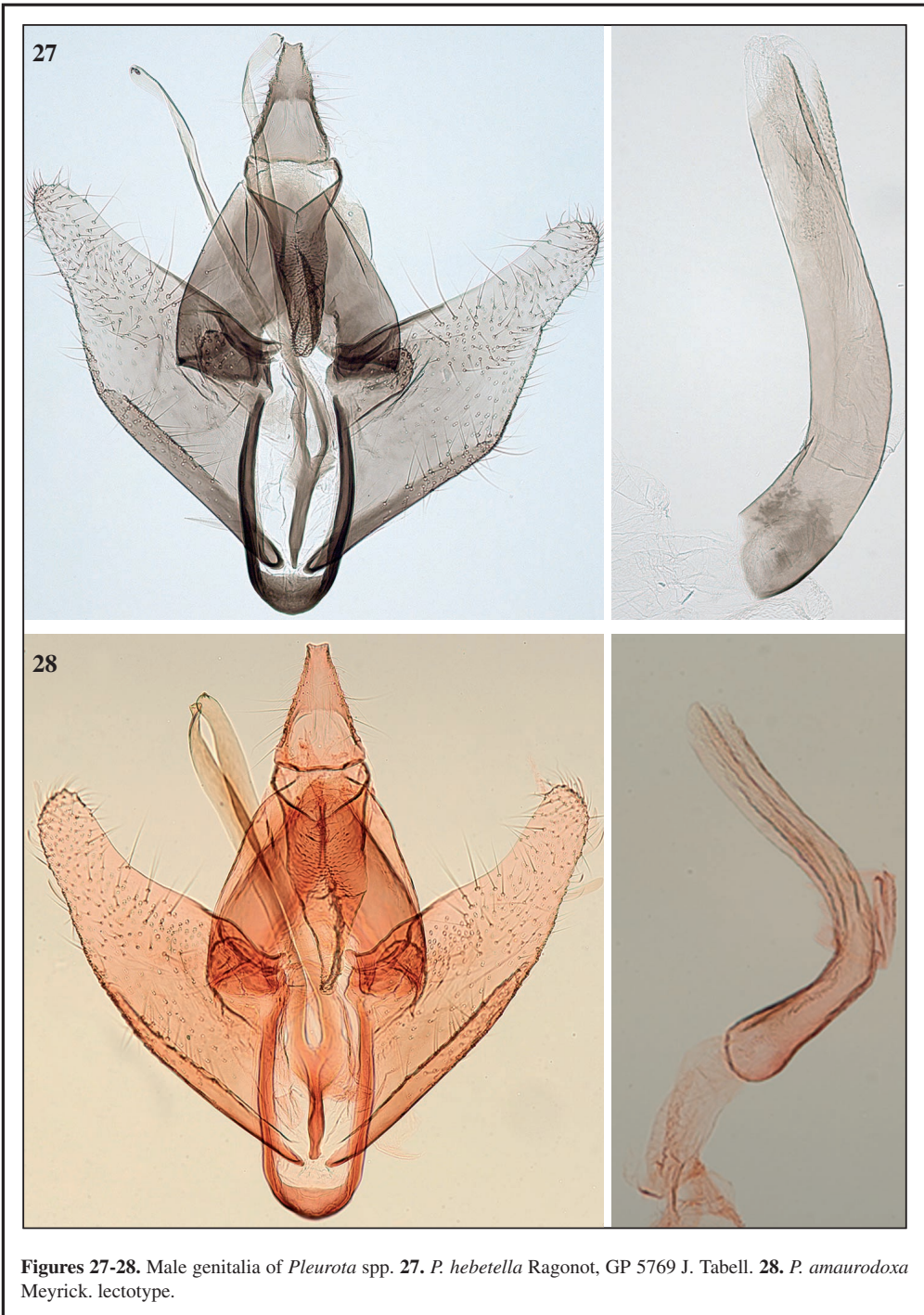
Figures 9-16. Adults of *Pleurota* spp. **9-10.** *P. pleurotella* (Staudinger). **9.** ♂. **10.** ♀. **11-13.** *P. sobriella* (Staudinger). **11.** ♂ lectotype. **12.** ♂. **13.** ♀. **14-15.** *P. nobilella* Rebel. **14.** ♀ lectotype. **15.** ♂. **16.** *P. sp.*, ♂ syntype of *P. nobilella*.



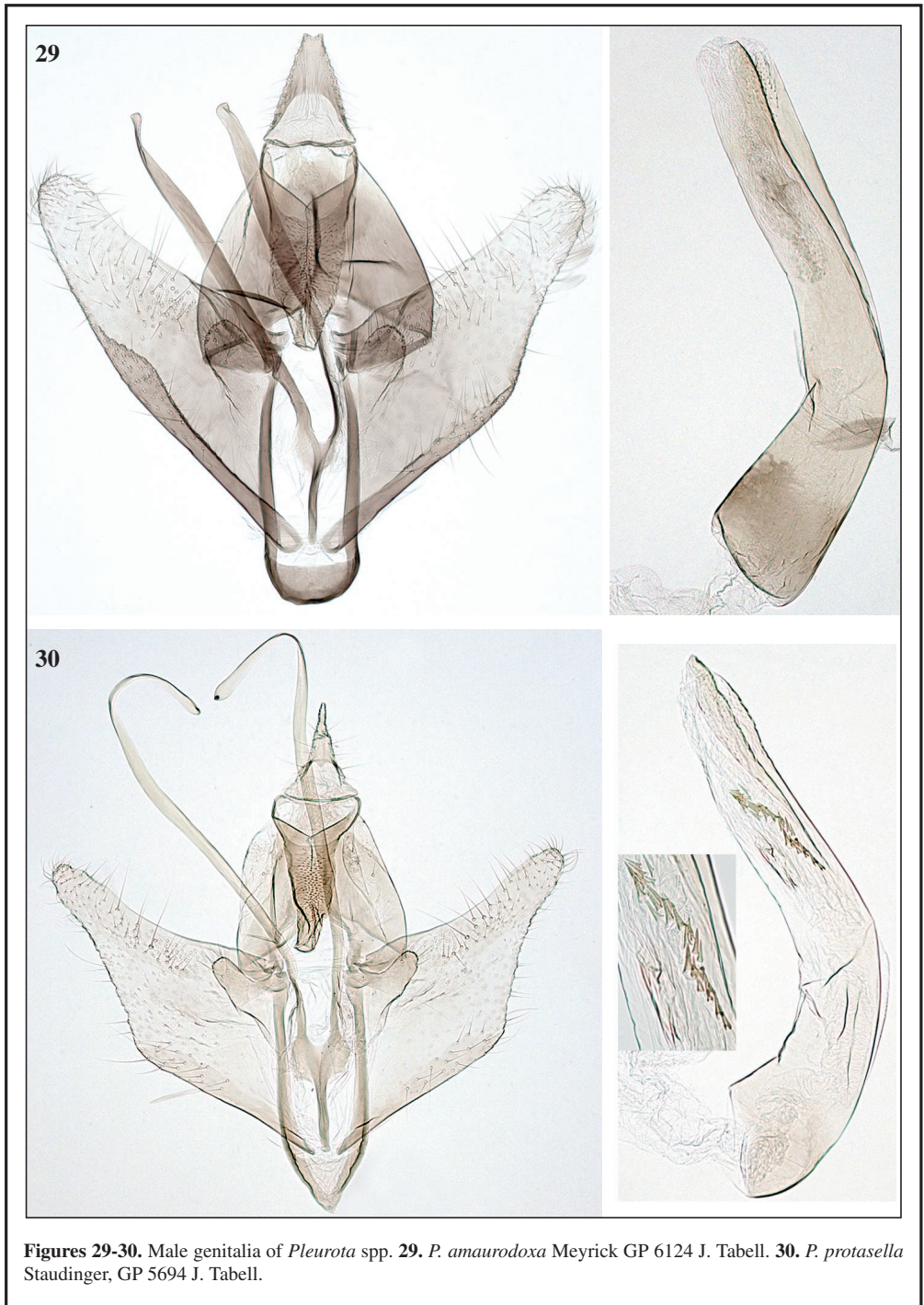
Figures 17-21. Adults of *Pleurota* spp. **17.** *P. rondaensis* sp. nov., ♂ holotype. **18-19.** *P. pyrenaella* sp. nov. **18.** ♂ holotype. **19.** ♀ paratype. **20-21.** *P. balearica* sp. nov. **20.** ♂ holotype. **21.** ♀ paratype.



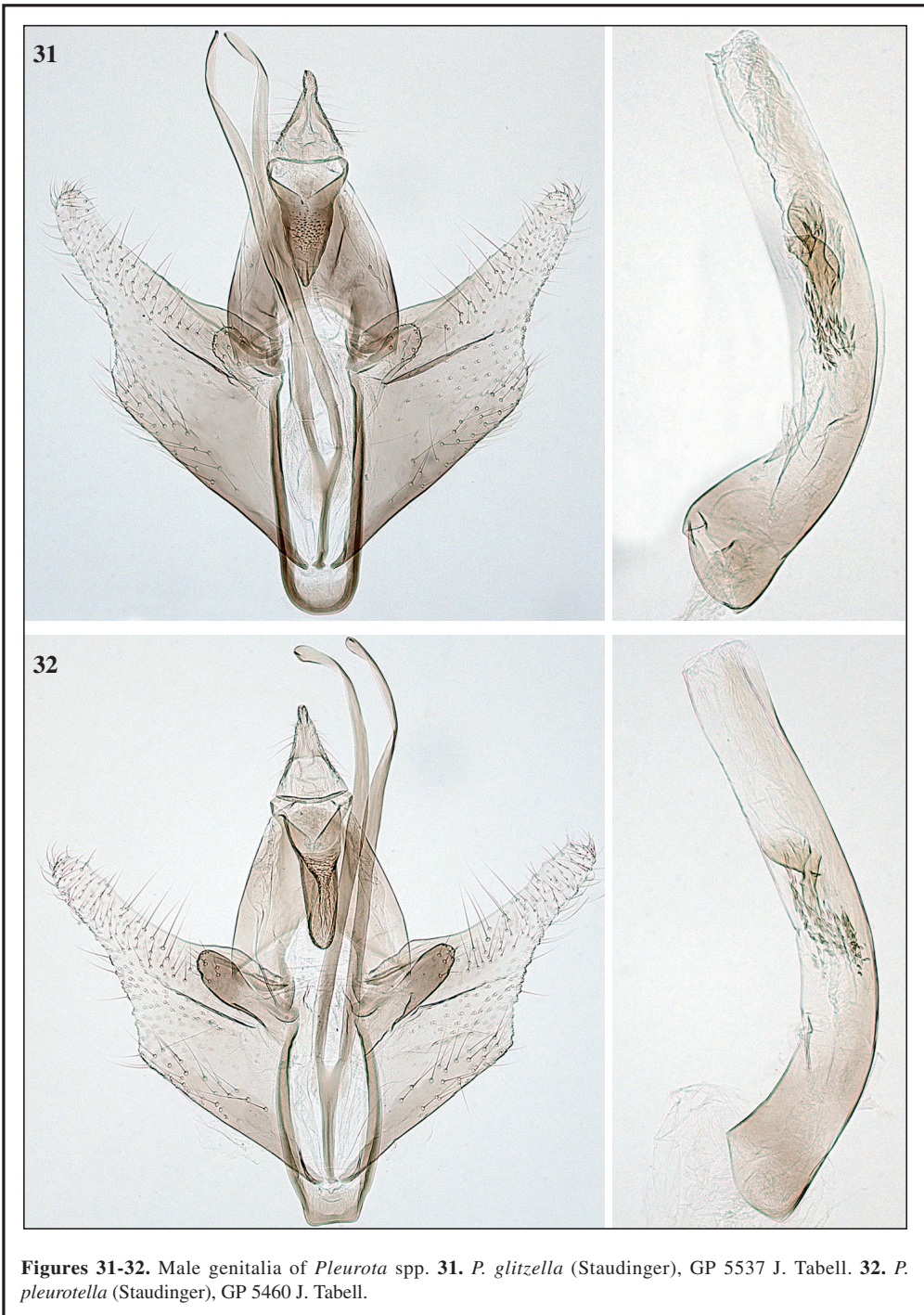
Figures 22-26. Adults of *Pleurota* spp. **22.** *P. malagaensis* sp. nov., ♂ holotype. **23.** *P. grancanariella* sp. nov., ♂ holotype. **24-26.** *P. subnobilella* sp. nov. **24.** ♂ holotype. **25.** ♂ paratype. **26.** ♀ paratype.



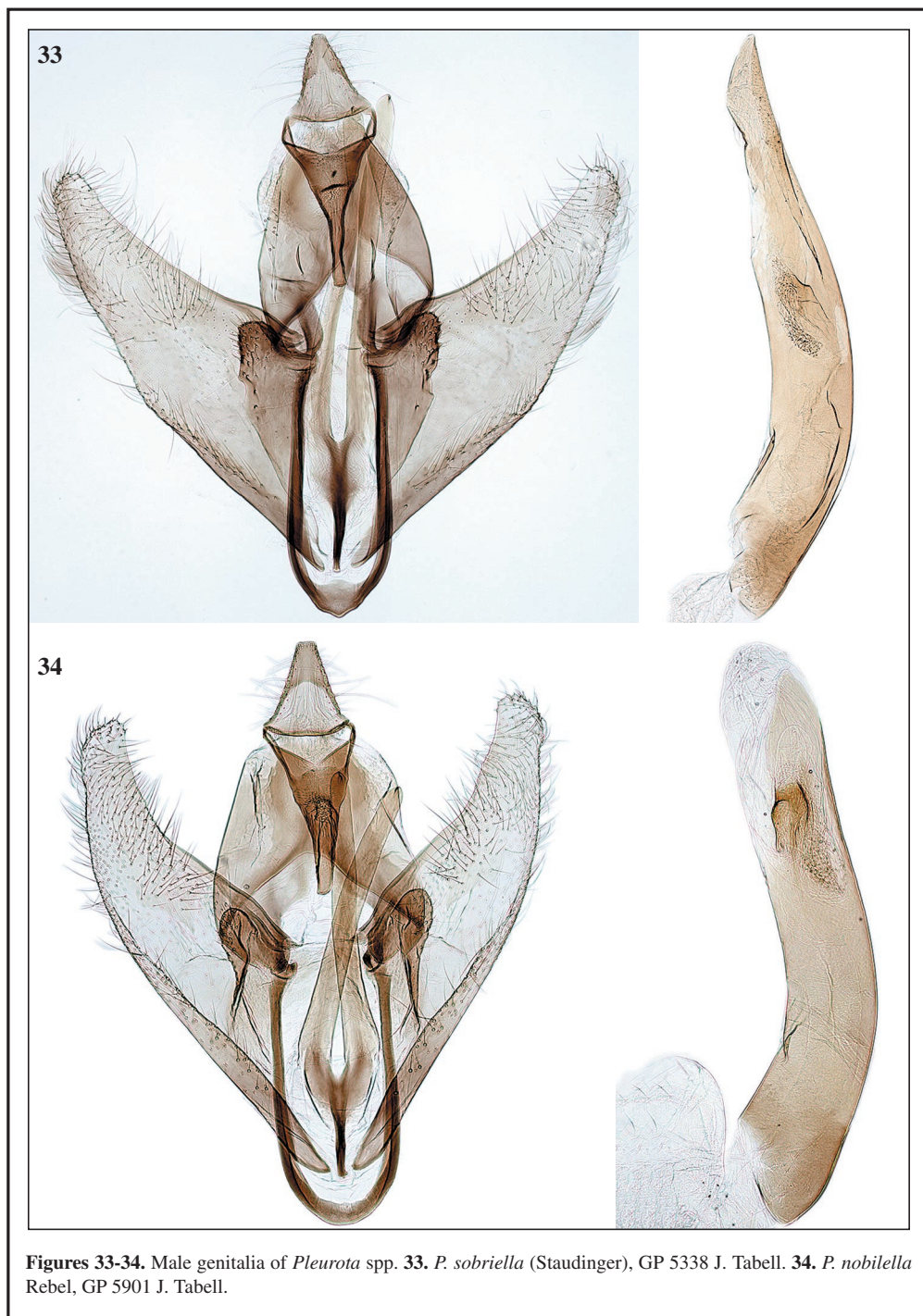
Figures 27-28. Male genitalia of *Pleurota* spp. **27.** *P. hebetella* Ragonot, GP 5769 J. Tabell. **28.** *P. amaurodoxa* Meyrick. lectotype.



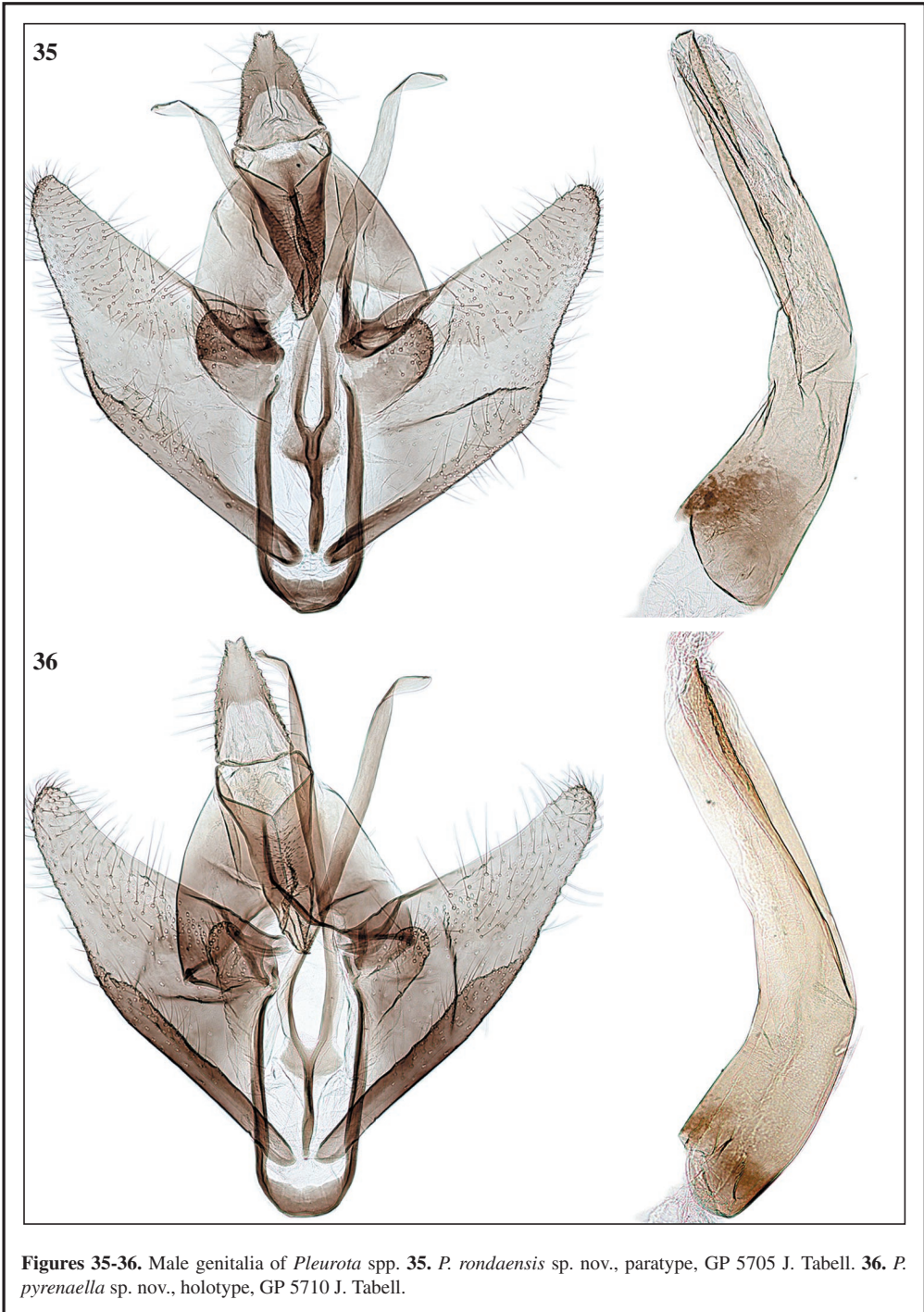
Figures 29-30. Male genitalia of *Pleurota* spp. **29.** *P. amaurodoxa* Meyrick GP 6124 J. Tabell. **30.** *P. protasella* Staudinger, GP 5694 J. Tabell.



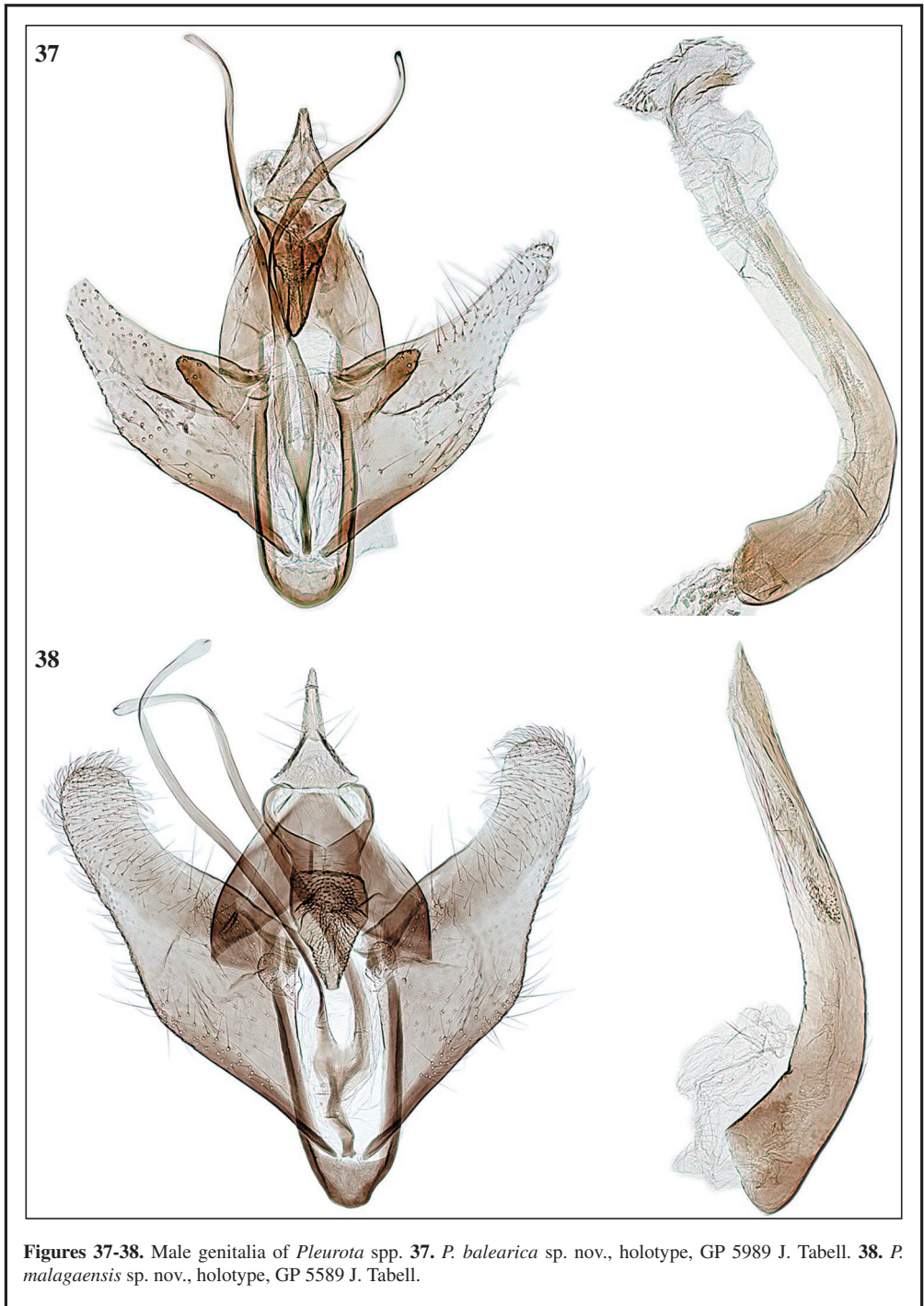
Figures 31-32. Male genitalia of *Pleurota* spp. **31.** *P. glitzella* (Staudinger), GP 5537 J. Tabell. **32.** *P. pleurotella* (Staudinger), GP 5460 J. Tabell.



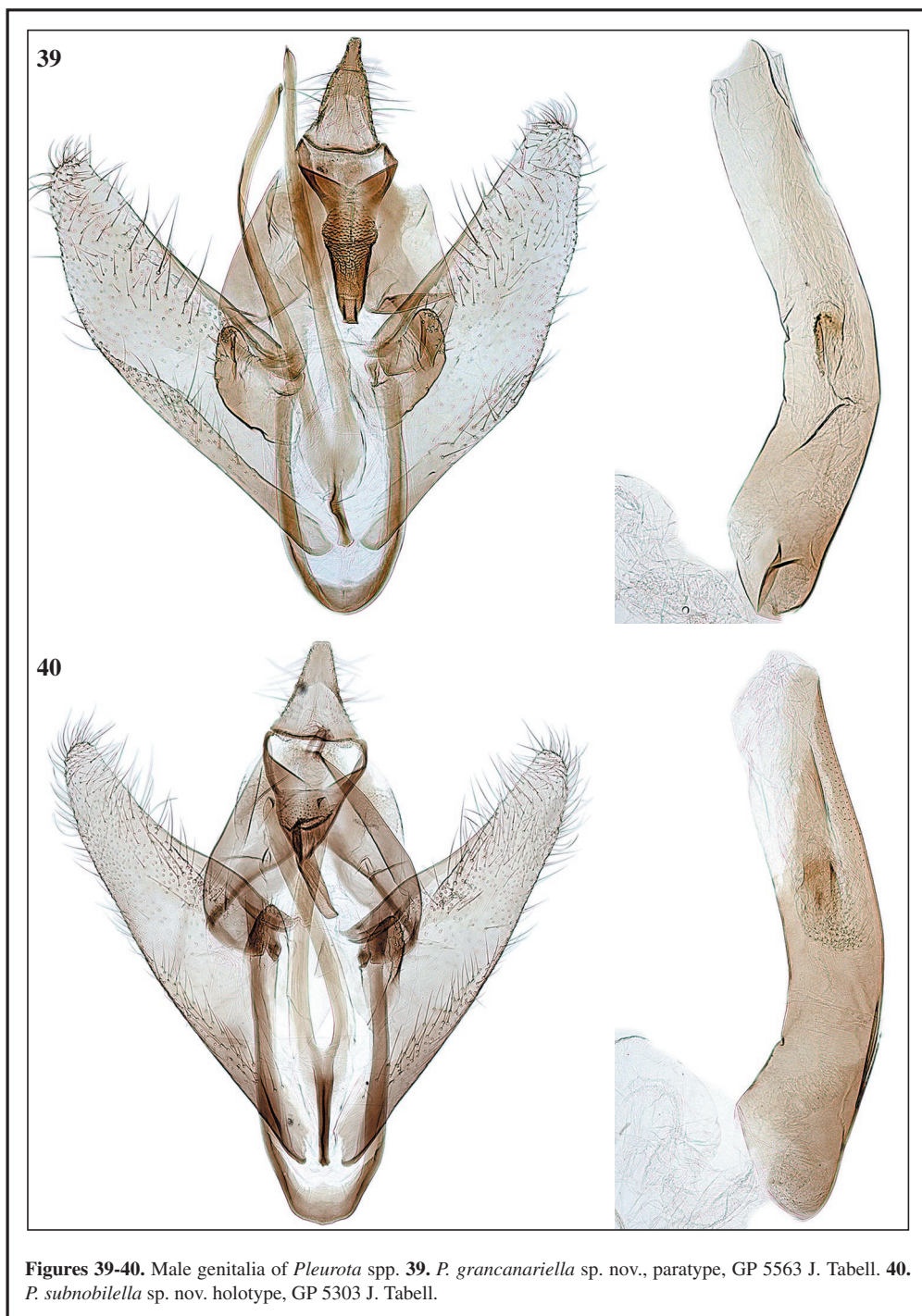
Figures 33-34. Male genitalia of *Pleurota* spp. **33.** *P. sobriella* (Staudinger), GP 5338 J. Tabell. **34.** *P. nobilella* Rebel, GP 5901 J. Tabell.



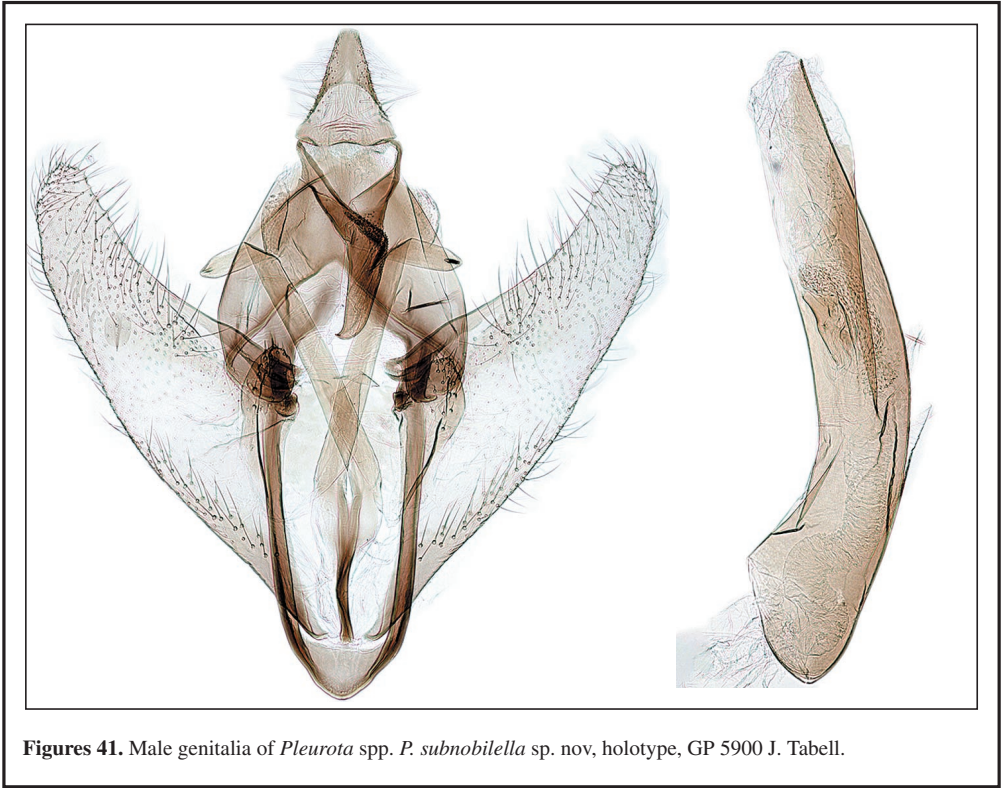
Figures 35-36. Male genitalia of *Pleurota* spp. **35.** *P. rondaensis* sp. nov., paratype, GP 5705 J. Tabell. **36.** *P. pyrenaella* sp. nov., holotype, GP 5710 J. Tabell.



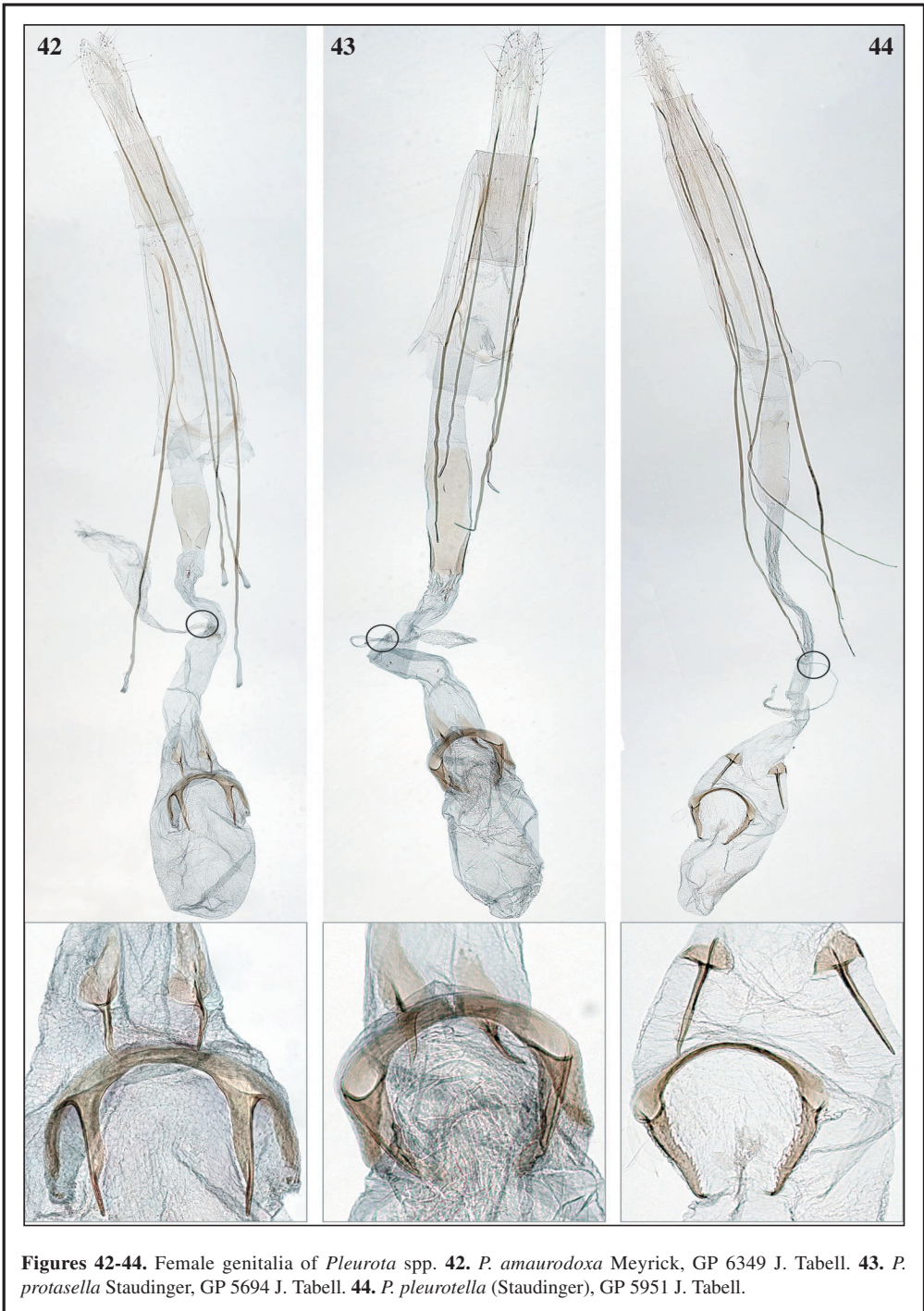
Figures 37-38. Male genitalia of *Pleurota* spp. **37.** *P. balearica* sp. nov., holotype, GP 5989 J. Tabell. **38.** *P. malagaensis* sp. nov., holotype, GP 5589 J. Tabell.

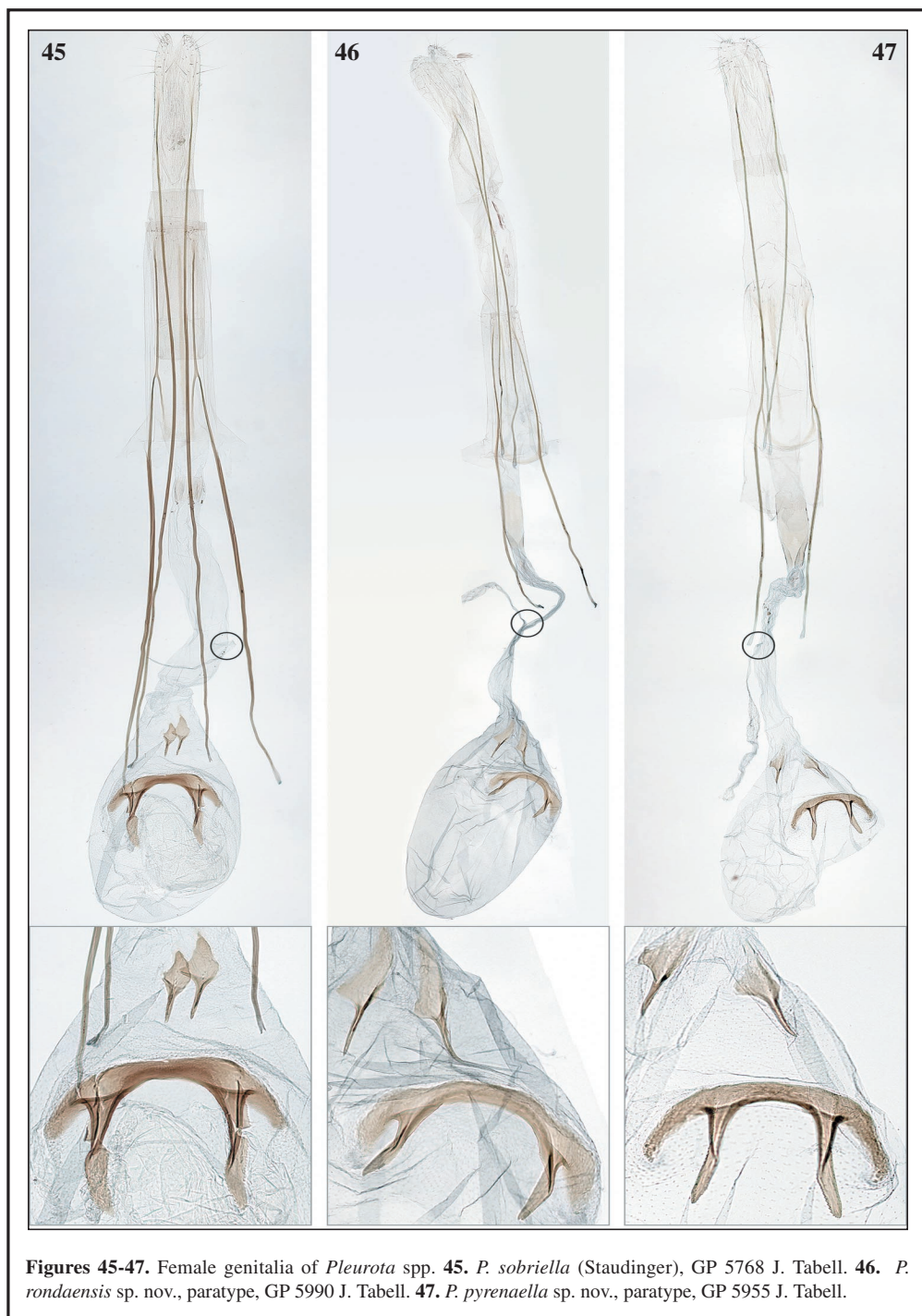


Figures 39-40. Male genitalia of *Pleurota* spp. **39.** *P. grancanariella* sp. nov., paratype, GP 5563 J. Tabell. **40.** *P. subnobilella* sp. nov. holotype, GP 5303 J. Tabell.



Figures 41. Male genitalia of *Pleurota* spp. *P. subnobilella* sp. nov, holotype, GP 5900 J. Tabell.





Figures 45-47. Female genitalia of *Pleurota* spp. **45.** *P. sobriella* (Staudinger), GP 5768 J. Tabell. **46.** *P. rondaensis* sp. nov., paratype, GP 5990 J. Tabell. **47.** *P. pyrenaella* sp. nov., paratype, GP 5955 J. Tabell.



Figures 48-50. Female genitalia of *Pleurota* spp. **48.** *P. balearica* sp. nov., paratype, GP 6471 J. Tabell. **49.** *P. grancanariella* sp. nov., paratype, GP 5567 J. Tabell. **50.** *P. subnobilella* sp. nov., paratype, GP 6348 J. Tabell.

