Atalanta **41** (3/4): 375-396, Würzburg (2010), ISSN 0171-0079

A review of the genus *Odonestis* Germar, 1812 with descriptions of two new species and one new subspecies

(Lepidoptera, Lasiocampidae)

by

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received 4.XII.2009

Abstract: A revision of *Odonestis* Germar, 1812 is undertaken. The genus consists of 19 species, 2 of them are described here as new: *Odonestis **germari*** **spec. nov.** from Sumatra and Borneo (type locality: Borneo, Selatan, 30 km E von Kandangan, Regenwald, 800 m, 15 km NE Loksado, 2°52' S, 115°38' E) and *O. **filigranica*** **spec. nov.** from the Andaman Isl. (type locality: India-Andaman Isl., North Andaman, Baratang Isl). A new subspecies, *O. erectilinea **frater*** **subspec. nov.** is described from Palawan (type locality: Philippinen, Palawan N., Mt. Cleopatra needle).
Two subspecies are raised here to full specific rank: *Odonestis belli* Tams, 1935 **stat. nov.** and *Odonestis ceylonica* Tams, 1935 **stat. nov.**
The following new synonymy is established: *Odonestis erectilinea erectilinea* (Swinhoe, 1904) = *Odonestis erectilinea barisana* Tams, 1935 **syn. nov.** and *Odonestis pruni rufescens* Kardakoff, 1928 = *Odonestis pruni japonensis* Tams, 1935 **syn. nov.**
The lectotype ♂ for *Arguda angulata* Grünberg, 1913 is designated here from MHUB.
A relationship between congeners and some outgroups is discussed.

Zusammenfassung: Die Gattung *Odonestis* Germar, 1812 wird revidiert. Diese umfaßt 19 Arten, zwei davon werden hier neu geschrieben: *Odonestis **germari*** **spec. nov.** aus Sumatra und Borneo (Typusort: Borneo, Selatan, 30 km E von Kandangan, Regenwald, 800 m, 15 km NE Loksado, 2°52' S, 115°38' E) und *O. **filigranica*** **spec. nov.** von den Andamanen (Typusort: India-Andaman Isl., North Andaman, Baratang Isl). Eine neue Unterart, *O. erectilinea **frater*** **subspec. nov.**,wird aus Palawan (Typusort: Philippinen, Palawan N., Mt. Cleopatra needle) beschrieben.
Zwei Unterarten werden auf Artstatus erhoben: *Odonestis belli* Tams, 1935 **stat. nov.** und *Odonestis ceylonica* Tams, 1935 **stat. nov.**
Die folgende neue Synonymie wird vorgeschlagen: *Odonestis erectilinea erectilinea* (Swinhoe, 1904) = *Odonestis erectilinea barisana* Tams, 1935 **syn. nov.** und *Odonestis pruni rufescens* Kardakoff, 1928 = *Odonestis pruni japonensis* Tams, 1935 **syn. nov.**
Von *Arguda angulata* Grünberg, 1913 wird aus dem MHUB ein Lectotypus ♂ designiert. Die verwandschaftlichen Beziehungen zwischen Arten innerhalb und außerhalb der Gattung wird diskutiert.

Introduction: The genus *Odonestis* was erected in 1812 by Ernst Germar based on the type-species *Phalaena* (*Bombyx*) *pruni* Linnaeus, 1758. Despite being erected as monotypic, the genus was later (and for a long time) considered to include many unrelated species, now placed in other genera (*Euthrix* Meigen, 1830, *Metanastria* Hübner, [1820] 1816, *Kunugia* Nagano, 1917, etc). Jacob Hübner included the taxon *pruni* Linnaeus, 1758 in a separate monotypic genus *Chrostogastria* in 1820 - the name is therefore a junior objective synonym of *Odonestis* Germar, 1812. In 1866, the genus for the same type species was re-erected once again as *Phylloxera* by Rambur but was found to be a junior homonym of *Phylloxera* Boyer de Fonscolombe, 1834, in Hemiptera, and was therefore replaced by *Lobocampa* Wallengren, 1869; both of these names are junior objective synonyms of *Odonestis* Germar, 1812.

The genus was for a long period considered to be monotypic and even Tschitjakov (1999) wrote "The genus consists of the single species." At the same time almost all congeners were described just in the beginning of the 19th Century mostly in *Odonestis* and only two species were originally placed in *Arguda* Moore, 1879. For one of thiese congeners, Matsumura erected the genus *Pseudarguda* in 1932, originally designated *Arguda formosae* Wileman, 1910, as its type-species. The name *Arguda formosae* Wileman was attributed to designation of a Taiwanese population of species known now under *Odonestis bheroba* Moore and shall be considered therefore as a junior subjective synonym of *Odonestis* Germar, 1812.

Despite 6 species of the genus being already known before 1935, only Tams had tried to make a revision of *Odonestis* based mostly on "résultats scientifiques du voyage aux Indes Orientales Néerlandaises de LL. AA. RR. le Prince et la Princesse Léopold de Belgique", as well as on material kept in BMNH (Tams, 1935). 12 taxa were established by him as new based on external and genitalic characters. He was the first author who used also the shape of 8. sternite to distinguish the species. In the articles Holloway (1987) and Holloway & Bender (1990), short diagnoses and bionomic remarks are given for 6 species. A new species *O. vinacea* Holloway & Bender, 1990 was described here but one more new species was overlooked within *O. schalicteta* Tams, 1935. Recently, three new species were described from Sulawesi (Zolotuhin & Holloway, 2006) and a peculiar Thai species was described by Zolotuhin (2005). The present article is an attempt to summarize the known data on the genus.

Material and methods. Approximately 800 specimens were examined from the following collections:
BMNH: Natural History Museum, London, UK (formerly British Museum of Natural History);
CAHU: Armin Hauenstein, Untermünkheim, Germany;
CBAP: Bro. Amnuay Pinratana, Bangkok, Thailand;
CJL: Jan Lourence, Alabang, the Philippines;
CMNH: Carnegie Museum of Natural History, Pittsburgh, USA;
CMSW: Manfred Ströhle, Weiden, Germany;
CSII: Siegfried Ihle, Ingolstadt, Germany;
CVZU: Vadim V. Zolotuhin, Uljanovsk, Russia;
ISNB: Koninklijk Belgisch Instituut voor Natuurwetenschappen (Bruxelles, Belgique) [Institut royal des Sciences naturelles de Belgique];
LSL: Linnaean Society of London, Great Britain;

MHUB: Zoologisches Museum der Humboldt Universität, Berlin, Germany;
MWM: Museum Witt, München, Germany;
RMS: Naturhistoriska Riksmuseet Stockholm;
ZFMK: Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn;
ZISP: Zoological Museum of Russian Academy of Sciences;
ZSM: Zoologische Staatssammlung, München;
ZMKU: Zoological Museum of Kiev University.

From the above material, a total of about 65 genitalia dissections were made using standard dissecting techniques and mounted in Euparal on glass slides. Illustrations were all based on Euparal mounted preparations and photographed under magnification using Olympus Camedia C-750 Camera with Soligor Adapter Tube for Olympus and Slide Duplicator for Digital 10 Dptrs modified for object glasses. Plates were produced by A. Sergeev using CorelPhotoPaint X3 from photographs taken by A. Gurkovich, A. Sergeev, A. Solovyev and V. Zolotuhin. The photographed adult type specimens have not been altered, but in some of the genitalia illustrations, dissecting damage and position of separate parts has been digitally reconstructed, taking special care with regard to maintaining original proportions. Maps were compiled by A. Sergeev using the same CorelPhotoPaint X3. The type location is indicated by a framed marker if known exactly, while all others are represented by circles.
Label data of type specimens are quoted verbatim; however, the month of capture or hatching of the adult is given in Roman numerals.

Morphology

Adult: Medium to large sized species, with wingspan 28-48 mm in ♂♂ and 41-68 mm in ♀♀ (col. pl. 14-16). Sexual dimorphism is limited to the ♀♀ being slightly larger and more robust, their wing colours are sometimes more poorly expressed, with the presence of a yellowish tint. Antennae are bipectinate in both sexes, with much shorter rami in females. Wings are short and usually triangular, with straight, smooth or wavy outer margin; in many species their apex is strongly, or only just so, falcate in forewings. Ground colour of the wings is formed from different tints of red, yellow or brown, with abundant whitish, bluish or greyish suffusion. Forewing pattern is distinct, consisting of two completely curved, concave or straight, dark median lines, often outlined with lighter scales. A discal spot, of varying size, is always present. In some species, the outer field of the forewing is with sparse scale cover and is therefore somewhat semi-transparent. Hindwings are without pattern, but often with basal area half darkened. Underside of hindwings has a spotted pattern differing by species. When at rest, the insect adopts a position with the forewings folded horizontally; hindwings are visible in their costal parts.

Venation (fig. 52, after *O. pruni*): In forewing, Sc free, R1 free arising from medial part of R-Cu cell, (R2 +R3), R4 free, (M1 + R5) on a short branch, bases of M2 and M3 moved apart. Only one anal vein present. R-Cu cell is without trace of M-branch. In hindwing, Sc anastomises with Rs forming a small, narrow humeral cell with a single additional humeral vein. M1 free, M2+M3 on common branch. 3 anal veins developed but A1 as a fold. Trace of M-branch is distinct in R-Cu cell. Discal vein developed well in both wings.

♂ genitalia (figs 1-33, 35-42): As in related genera, tergal appendages are strongly reduced and rest of uncus is very small and variable in shape in different species from flattened plate to bifurcate process. Valvae are bilobed with the upper lobes long and slender, from straight to strongly curved. The lower lobes are always shorter, broad, and setose. Aedeagus is tubular, with broadened base, always with protruded apical spur. Vesica is of different shape and in most species bears a cornutus or cornuti. The latter varies from singular needle-shaped, sometimes very robust, to flattened or presented as a zone of indistinct scobination. VII sternum is strongly modified in the genus, present by a three-lobed structure, with two baso-lateral apodemes. Central lobe is mostly narrow or slender and elongate, toothed caudally and sometimes with apical bifurcation, often asymmetric. Only a very short lateral process may be developed instead of a bifurcation but in some species it reaches about ¼ of the central lobe's length. Lateral lobes are always short and rounded, flattened, often weakly sclerotized. In some species the central lobe is moved to the left lateral one, forming the strongly asymmetric shape of the sternum.

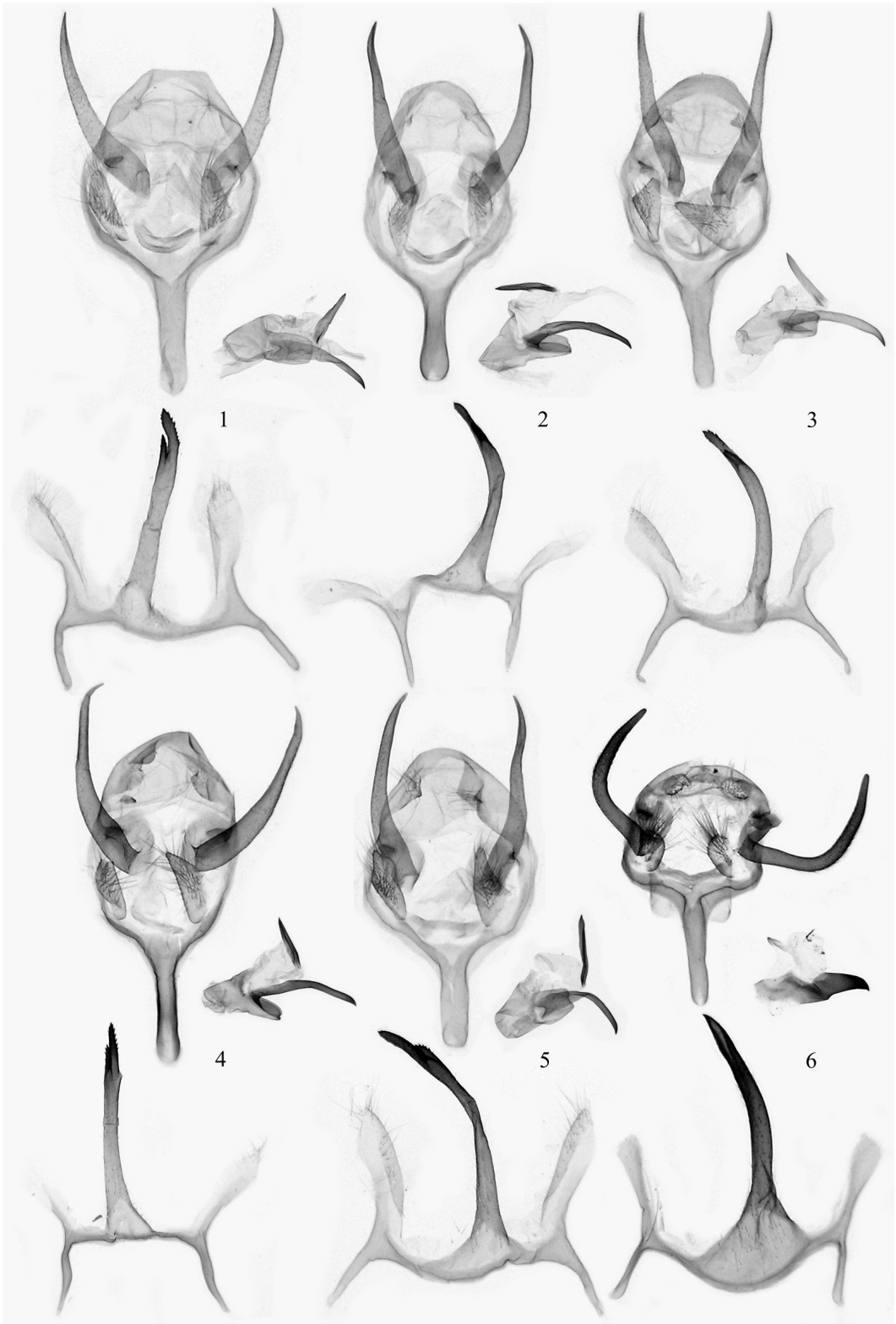
♀ genitalia (figs. 34, 43-51): Ovipositor lobes (papillae anales) are medium sized, rounded, moderately to fairly densely setose. Both pairs of apophyses are developed, with apophyses posteriores sometimes shorter, up to 2/3 of the anteriores length. Vaginal plates are developed, fused in one strongly wrinkled sclerite and cover atrium. Ostium is broad, usually sclerotized. Ductus bursae is distinct, broad, usually rather sclerotized, of very variable length, sometimes is very short but usually is distinct but not forming an antrum. Corpus bursae is large, bag-shaped, with a strong membranous wall, and bears a pair of blade-shaped signa.

Bionomics: The biology of most species is poorly known. Most are found in the mountains up to 2600 m; some are mountain endemics. In the temperate zone and in the subtropics of China they develop one generation per year, but 2 or 3 southwards. In the latter case they can produce overlapping broods and are on the wing almost all the year round. Caterpillars of middle instars hibernate. Eggs are of a laying type, with a micropylar pole on the side. The eggs are pale with a greenish spotted and linear pattern when laid, darkening shortly before hatching when the pattern becomes brown. The eggs are laid singly or in small clusters; female fertility in *O. pruni* (L.) is about 50-75 eggs (Zolotuhin, pers. obs. for 2 ♀♀). The larvae are dark cryptically coloured, strongly flattened dorsoventrally, with thoracic lappets. The larvae of this genus lack protruding verrucae, and have a single transverse setose thoracic band, in some species not covered with rigid short chetae. The caterpillars are solitary and never form groups. Nothing is known about their pest status. The pupa is enclosed in a silk cocoon and covered with yellowish or off-white powder. The pupal surface is smooth, with numerous short chetae and hairs, no cremaster is present. Pupation takes place in different locations, often within rolled leaves of a host plant. Host plants are known only for very few species. The polyphagous Palaearctic *O. pruni* (L.) feeds on different Rosaceae, Ulmaceae, Salicaceae, Fagaceae; for other species the host data is sketchy - *Combretum*, *Lagerstroemia*, *Eugenia*, *Psidium*, *Syzygium*, *Melastom*a are among them.

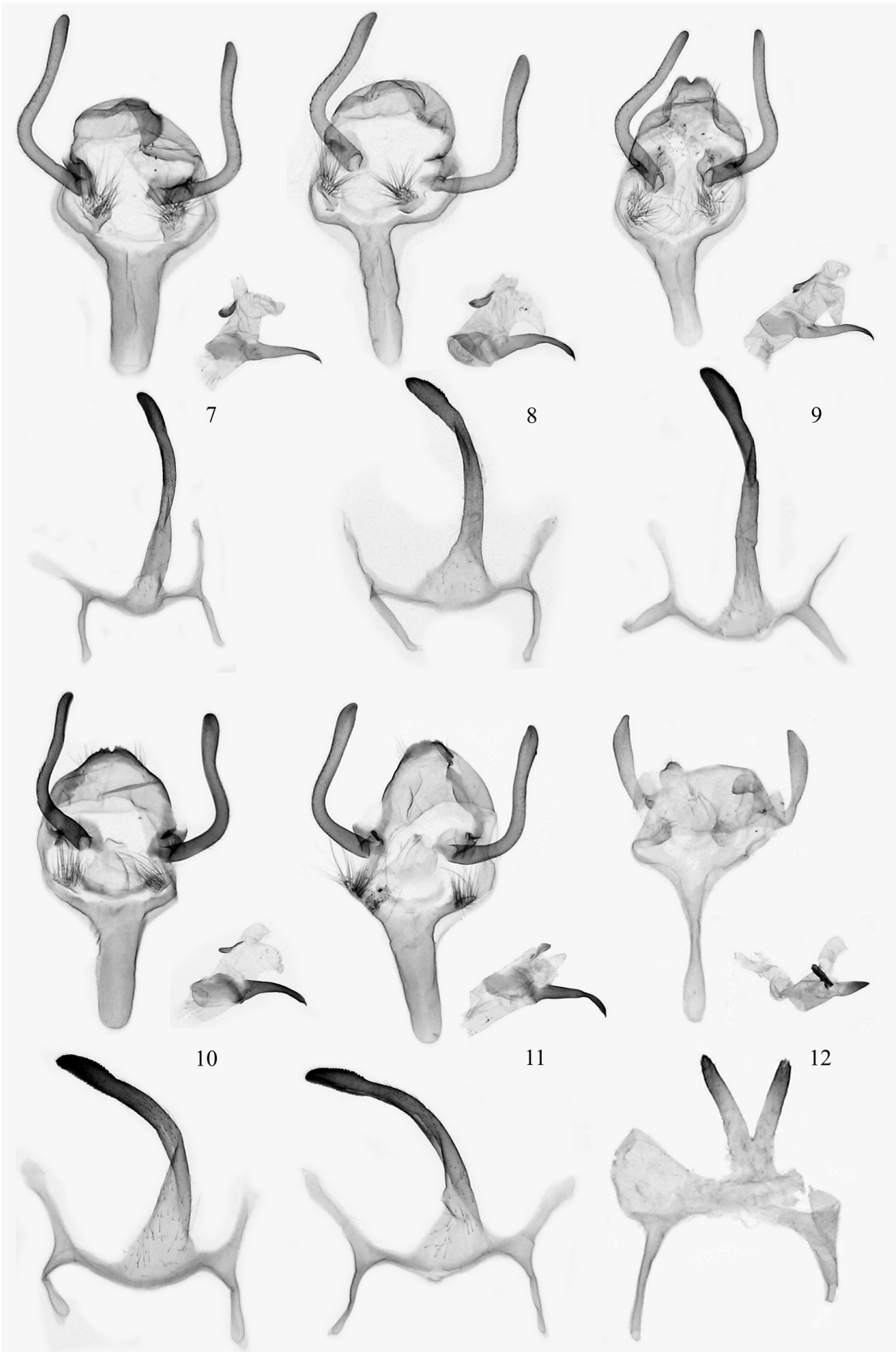
Distribution: The genus is widely distributed and is known from almost the whole of Eurasia and Sundaland. Although only *O. pruni* (L.) is known from the Western Palaearctic, and only 3 more species have reached the Eastern Palaearctic, all species of the genus are known from South-East Asia. Generally the genus is known from Europe and Asia Minor to Siberia, the Far East of Russia, Japan, Korea, China, the whole of India including Sri Lanka, Nepal, Bhutan, Myanmar, Laos, Cambodia, Thailand, Vi-

etnam, Malaya, Sumatra, Borneo, Java, Sulawesi, and the Philippines. In spite of such distribution, only 4 species [*O. pruni* (L.), *O. erectilinea* (Swinhoe), *O. lipara* Tams and *O. vita* Moore] are widespread in the area; most others are local endemics and often are known only from their type-locality or from a single oceanic island.

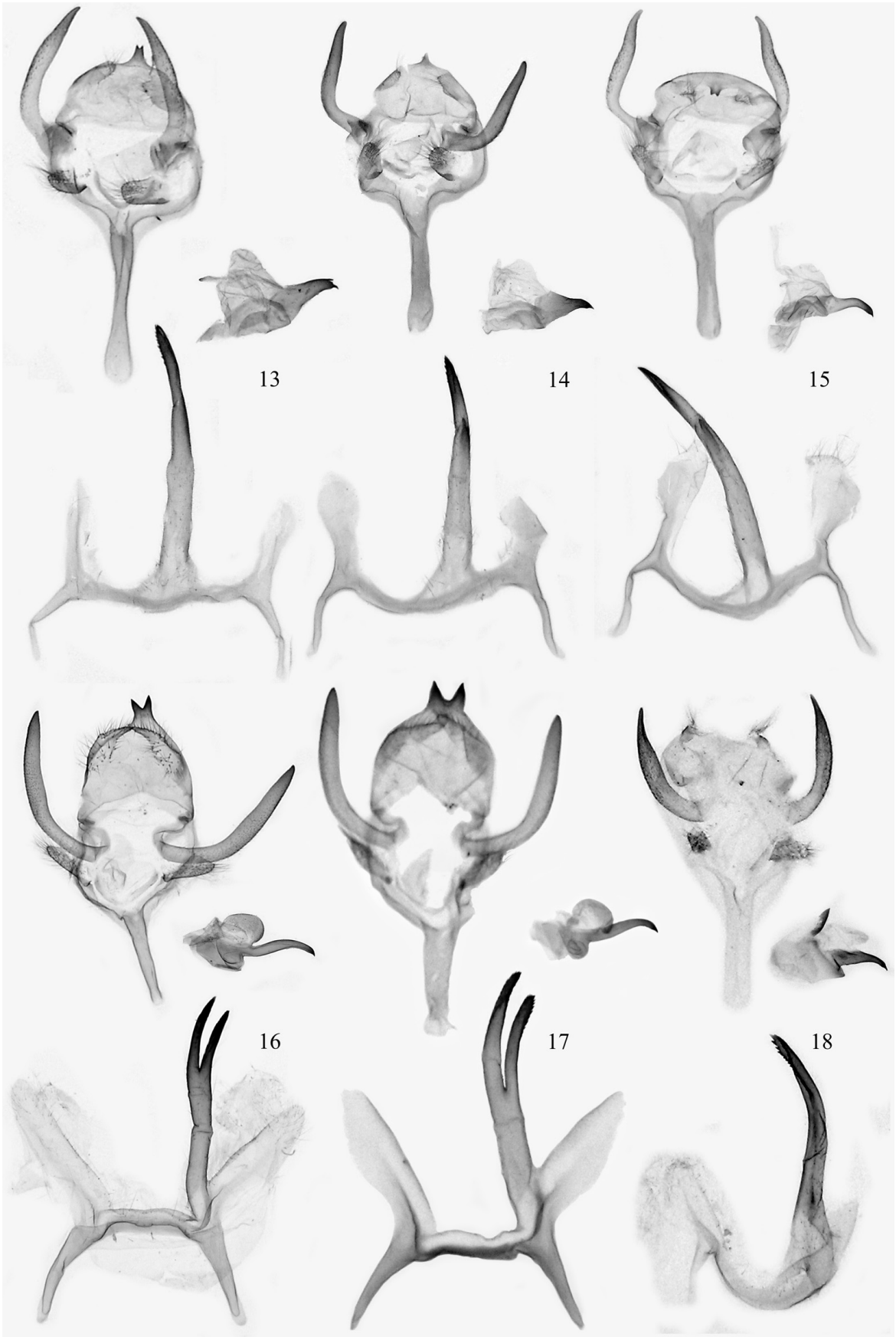
Nomenclatorial notes: 4 groups can be considered within the genus based on general appearance and ♂ genitalic characters. They are probably characterized into different subgenera within the genus but are not erected here taxonomically.



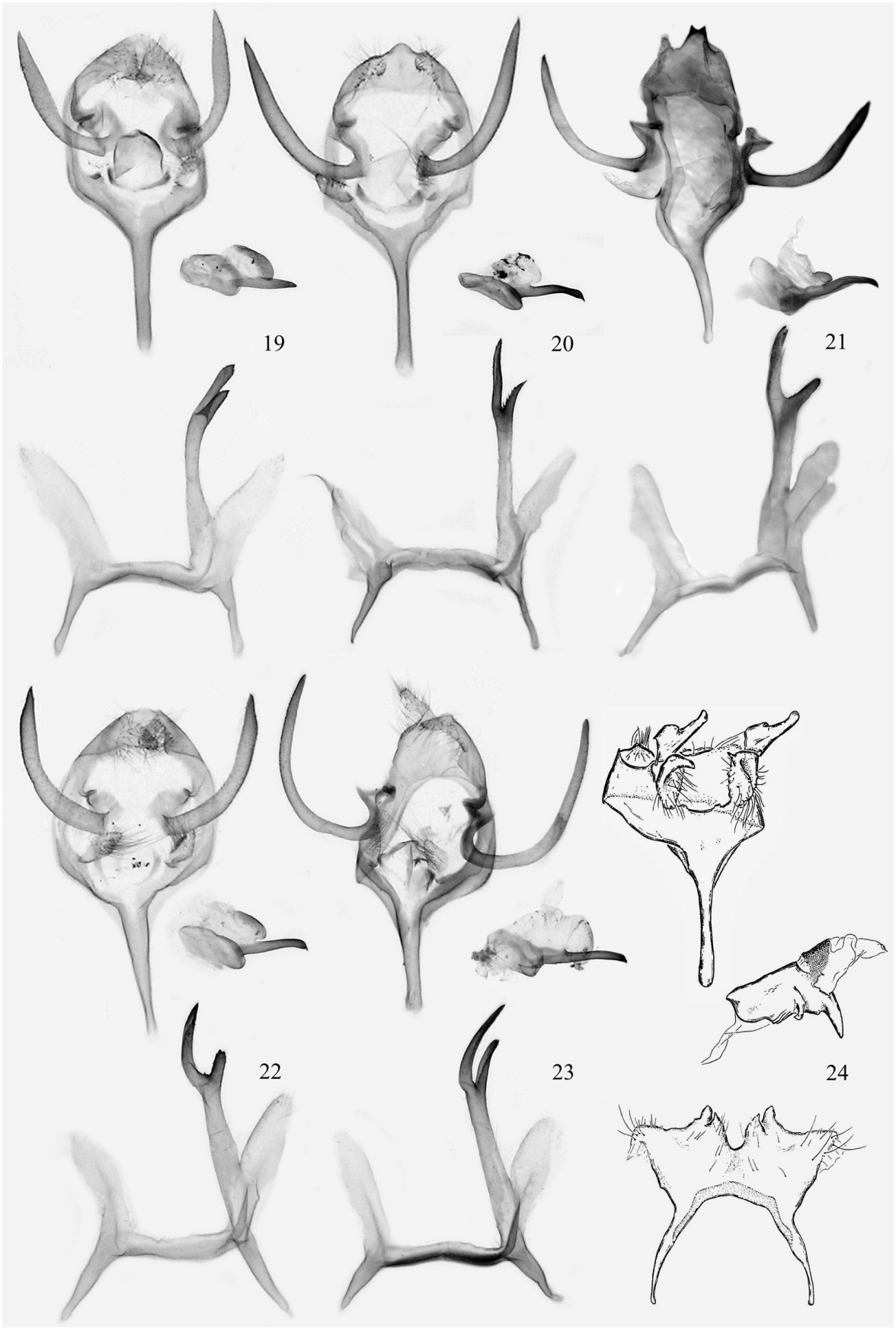
Figs 1-6: *Odonestis* spp., ♂♂ genitalia. (1) *O. pruni pruni* (Linnaeus, 1758), Italien, Gardaseegebiet, Monte Moderno, 250 m, 18.VIII.1977, leg. G. Behounek (MWM, Nr. 14.197). (2, 3) *O. pruni rufescens* ardakopff, 1928: (2) Taiwan, Prov. Nantou, 3 km SW of Tsuifeng 121°10'E, 24°06'N, 2100 m, 4.-5.VIII.1996, leg. T. CsÖvary & L. Mikus (MWM, Nr. 14.224); (3) Jap. Kyoto, Berg Hi-ei, 800 m, 27.VIII.1957, Murayama (MWM, Nr. 14. 221). (4, 5) *O. pruni oberthueri* Tams, 1935: (4) China Yunnan-prov. (NW), Dali Bai autonom. pref.: Yunlong county; Fengshuining Mts., 2460 m, 13 km N of Caojian, 10.-23.VI.1999; 25°46'N, 99°06'E (MWM, Nr. 14.205); (5) N Vietnam, 200 m, Ben En Nat. Park, 40 km SW Than Hoa, 18°40'N, 105°40'E, 22-30.XI 1994, leg. Sinjaev & Simonov (MWM, Nr. 14.223). (6) *O. lipara* Tams, 1935, Keningau, Sabah, Borneo, 800 m, 10.VIII 1986, leg. Martini (MWM, Nr. 14.377).



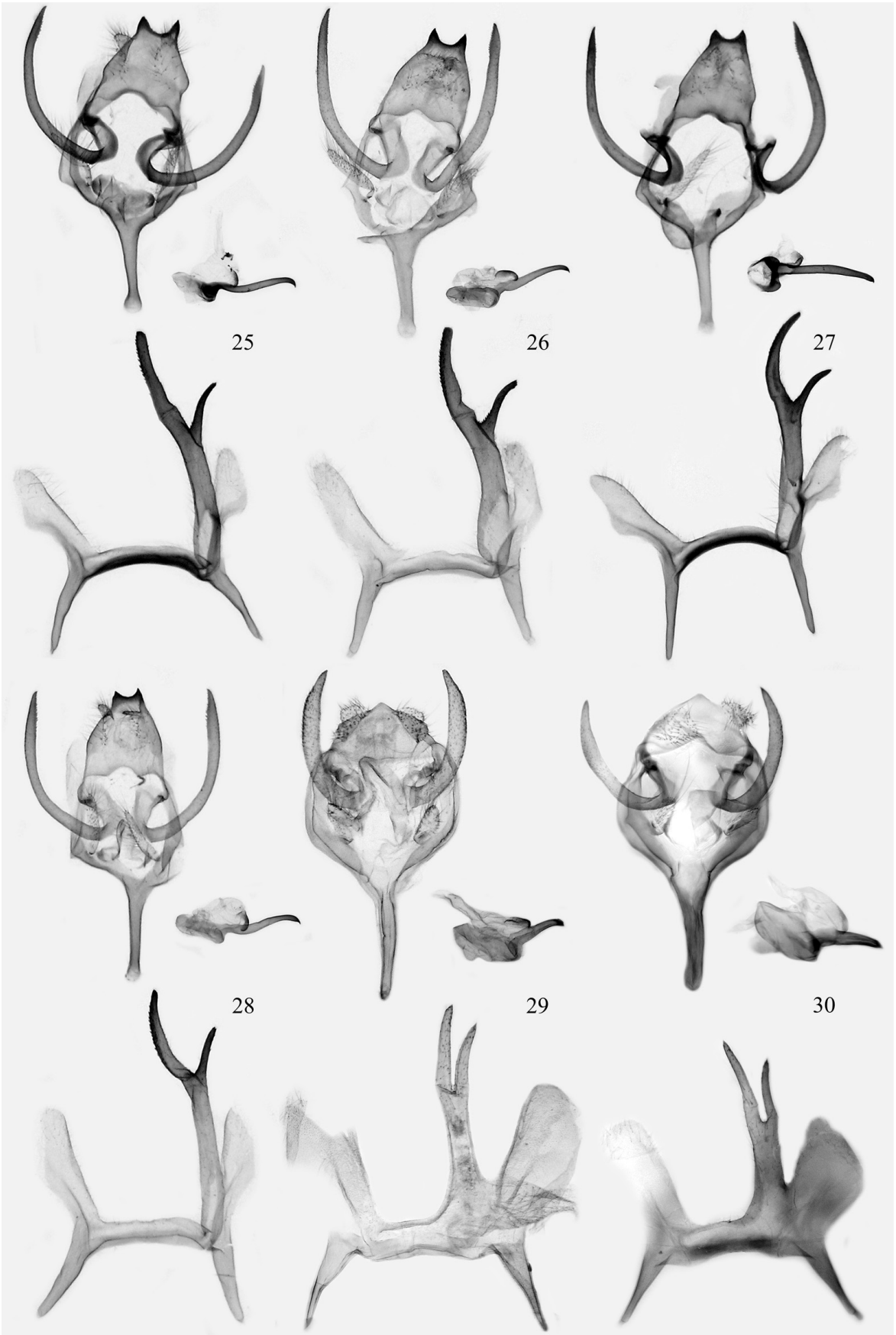
Figs 7-12: *Odonestis* spp., ♂♂ genitalia. (7-9) *O. erectilinea* (Swinhoe, 1904): (7) Malaysia, Pahang state, Cameron Haighlands, Tanah Rata, No. 72, 21.III.-2.IV.1995, leg. Gabor Ronkay (MWM, Nr. 14.304); (8) Indonesia C. Java, Mt. Muris, 15 km N Kasdas, 6° 35' N, 110° 53' E, 1100 m, 21.-22.I.1998, leg. Jakl, Schintlmeister & Cervenak (MWM, Nr. 14.302); (9) Malaysia, Borneo, Sabah, Mt. Trus Madi, 1150 m, 20.III.-18.IV.2005, leg. B. & K. Martini (MWM, Nr. 14.299). (10, 11) *O. erectilinea* ***frater*** **subspec. nov**.: (10) holotype, Philippinen, Palawan N., Mt. Cleopatra needle, 600-750 m, 21.XI.-2.XII.2000, leg. D. Mohagan (MWM, Nr. 14.334); (11) paratype, Philippinen, Palawan, Mt. Salokot, 800 m, 09°51'N 118°38'E, 10.-27.II.2000 (MWM, Nr. 14.331). (12): *O. ophioglossa* Tams, 1935, paratype, Slopes of Mt. Korintji, SW Sumatra, 7300 ft, 8.IX.1921, C., F., & J. Pratt (ZMHU, GU 2008-01).



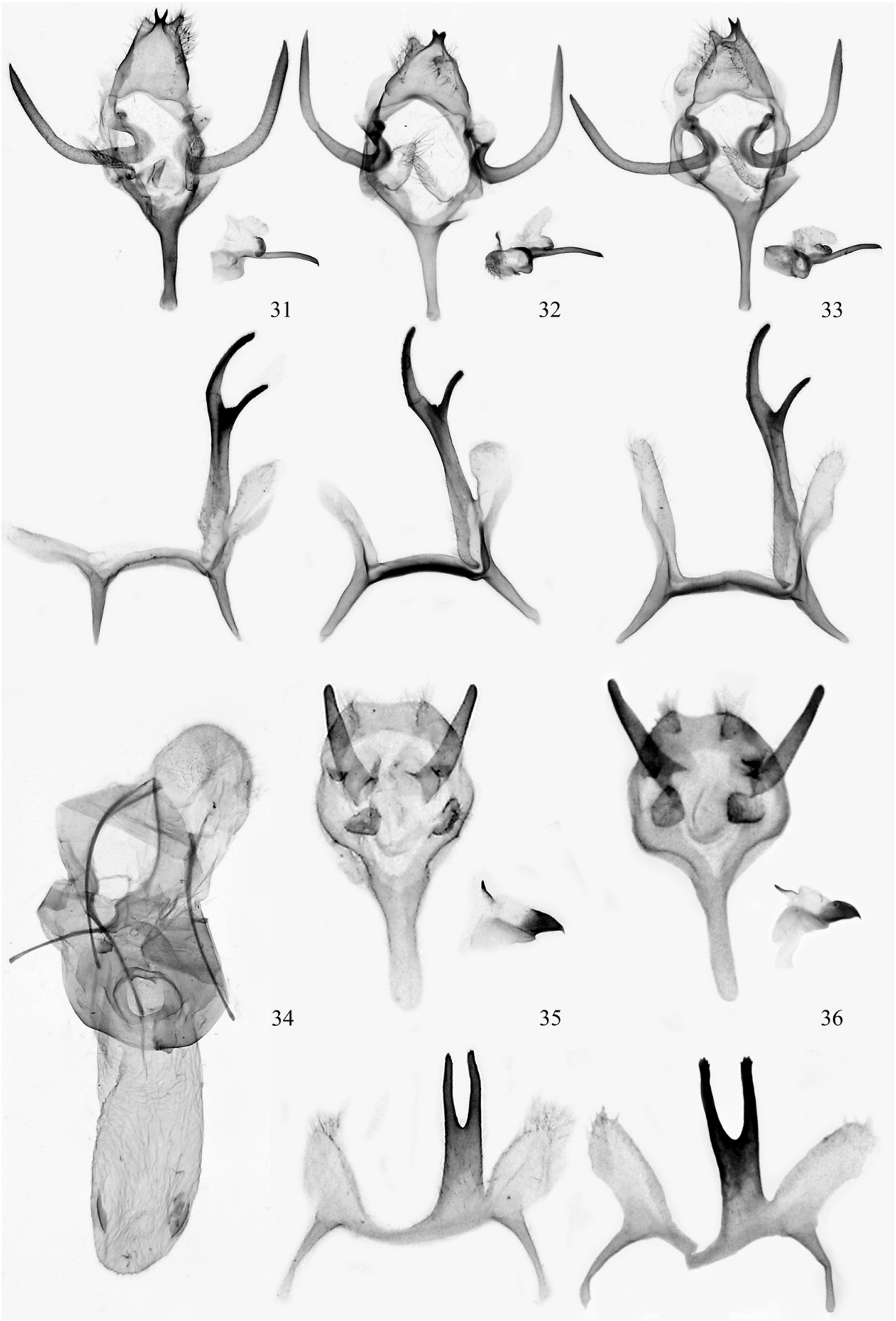
Figs 13-18: *Odonestis* spp., ♂♂ genitalia. (13) *O. bheroba formosae* (Wileman, 1910), Taiwan, Prov. Pingtung, 10 km of Mutan, 400 m, 5.VII.1997, leg. B. Herczig & S. Kovacs (MWM, Nr. 14.242). (14, 15) *O. bheroba* Moore, 1858-1859, Nepal, Koshi, Taplejung area, SW of Mamankhe, 1.700 m, 87°57'E, 27°26'N, 6.-7.IV.1996, leg. G. Csorba & S.T. Kovacs (MWM) Nr. 14.247; (15) China, Sichuan, Qingchenhoushan Mts., 70 km NW Chengdu, 1400 m, 1.-7.VI.2005, leg. S., V., M. Murzin (MWM) Nr. 14.237. (16, 17) *O. kama* Zolotuhin & Holloway, 2006, Sulawesi (NSMT); (17) paratype, Indonesia, Sulawesi Utara, Dumoga-Bone N.P., 1000-1140 m, 29.I.-IV.1985, J. D. Holloway (BMNH, GU-1057). (18) *O. gisla* Zolotuhin & Holloway, 2006, paratypes, Indonesian, Peleng Isl., 2 km W Sambiut, 150 m u. N, 7. 1998, leg. local collectors (MWM, Nr. 9840).



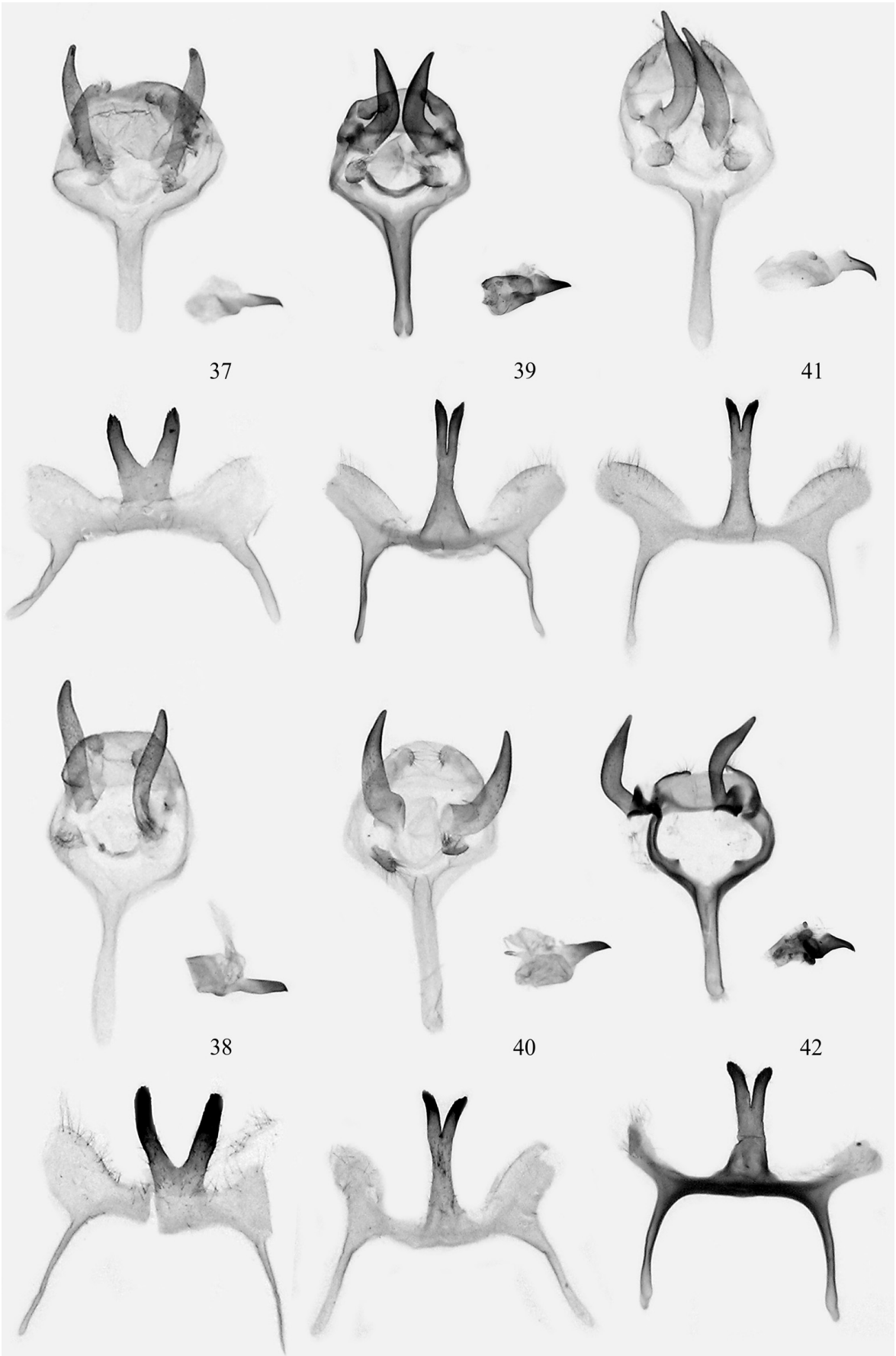
Figs 19-24: *Odonestis* spp., ♂♂ genitalia. (19) *O. apo* Zolotuhin, Treadaway & Witt, 1997, Philippinen, Mindanao, Prov. Bukidnon, Mt. Dalongbong, Talakag, 40 km NW Maramag, 1200 m, 9.-17.IX.1999 (MWM, Nr. 14.335). (20) *O. angulata* (Grünberg, 1913), W. Sumatra, Mt. Sanggul, Landai 1200-1300 m, 0°00'N, 100°38'E, 1.II.2004, leg. St. Jakl (MWM, Nr. 14.338). (21) *O. belli* Tams, 1935 **stat. nov.**, holotype of *O. vita belli* Tams, 1935, Kanwar, 29.IX.[19]00 (BMNH, Lasio-1452). (22, 23) *O. leopoldi* Tams, 1935: (22) Philippinen, Mindanao Isl., N Misamis Prov., Melasag Mt., 300 m, 10.-22.II.1996, leg. S. Gundorov (MWM, Nr. 14.336); (23)Philippinen, 600 m, Negros (prov. Negros occ.), Mt. Kanlaon, W-route, via Mambucal, I.1997, Primärwald (MWM, Nr. 14.337). (24) *O. pinratanai* Zolotuhin, 2005., holotype, Thailand, Kanchanaburi, Sri Sawat, 12.X 1998 (CBAP), from Zolotuhin & Pinratana (2005).



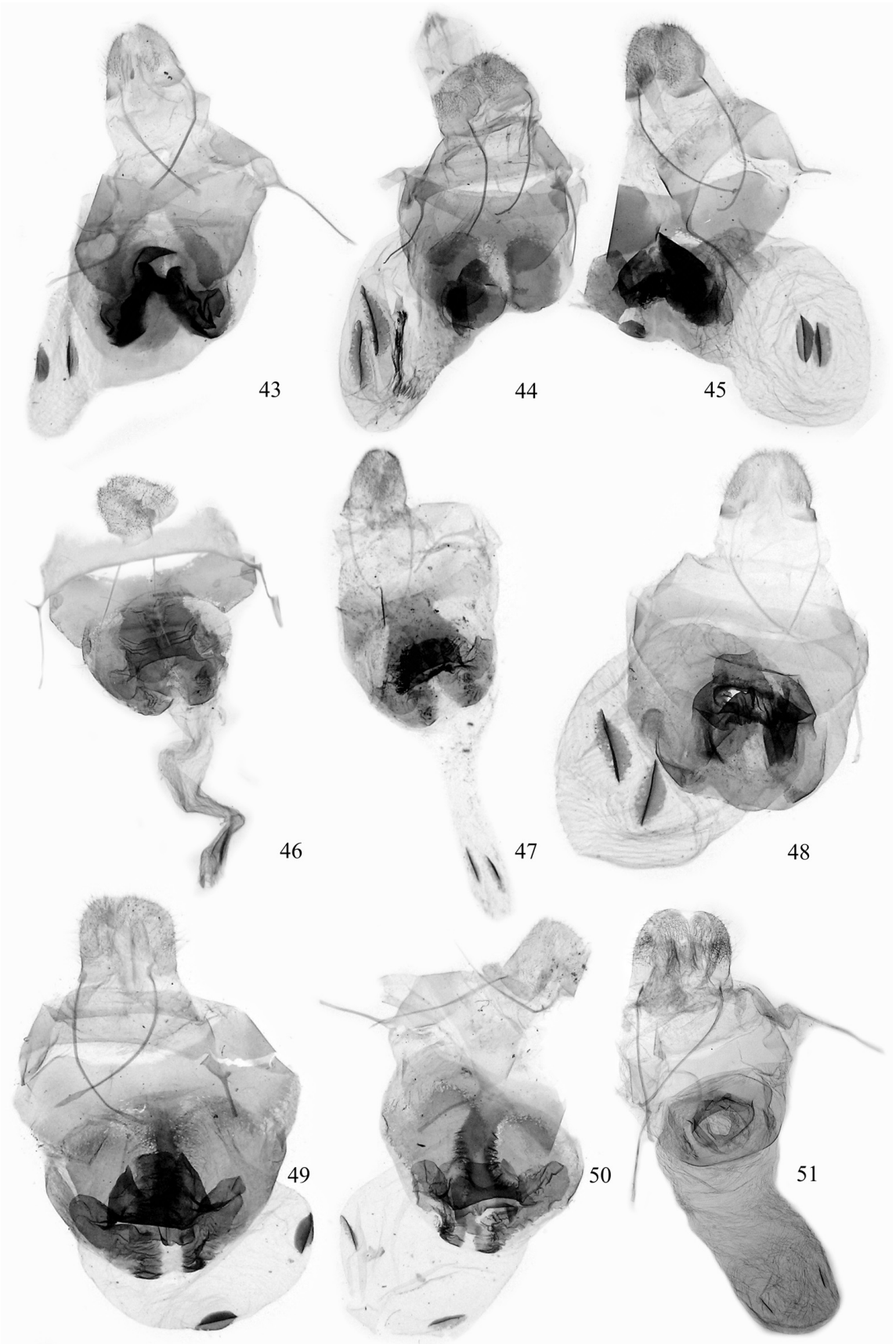
Figs 25-30: *Odonestis* spp., ♂♂ genitalia. 25-27: *O. vita* Moore, 1859: (25) N. Vietnam, 16-1800 m, Mt. Fan-si-pan, (West) Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 10.-30.X.1994, leg. Sinjaev & einh. Saml (MWM, Nr. 14.340); (26) Thailand, Changwat Phayao, 15 SE Chiang Muan, 640 m, 24.XI.1998, leg. Tibor Csovari & Laszlo Micus (MWM, Nr. 14.341); (27) North Sumatra, Huya Padang, 310 m, 99°11'E.L., 2°48'N.B., 28.III.1990, Leg. Dr. E. W. Diehl (MWM, Nr. 14.342). (28) *O. vita brachyschalida* Tams, 1935, Philippinen, Mindanao, prov. Bukidnon, Mt. Dalongdong, Talakag, 40 km NW Maramag, 1300 m, 2.-11.II.2000 (MWM, Nr. 14.343). (29) *O. ceylonica* Tams, 1935 **stat. nov.**, holotype, Colombo, Mackwood coll., B.M. 1927 (BMNH, Lasio-1455). (30) *Odonestis ceylonica* Tams, 1935 **stat. nov.**, S. India, Kanara, T. R. Bell, B.M. 1934 (BMNH, Lasio-1453).



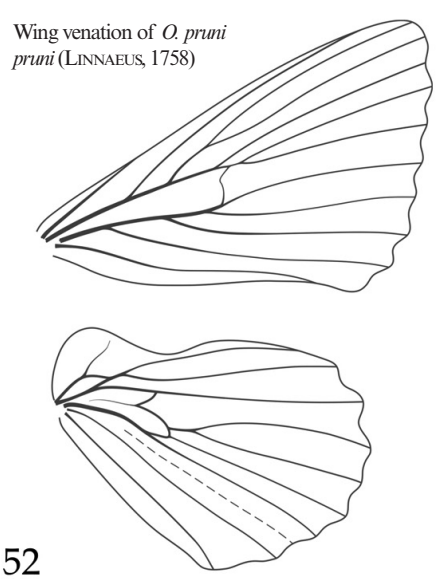
Figs 31-36: *Odonestis* spp., genitalia. (31-33) ***O. filigranica* spec. nov.**: (31) holotype ♂, India-Andaman Isl., North Andaman, Baratang Isl., 21.-22.III.1998, leg. E. Grigoriev & V. Siniaev (MWM, Nr. 14.339); (32, 33). paratypes ♂♂, Indien, M. Andaman, Karmatang 1,5 km E, 12°50'72"N, 92°56'10"E, 17.-22.VIII.2001, leg. Jan-Peter Rudloff (MWM, Nr.14.375, MWM, Nr.14.374). (34): *O. ceylonica* Tams, 1935 **stat. nov.**, ♀, Ceylon (BMNH). (35, 36)*Odonestis maya* Zolotuhin & Holloway, 2006, paratype ♂, Sulawesi (MWM, GU 4320); (36) paratype ♂, Sulawesi (MWM).



Figs 37-42: *Odonestis* spp., ♂♂ genitalia. (37, 38) *O. vinacea* Holloway, 1990: (37) Paratype, Sumatra N, Tobe lake SW, Tele, 1150 m, 27.VII.1984, Dr. Diehl leg. (ZSM, GU 2008-003); (38) NO Sumatra, Sidikalung, 800 m, 15.VI.1980, leg. E. Diehl (ZSM, GU 2008-004). (39, 40) *O.schalicteta* Tams, 1935: (39) Malaysia, Provinz Pahang, Zentrales Beergland, Fraser's Hill, Bukit Fraser, 1050-1300 m, 19.IV.-8.V.2001, leg. de Freina (MWM, Nr. 14.376); (40) Sumatra, Nias-ins., Lawalo, IX.1979, leg. Dr. Diehl (ZSM, GU 2008-001). (41, 42) *O. **germari*** **spec. nov.**, holotype, Borneo, Selatan, 30 km E von Kandangan, Regenwald, 800 m, 15 km NE Loksado, 2°52'S, 115°38'E, XI 1997, leg. JAKL (MWM, Nr. 5122); (42) paratype, Malaysia, Borneo, Sabah, Trus Madi, 1.200 m, 1-12.IV 2005, leg. Martini (MWM, Nr. 14. 373).

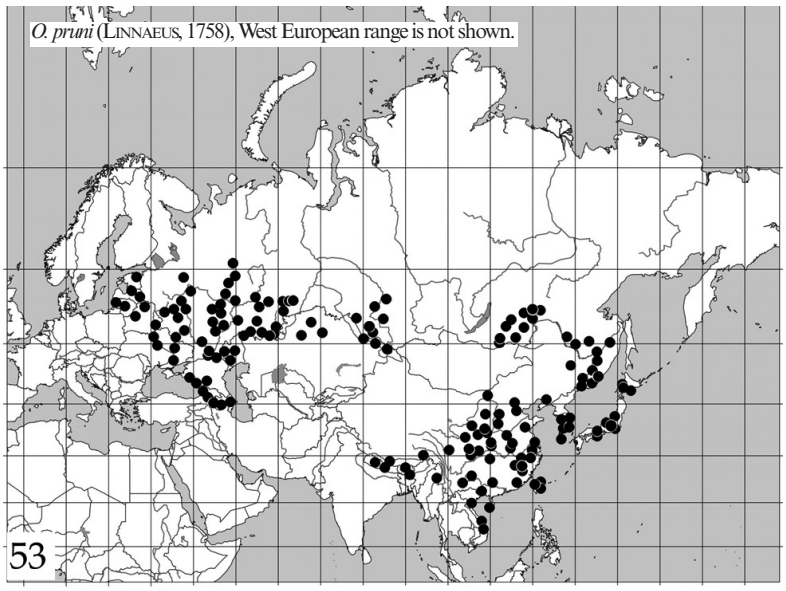


Figs 43-51: *Odonestis* spp., ♀ genitalia. (43) *Odonestis pruni pruni* (Linnaeus, 1758), Germania, Deisenhofen b. München, 7.VII.1974, leg. Behounek (MWM, Nr. 14.226). (44) *O. bheroba formosae* (Wileman, 1910), Taiwan, Prov. Nan-Tou, 15 km N of Puli, 500 m, 14.-15.X.1996, leg. Gy. Fabian & F. Nemes (MWM, Nr. 14.288). (45) *Odonestis erectilinea erectilinea* (Swinhoe, 1904), Nord-Vietnam, Cuc Phuong, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 18.XI.-3.XII.1992, leg. Sinjaev & Simonov (MWM, Nr. 14.303). (46) *O. maya* Zolotuhin & Holloway, 2006, Sulawesi (MWM, 4042). (47) *O. kama* Zolotuhin & Holloway, 2006, N. Celebes, Tonsealama, Tonbanomanada [leg. Groenandael] (ZMA, GU Las-005). (48) *O. erectilinea* (Swinhoe, 1904), Vietnam (MWM). (49) *O. vita* Moore, 1859, Philippinen, Palawan (N), Mt. Italpak, 500-800 m, 2.-15.III.1998 (MWM, Nr. 14. 379). (50) ***O. filigranica* spec. nov.**, Indien, Little Andaman, Huck Bay, Quarry Hilus, 10°35'52"N, 92°30'16"E, 26-27.VIII 2001, leg. Jan-Peter Rudloff (MWM, Nr. 14.378). (51) *O. ceylonica* Tams, 1935 **stat. nov.**, India, Kanara, T. R. Bell (BMNH, Lasio-1454).



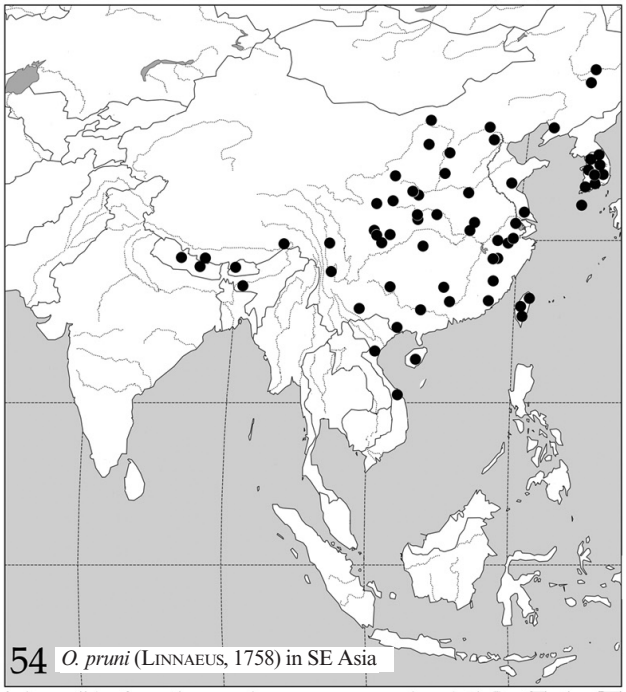
Wing venation of *O. pruni pruni* (Linnaeus, 1758)

52

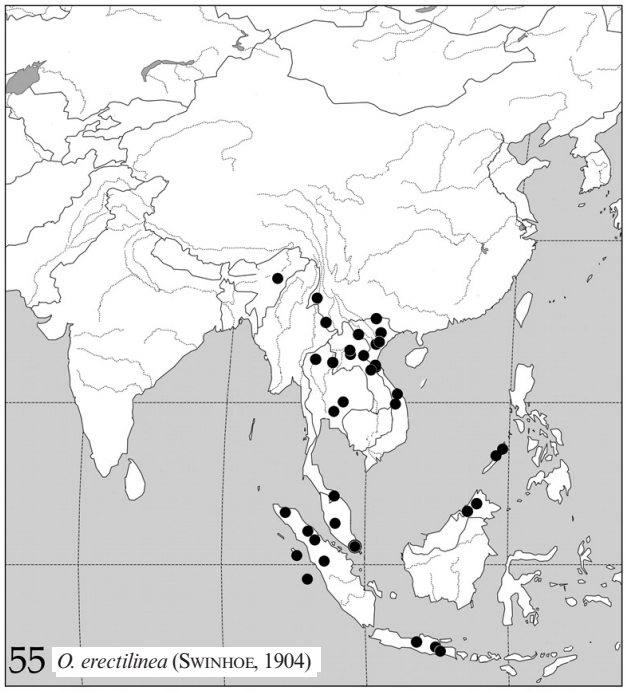


O. pruni (Linnaeus, 1758), West European range is not shown.

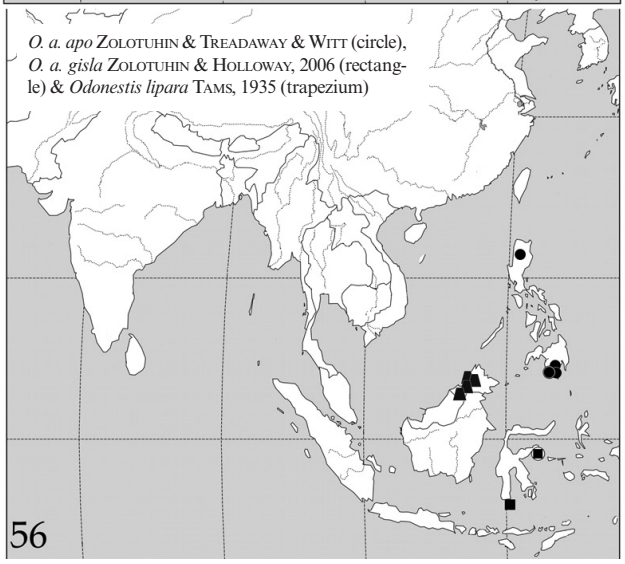
53



54 *O. pruni* (Linnaeus, 1758) in SE Asia

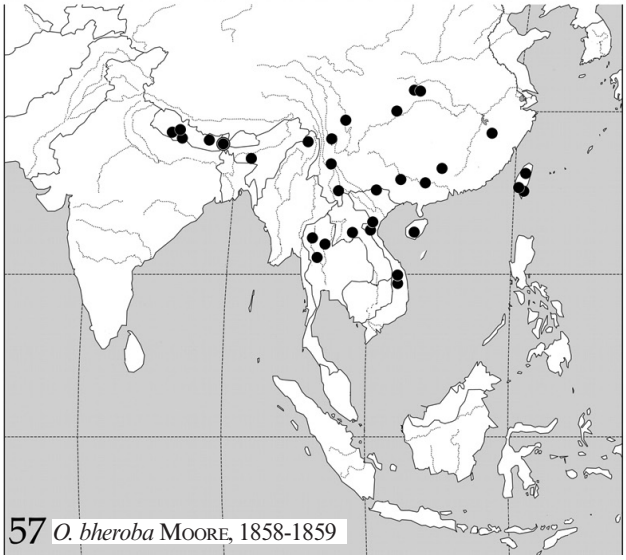


55 *O. erectilinea* (Swinhoe, 1904)

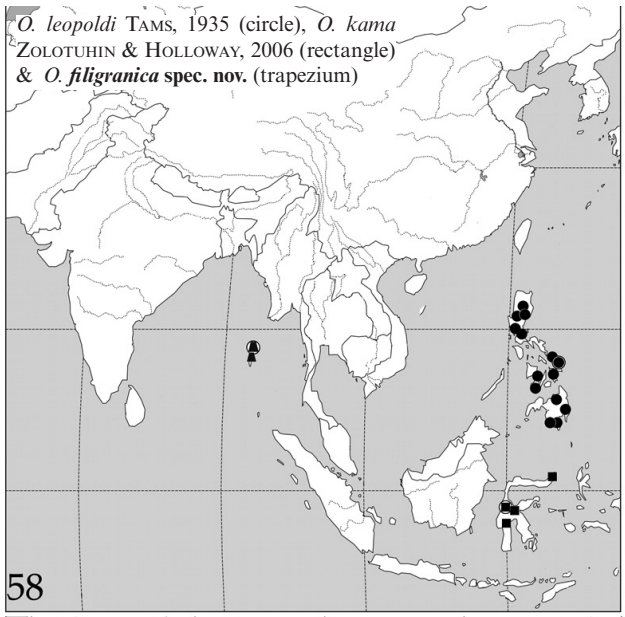


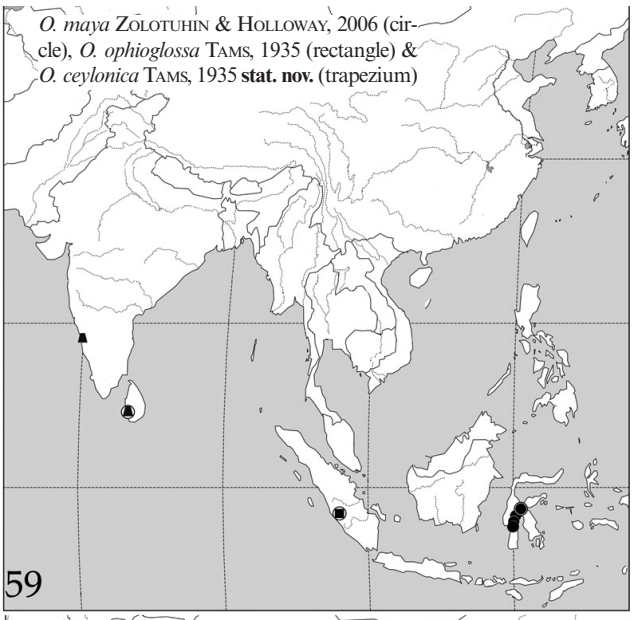
O. a. apo Zolotuhin & Treadaway & Witt (circle), *O. a. gisla* Zolotuhin & Holloway, 2006 (rectangle) & *Odonestis lipara* Tams, 1935 (trapezium)

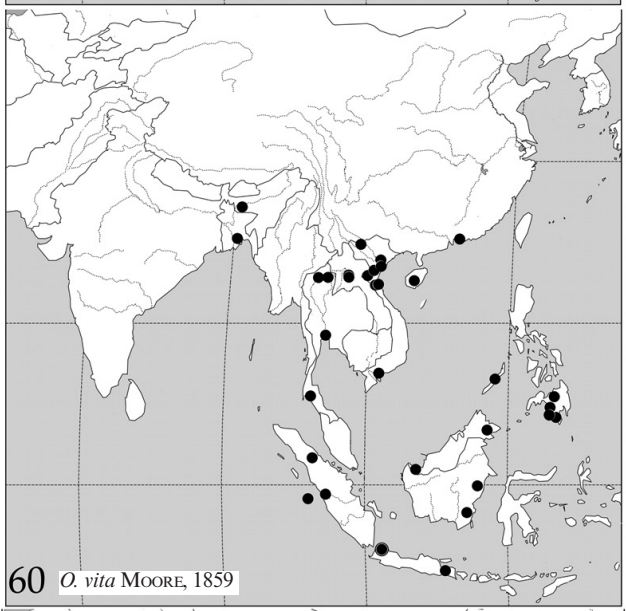
56

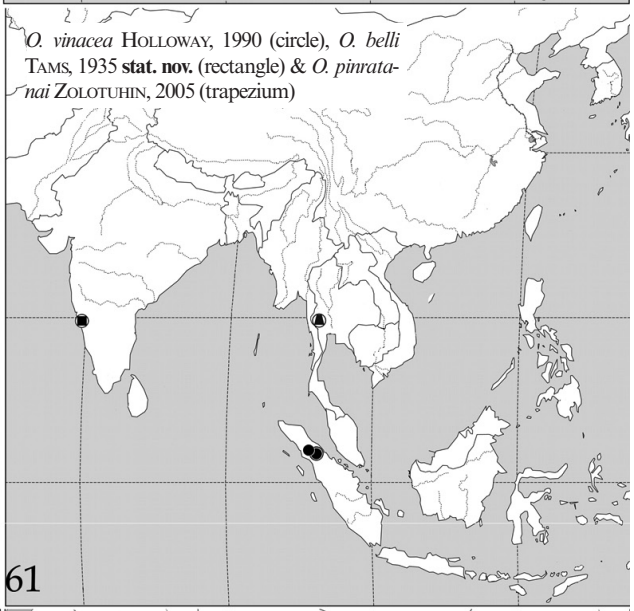


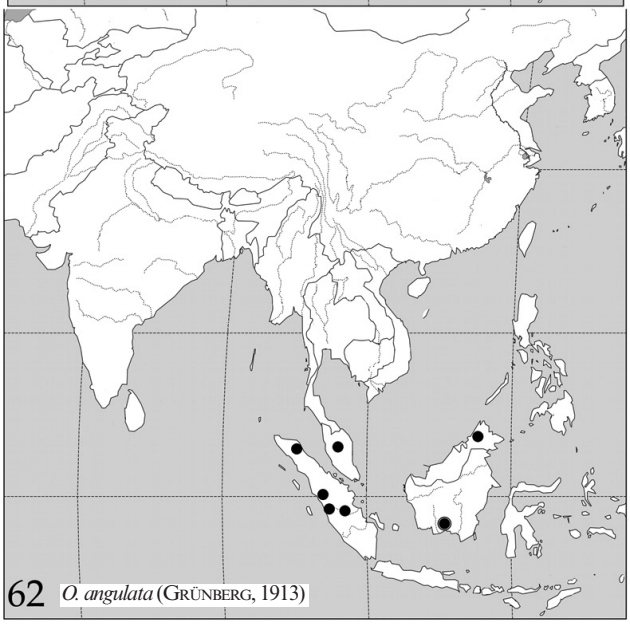
57 *O. bheroba* Moore, 1858-1859

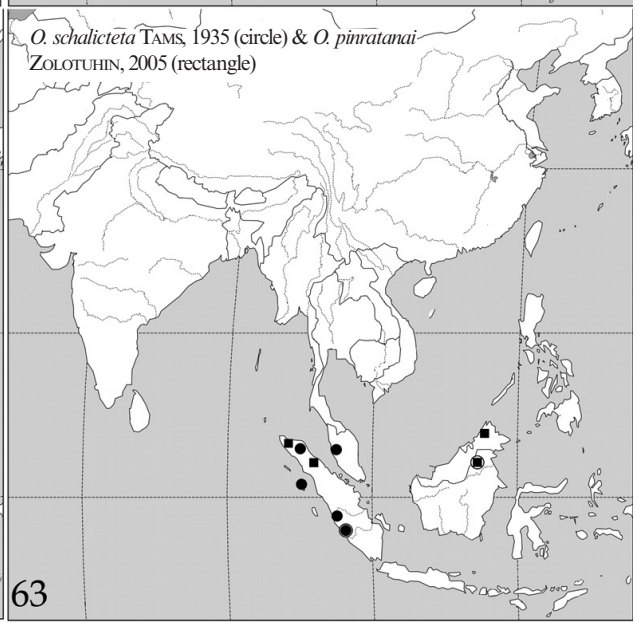

O. leopoldi Tams, 1935 (circle), *O. kama* Zolotuhin & Holloway, 2006 (rectangle) & *O. filigranica* **spec. nov.** (trapezium)
58


O. maya Zolotuhin & Holloway, 2006 (circle), *O. ophioglossa* Tams, 1935 (rectangle) & *O. ceylonica* Tams, 1935 **stat. nov.** (trapezium)
59


60 *O. vita* Moore, 1859


O. vinacea Holloway, 1990 (circle), *O. belli* Tams, 1935 **stat. nov.** (rectangle) & *O. pinratanai* Zolotuhin, 2005 (trapezium)
61


62 *O. angulata* (Grünberg, 1913)


O. schalicteta Tams, 1935 (circle) & *O. pinratanai* Zolotuhin, 2005 (rectangle)
63

***pruni*-group**

Forewings are with smooth rarely dentate fasciae. Sternum 8 is with a long and distinct medial lobe, longer than the lateral lobes, sometimes with a small apical bifurcation. Uncus is very small, sometimes reduced to indistinct lobes. Valvae are straight, pointed. Apical spur is long and narrow, pointed on the top. Vesica is short, cornutus is single, sometimes indistinct or absent.

Odonestis pruni (Linnaeus, 1758)
Odonestis erectilinea (Swinhoe, 1904)
Odonestis lipara Tams, 1935
Odonestis bheroba Moore, 1858-1859
Odonestis gisla Zolotuhin & Holloway, 2006
Odonestis apo Zolotuhin, Treadaway & Witt, 1997

***vita*-group**

Forewings are short and more compact, with dentate and completely curved fasciae. Sternum 8 is asymmetric, its median lobe is often fused with the right lobe and apically bifurcated. Uncus is of various shape, but always recognizable. Valvae are strong, curved, rarely slightly 'S'-shaped. Apical spur is distinct, long and may be apically crooked. Vesica is compact, cornuti are numerous, small, needle-shaped, situated by a group looking like a plate.

Odonestis vita Moore, 1859
Odonestis kama Zolotuhin & Holloway, 2006
*Odonestis **filigranica*** **spec. nov.**
Odonestis leopoldi Tams, 1935
Odonestis angulata (Grünberg, 1913)
Odonestis belli Tams, 1935 **stat. nov.**
Odonestis ceylonica Tams, 1935 **stat. nov.**

***schalicteta*-group**

Forewings are elongated and falcate, with smooth, often reduced fasciae. Sternum 8 is with low medial lobe shorter or slightly longer than lateral lobes. Uncus is reduced to indistinct lobes. Valvae are short, pointed, stiletto-shaped. Apical spur is broad and short in aedeagus, pointed on the top. Vesica is compact; cornutus (if present) presents as a small tooth. The ♂♂ genitalia are quite similar in this group and determination should consider the external characters first of all.

Odonestis schalicteta Tams, 1935
Odonestis maya Zolotuhin & Holloway, 2006
Odonestis vinacea Holloway, 1990
Odonestis ophioglossa Tams, 1935
*Odonestis **germari*** **spec. nov.**

***pinratanai*-group**

Forewings are short with smooth rarely dentate fasciae. Sternum 8 is of simple ground plan and not divided into 3 lobes. Valvae are much shorter than in other species, almost straight. Apical spur and vesica are very short in aedeagus.
The only species included is
Odonestis pinratanai Zolotuhin, 2005.

Systematic account of species (aberrations and colour forms are not included in the list):

Odonestis pruni (Linnaeus, 1758)
Odonestis pruni pruni (Linnaeus, 1758)
Odonestis pruni santorui Hartig, 1938
Odonestis pruni reisseri Rungs, 1977
Odonestis pruni var. *ambitiosa* Dannehl, 1925
Odonestis pruni f. *vulpecula* Dannehl, 1925
Odonestis pruni var. *montana* Jones, 1907
Odonestis pruni rufescens Kardakopff, 1928
Odonestis pruni japonensis Tams, 1935
Odonestis pruni oberthueri Tams, 1935
Odonestis pruni assamensis Tams, 1935
Odonestis erectilinea (Swinhoe, 1904)
Odonestis erectilinea erectilinea (Swinhoe, 1904)
Odonestis erectilinea barisana Tams, 1935 **syn. nov.**
*Odonestis erectilinea **frater*** **subspec. nov.**
Odonestis lipara Tams, 1935
Odonestis bheroba *Moore*, 1858-1859
Odonestis bheroba bheroba Moore, 1858-1859
Odonestis bheroba formosae (Wileman, 1910)
Odonestis formosae harutai Kishidai, 1992
Odonestis gisla Zolotuhin & Holloway, 2006
Odonestis kama Zolotuhin & Holloway, 2006
Odonestis maya Zolotuhin & Holloway, 2006
Odonestis vita Moore, 1859
Odonestis vita vita Moore, 1859
Odonestis vita brachyschalida Tams, 1935
Odonestis vita indica Tams, 1935
Odonestis filigranica **spec. nov.**
Odonestis ceylonica Tams, 1935 **stat. nov.**
Odonestis belli Tams, 1935 **stat. nov.**
Odonestis leopoldi Tams, 1935
Odonestis angulata (Grüneberg, 1913)
Odonestis vinacea Holloway, 1990
Odonestis schalicteta Tams, 1935
Odonestis ophioglossa Tams, 1935
Odonestis germari **spec. nov.**
Odonestis apo Zolotuhin, Ttreadaway & Witt, 1997
Odonestis pinratanai Zolotuhin, 2005

Odonestis Germar, 1812

Diss. sistens bombycum Species (2): 49. Type-species: *Phalaena Bombyx pruni* Linnaeus, 1758, Syst. Nat. (Ed.10) **1**: 498, by monotypy.

Chrostogastria Hübner [1820] 1816, Verz. bekannter Schmett.: 189. Type-species: *Phalaena Bombyx pruni* Linnaeus, 1758, by monotypy. A junior objective synonym of *Odonestis* Germar, 1812.

Phylloxera Rambur, 1866, Cat. syst. Lepid. Andaluosie (**2**): 347. Type-species: *Phalaena Bombyx pruni* Linnaeus, 1758, by original designation.
A junior homonym of *Phylloxera* Boyer de Fonscolombe, 1834, Ann. Soc. ent. France **3**: 223, xcix, - Insecta, Hemiptera, and a junior objective synonym of *Odonestis* Germar, 1812.

Lobocampa Wallengren, 1869, Skand. Heterocer-Fjörilar **2** (1): 60 (key), 102. Type-species: *Phalaena Bombyx pruni* Linnaeus, 1758, by monotypy. A junior objective synonym of *Odonestis* Germar, 1812.

Pseudarguda Matsumura, 1932, Ins. matsum. **7**: 51. Type-species: *Arguda formosae* Wileman, 1910, Entomologist **43**: 136, by original designation. A junior subjective synonym of *Odonestis* Germar, 1812.

Odonestis pruni (Linnaeus, 1758) -the type species of the genus.

Wingspan 40-46 mm in ♂♂, ♀♀ slightly larger, up to 60 mm. Wing ground colour varies from dark yellow to reddish orange, with a brown pattern. Outer margin of both wings is dentate. White round discal spot is typical for the forewing. Postmedial fascia is fine but distinct, strongly concave; antemedial fascia is weak, concave and external is fine dentate.
In ♂ genitalia (figs 1-5) uncus is reduced; the upper valvar lobes are straight, pointed and the lower ones are short, densely setose. Aedeagus is tubular basally, with distinct apical spur, vesica is large, with sole strong cornutus as long as 2/3 of apical spur.
♀ genitalia (fig. 43): Both pairs of apophyses are of equal length. Corpus bursae is distinctly separated from a very broad ductus bursae by a narrowing. Signa take a medial position, closed, almost parallel.

Bionomics: The species has only one generation in the temperate zone and in northern China, but southwards it gives at least 2 broods per year. *Odonestis pruni* (L.) is a polyphagous species feeding on different Rosaceae, Salicaceae, Ulmaceae, Fagaceae, mostly on *Prunus*, *Pyrus*, *Rubus*, *Crataegus*, *Salix*, *Ulmus*, *Quercus*, rarely on Tiliaceae (*Tilia*), Betulaceae (*Betula, Alnus*) or Rhamnaceae (*Rhamnus*); Ebert (1994) gives *Fagus sylvatica*, *Quercus* spec., *Prunus unsititia, P. domestica* var. *syriaca*, *P. avium*, *P. spinosa* for Baden-Württemberg (Germany); the species feeds on *Ulmus laevis* (Ulmaceae), rarely on *Betula*, *Crataegus*, and *Salix* in Middle Volga Region of Russia (orig. obs.). In China it uses also Melastomataceae (*Melastoma*) as a host; *Quercus acutissima*, *Malus*, and *Pirus* are listed for Taiwan population (Chang, 1989).

Distribution (figs 52, 53): Almost the whole Eurasian territory excluding South Asia and southern parts of India and South-east Asia. The species is somewhat variable, and produces a lot of local races. Its subspecific division is not stable and needs molecular basis for establishing. We are considering 3 subspecies so far, mostly based on geographic criteria.

Odonestis pruni pruni (Linnaeus, 1758) (colour plate 14: 1, 2)

Phalaena Bombyx pruni Linnaeus, Syst. Nat. (Ed. 10): 498. Type locality: «Habitat in Germaniae». Types: not known (absent from LSL).

Odonestis pruni santorui Hartig, 1938, Mem. Soc. ent. ital. **17**: 65. Type locality: [Sardinia] "Porto Santoru in località Foggie Murdegu". Holotype (by original designation): ♂ (ZUR) [not examined].

Odonestis pruni ssp. *reisseri* Rungs, 1977, Alexanor **100** (4): 187. Type locality: [Corse] "Pietrapola". Holotype ♂ (by original designation) (MNHN) [examined].

Odonestis pruni var. *ambitiosa* Dannehl, 1925, Ent. Z. **39**: 116. Type locality: Südtirol, Terlan. Types: originally not given.

Odonestis pruni f. *vulpecula* Dannehl, 1925, Ent. Z. **39**: 115. Type locality: Südtirol, Terlan. Types: originally not given.

Odonestis pruni var. *montana* Jones, 1907, The Entomologist's Monthly Magazine **43** (Ser. 2) N 214: 227. Type locality: Hungary, Herculesbad. Types: originally not given.

Taxonomic notes: The most pale coloured subspecies, with numerous colour forms and aberrations having no taxonomic significance. Among them: *rosacea* Schultz, 1911, *aurantiaca* Lempke, 1937, *lutescens* Lempke, 1960, *rufa* Lempke, 1960. Specimens of the second generation (small and paler) from Spain were designated as gen. aest. *prunoides* Staudinger, 1901; also infrasubspecific.
In the collection of Caroli Linnaeus (LSL), a ♂ of *Euthrix potatoria* (L., 1758) bears an identification label handwritten by ??Clark "*pruni*", and just a ♀ of *E. potatoria* labelled "*potatoria*". But with many common European species and distribution of Linnaeus's syntypes throughout other collections outside Great Britain we propose not to designate a neotype for *Phalaena Bombyx pruni* because its identification bears no problem in all parts of its range.
Both European insular populations of the species from Sardinia and Corsica - *santorui* Hartig, 1938, and *reisseri* Rungs, 1977 - are discriminated as well by a deeper red ground colour and may be separated into subspecies, but special DNA investigation is required to clarify the problem.
♀♀ of the nominate subspecies are not attracted to light or only very rarely so.

Distribution: From Portugal to Eastern Russia (Siberia) including northern Kazakhstan, Caucasus and Turkey.

Odonestis pruni rufescens Kardakoff, 1928 (colour plate 14: 3-6)

Ent. Mitt. Dahlem **7** (6): 417, pl. 8: 17. Type locality: [south-eastern Russia, Russian island] Russkij Inseln, S. Ussuri Region. Holotype ♂ (BMNH), syntypus ♂ (DEIM) [examined].

Odonestis pruni japonensis Tams, 1935, Mem. Mus. Royal Hist. nat. Belg. **4** (12): 56; pl. 6: 4, 5; pl. 8: 3. Type locality: [Japan] Sapporo. Holotype: ♂ (BMNH) [examined].

Wingspan 45-46 mm in ♂♂, ♀♀ up to 62 mm. Wing ground colour is from dark orange to reddish brown, with a darker wing pattern.

Bionomics: Flight period is from June to September; in Japan develops in 2 generations with flight period in June-July and August-September. Inhabits altitudes from 0 to 1500 m. ♀♀ of the subspecies are attracted to light, at least for the population of the Far East of Russia. Caterpillars feed on *Melastoma* (Melastomaceae) in China and *Quercus acutissima*, *Malus*, and *Pirus* are known hosts for the Taiwan population (Chang, 1989). Larval hostplants in Japan are *Quercus* [*serrata*] (Fagaceae), *Pirus* and *Malus* (Rosaceae).

Distribution: Far East of Russia, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea, north-eastern, eastern and central China (Heilongjiang, Jilin, Liaoning, Hebei, Beijing, Nei Monggu, Shanxi, Ningxia, Gansu, Shaanxi, Shandong, Henan, Jiangsu, Anhui, Hubei, Zhejiang, Jiangxi, Fujian, Guangdong, Hunan, Guizhou, Guangxi), Taiwan, Vietnam.

Taxonomic notes: The populations of Taiwan, as well as the southernmost populations (of Vietnam), are somewhat different from the typical *O. p. rufescens* Kardakoff (see also Kishida, 1986), but are considered by us within the latter so far; their status will be probably defined more clearly after their DNA is comparatively studied.
The population of Japan after external and genitalic characters can be placed within *O. p. rufescens* Kardakoff, that led to the following synonymy: *Odonestis pruni rufescens* Kardakoff, 1928 = *Odonestis pruni japonensis* Tams, 1935 **syn. nov.**

Odonestis pruni oberthueri Tams, 1935 (colour plate 14: 7-9)

Mem. Mus. Royal Hist. nat. Belg. **4** (12): 57, pl. 6: 8, 9; pl. 8: 5. Type locality: [China, Sichuan] "frontiere orientale du Tibet". Holotype ♂ (BMNH) [examined].

Odonestis pruni assamensis Tams, 1935, Mem. Mus. Royal Hist. nat. Belg. **4** (12): 57, pl. 6: 10, 11; pl. 8: 6. Type locality: northern India, Assam, Khasia Hills. Holotype ♂ (BMNH) [examined].

Wingspan 44 - 46 mm in ♂♂. The larger subspecies, with dominance of reddish and brownish colours. Submarginal fasciae are distinct, obviously darker than the rest of the wing. Yellowish moths are not characteristic of the subspecies.

Bionomics: Flight period falls in June and July. Mountain subspecies, found as high as 2850 m. Nothing is known about the early stages and host plants.

Distribution: Mountain subspecies, native to Tibet and eastern Himalaya (eastern India, Nepal, Bhutan) and adjoining mountain systems of southern China (Xizang, Yunnan and Sichuan).

Odonestis erectilinea erectilinea (Swinhoe, 1904) (colour plate 14: 16, 17, 19-21, 24)

Arguda erectilinea Swinhoe, 1904, Trans. Ent. Soc. London **1904**: 152. Type locality: Singapore. Holotype ♂ (BMNH) [examined].

Odonestis erectilinea barisana Tams, 1935 **syn. nov.**, Mem. Mus. r. Hist. Nat. Belg. **4** (12): 61, pl. VII, figs 7, 8; pl. XI, fig. 3. Type locality: S. W. Sumatra, Barisan Range, western slopes, 2500 feet. Holotype ♂ (BMNH) [examined].

Wingspan: ♂♂ 28-48 mm (usually 40-46 mm), ♀♀ 53-57 mm, forewing length 18-22 mm in ♂♂ and 26-29 mm in ♀♀ The forewing is almost triangular; ground colour is medium to pale red and external margin with bluish or greyish suffusion; forewing postmedial fascia is strong, straight, dark with whitish outline; antemedial one is dark, clearly defined and both are almost parallel; discal spot is white, round. Hindwings are with light coloured basal part, reddish in central part and grey to bluish in external field. The ♀ is generally larger and darker.
♂ genitalia (figs 7-9): Tegumen and vinculum are band-shaped; tergal process is short, reduced to semiovoid sclerit, distally bifurcate, with rounded or slightly pointed tops. Saccus is very strong, rounded cranially; valvae are curved strongly at 90° and with lower setose lobe. Aedeagus is short, tubular, with long and slightly 'S'-curved apical spur; vesica is with scobination and a heavy sclerotized cornutus. Sternum 8 is powerful, almost symmetric, with long, solitary, straight, caudal process, slightly dentate at apex.
♀ genitalia (figs 45, 48): Apophyses anteriores are longer than the posteriores. Corpus bursae is as broad as the ductus bursae; signa are large and closed together.

Diagnosis: Similar only to *O. lipara* Tams and *O. bheroba* Moore. Can be separated from the former by its lighter ground colour and prominent antemedia, and from the latter by the smaller size, paler coloration and straight postmedia. In all doubtful cases genitalic preparation is recommended.

Bionomics: Flight period falls between February-April and September-December; the species probably produces two generations per year. Inhabits altitudes from 750 to 1150 m. Caterpillars feed on *Combretum quadrangulare* (after Robinson et al., 2001).

Distribution (fig. 55): Sumatra, Borneo, Java, Palawan, Peninsular Malaysia, southern China (Yunnan, northern Hubei), north-eastern India, Myanmar, Laos, Vietnam and Thailand.

Taxonomic remark: Tams (1935) described a dark coloured subspecies *barisana* originating from the Barisan Range of S. W. Sumatra (col. pl. 14: 20). Special investigation of additional specimens from Sumatra as well as from other Sunda islands shows that the dark colour is not geographical but only an individual, or just seasonal, character. Such dark coloured specimens are also known from the continent, therefore they are considered only as individual forms and the new synonymy as given above is established here.

Odonestis erectilinea f r a t e r **spec. nov.** (colour plate 14: 22, 23)

Holotype ♂, Philippinen, Palawan N., Mt. Cleopatra needle, 600-750 m, 21.XI.-2.XII.2000, leg. D. Mohagan (MWM).
Paratypes: 2 ♂♂, the same data (MWM); 11 ♂♂, Philippinen, Palawan, Mt. Salokot, 800 m, 09°51'N, 118°38'E, 10.-27.II.2000 (MWM); 4 ♂♂, Philippinen/S.-Palawan, Mt. Mantallngalan, 600-800 m, 2.-12.VII.2000, leg. D. Mohagan (MWM); 3 ♂♂, S. Palawan/Philipp., Mt. Loiwagang: Brooke's Point, 600-900 m, 15.-26.IX.1998 (MWM); 3 ♂♂, Philippinen, Palawan (N), Mt. Italpak, 500-800 m, 2.-15. III.1998 (MWM); 4 ♂♂, SW Palawan, Barangay Culasi Pinagar, primary forest edge, 37 m, 08°48'46"N 117°28'53"E, 8.-10.XII.2007, leg. J. Lourence (CJL); 3 ♂♂, same locality, but 3.-4.III.2006, leg. J. Lourence (CJL); 2 ♂♂, NW Palawan, 7 km E of Port Barton, primary forest clearing, 130 m, 10°22'581"N, 119°091'E, 13.-14.XII.2007, leg. J. Lourence (CJL).

Diagnosis: Wingspan 46-49 mm in ♂♂. Wing ground colour is reddish-brown. Externally it is very similar to the nominate form.
In ♂ genitalia (figs. 10, 11) uncus is flattened and serrated not rounded as in other subspecies. Cornutus has a rounded top. Sternum 8 not differing in general shape from that of *O. e. erectilinea* Swinh. The ♀ is unknown.

Bionomics: Flight period is November, December, February, March, April, July; probably producing two or more generations per year. Inhabits lower and intermediate altitudes from 37 to 900 m.

Distribution: The Philippines: Palawan.

Etymology: "Frater" (Lat.) - fraternal; in honour of real friends.

Odonestis lipara Tams, 1935 (colour plate 15: 31-34)

Odonestis erectilinea lipara Tams, 1935 Mem. Mus. r. Hist. Nat. Belg. **4** (12): 61, pl. VII, figs. 96 10, pl. XI, fig. 4, 5. Type locality: Borneo, Mt. Murud, 6000-6500 feet. Holotype ♂ (BMNH) [examined].

Wingspan: ♂♂ 40-42 mm, ♀♀ 52 mm. The forewing is almost triangular; the dark ground colour is greyish brown, and external margin has ash grey hue; forewing postmedial fascia is distinct, straight, dark with whitish outline; antemedial one is very weak to completely absent; discal spot is white, round, very small. Hindwings are generally lighter, with basal lightening and much darker in external field. The ♀ is larger and darker brown, without reddish tint. Externally the species is similar to *O. erectilinea* Swin., and differs by broader wings, darker ground colour, absence of antemedial line and much smaller discal spot.
♂ genitalia (fig. 6): Uncus, or tergal processes, is short singular. Valvae are narrow, curved at 90° and bear a lower setose lobe. Aedeagus is short, almost pyramidal, with short and narrow apical spur.; vesica is with single, heavy sclerotized cornutus. Sternum 8 is powerful, almost symmetric, with medial process very slightly moved to the left lobe; the medial process is long, solitary, straight, pointed at the apex.

Bionomics: Mountain species. It is known from altitudes up to 2600 m and is on the wing in March and from July to October (Holloway, 1997: 45), developing probably 2 generations per year. Preimaginal stages and hostplants are unknown.

Distribution (fig. 56): Borneo. Was also reported from Thailand (Zolotuhin & Pinratana, 2005) but this finding was very probably based on mislabelled material. The species seems to be an endemic of Borneo.

Odonestis bheroba bheroba Moore, 1858-1859 (colour plate 14: 10, 13, 14)

Odonestis bheroba Moore, 1858-1859, Cat. lepid. Insects Mus. Hist. East-India House **2**: 424, pl. 12a, fig. 5. Type locality: [India] Darjeeling. Holotype ♀ (BMNH) [examined].

Odonestis formosae harutai Kishida, 1992, Tinea **13** (Suppl. 2): 77, figs 57, 58; pl. 20: 1, 2. Type locality: Nepal, Godavari. Holotype ♂ (NSMT) [examined].

Wingspan ♂♂ 39-43 mm, ♀♀ 56-58 mm, forewing length 21-22 and 29-31 mm correspondingly. The forewing is almost triangular; ground colour is dark carmine red and external margin is with bluish or greyish suffusion; forewing postmedial fascia is strong, slightly but distinctly curved, dark and without whitish outline, antemedial fascia is absent or very weak; discal spot is white, round, mostly flecked with dark scales. Hindwings are darker, without distinct pattern.
♂ genitalia (figs 14, 15): Uncus is small and slender, but apically forked. Saccus is very strong, rounded and widened cranially, almost parallel-sided; valvae are distinctly curved and with lower setose lobe. Aedeagus is short, tubular, with short and slightly 'S'-shaped apical spur; vesica has no scobination. Cornutus is single, very weakly sclerotized, sometimes hardly observed. Sternum 8 is powerful, slightly asymmetric, with long, solitary, straight, caudal process, slightly dentate at apex. Some specimens have a very indistinct bifurcation at the apical third.
♀ genitalia: Corpus bursae is broad; signa are distinctly enlarged.

Diagnosis: The largest species of the genus with smooth external margin of the wings. Can be separated from related species by the curved postmedial line. In doubtful cases genitalic preparation is recommended.

Bionomics: Flight period is February-July and December; probably producing two generations. Inhabits altitudes from 650-1150 m. Caterpillars feed on *Melastoma normale* and *Rubus* spp. (after Robinson et al., 2001), in captivity is as polyphagous as *O. pruni* (L.) and accepts European *Salix*, *Quercus*, *Prunus*, *Sorbus*, *Malus* etc. (pers. obs. - colour plate 16: 83-87).

Distribution (fig. 57): Northern India, Nepal, Southern and eastern China (Zhejiang, Shaanxi, Jiangxi, Fujian, Chekiang, Guangxi, Hainan, Sichuan, Yunnan, Hainan), northern Thailand, northern Vietnam, Myanmar.

Nomenclatorial remarks: 2 different forms of the species can be found sympatrically. One of them is described above, and the second, more rare, is slightly larger, darker, with more abundant dark bluish-grey suffusion and with wings more hyaline. Status of both forms is unclear; both show no differences in ♂ genitalia. Probably other methods of investigation will help to understand their real taxonomic position more precisely.

Odonestis bheroba formosae (Wileman, 1910) (colour plate 14: 11, 12, 15)

Arguda formosae Wileman, 1910, The Entomologist **43**: 136. Type locality: [Taiwan] Formosa, Kanshirei. Lectotypus ♂ (BMNH) [examined].

Similar to the nominate form of *O. bheroba* Moore but is generally lighter with more yellowish hue. Also, grey suffusion on the wings is not very prominent.
In the ♂ genitalia (fig. 13), the uncus is larger than in the nominate subspecies and bifurcate. Medial lobe of sternum 8 is single, without apical bifurcation. ♀ genitalia as figured (fig. 44).

Distribution (fig. 57): Taiwan and coastal forests of eastern China (Jiangxi, Fujian).

Bionomics: Flight period is March-August; probably producing two generations. Inhabits altitudes up to 400 m. Caterpillars feed on local *Quercus* spp. and fruit trees.

Odonestis gisla Zolotuhin & Holloway, 2006 (colour plate 15: 29, 30)

Tinea **19** (3): 255, figs 17, 38. Type locality: Indonesien, Peleng island, 2 km W Sambiut, 150 m u. N. Holotype ♂ (MWM) [examined].

Wingspan 40-45 mm in ♂♂. The species is similar in coloration and wing markings to *O. kama* Zolotuhin & Holloway but with dominance of yellowish tint, more abundant bluish-grey suffusion on the wings, and straight to convex postmedial fasciae, outlined clearly with yellow scales.
♂ genitalia (fig. 18): Tegumen has triangular enlarged socii distinctly sclerotized; vinculum is strap-shaped, saccus is very strong, rounded cranially; valvae are curved, stiletto-shaped, apically tapering, with conical basal setose lobe. Aedeagus is short and compact, with the long, 'S'-shaped apical spur; vesica has a dorsal sclerotized lobe. Sternum 8 is robust, asymmetric, with a long and strong unpaired caudal process and slender apodemes.
♂ genitalia have some similarity to *O. apo* Zolotuhin, Treadaway & Witt, and *O. kama* Zolotuhin & Holloway, but differ in shapes of tegumen, valva, aedeagus and sternum 8.

Bionomics: Unknown. The small sample of moths was collected in July. The ♀♀, preimaginal stages and host plants are still unknown.

Distribution (fig. 56): The species is only known from Peleng Isl. and so far has not been recorded from the main island of Sulawesi.

Odonestis vita vita Moore, 1859 (colour plate 15: 35-38)

In Horsfield & Moore, Cat. lepid. Insects Mus. nat. Hist. east. India House **2**: 424. Type locality: Java. Holotype ♂ (BMNH) [examined].

Wingspan: ♂♂ 32-38 mm, ♀♀ 52 mm, forewing length 19-21 and 26 mm correspondingly. The forewing is almost triangular; ground colour is brick red and external margin has greyish suffusion; forewing postmedial fascia is angled, irregular, dark, without whitish outline, antemedial weak, curved; submarginal line is vague, spotted; discal spot is weak, white, point-like, mostly flecked with dark scales. Hindwings are paler, without distinct pattern.

♂ genitalia (figs 25-27): Tegumen is robust, with bifurcate uncus-like projection; saccus is strong, long, narrow, rounded cranially; valvae are strongly semilunar and with the lower setose lobe protruding in a long membraneous process. Aedeagus has bulbous base and slender, narrow, acute, slightly 'S'-shaped apical spur; vesica has scobination and terminal group of cornuti. Sternum 8 is powerful, strongly asymmetric, with long, bifurcate, serrate caudal process, slightly curved at apex. It is fused with the left sternal lobe and its lower smaller protuberance always rather 'C'-shaped.
♀ genitalia (fig. 49): Broad and compact. Corpus bursae is broad and low, signa are widely separated and laying in a semicircular line, not parallel.

Diagnosis: The smallest species of the genus. Can be separated from related species by the angled, irregular postmedial line. In doubtful cases genitalic preparation is recommended.

Bionomics: Flight period is March-May and November-December, probably producing two generations per year. Inhabits lower altitudes at about 640 m. Caterpillars are flattened, brownish-grey with bluish-violet transversal thoracic bands and feed on *Lagerstroemia*, *Eugenia*, *Psidium*, and *Syzygium jambos* (after Robinson et al., 2001); in Thailand they were pointed out from rose apple *Eugenia* sp., Queen's Crape-myrtle *Lagerstroemia speciosa*, *L. macrocarpa* and guava *Psidium guajava* by Pholboon (1965: 43, 61), Kuroko & Lewvanich (1993: 62) and Lewvanich (2001: 39).

Distribution (fig. 60): Southern China (Guangdong, Guangxi, Hainan), Thailand, Vietnam, Borneo, Sumatra, Java (ssp. *vita* Moore); India (ssp. *indica* Tams, 1935); the Philippines (ssp. brachyschalida Tams, 1935). Formerly the species was also noted from Sri Lanka and southern India as ssp. *ceylonica* Tams, 1935 and *belli* Tams, 1935, but present investigation has shown both are distinct species.

Odonestis vita brachyschalida Tams, 1935 (colour plate 15: 39, 40)

Mem. Mus. r. Hist. Nat. Belg. **4** (12): 59, pl. VI, figs 19, 20; pl. IX, figs 5, 6. Type locality: Philippines, Mindanao, subprov. Lanao, Kolambugan, sea level. Holotype ♂ (BMNH) [examined].

Externally similar to the nominate subspecies but larger (wingspan up to 42 mm in ♂♂), with lighter, finer and less clear wing pattern, sometimes interrupted between veins. At the same time, the discal spot is distinctly larger, contrastingly white, more rounded.
♂ genitalia (fig. 28) are generally as in the nominate subspecies but a bit smaller, the aedeagus is shorter and slightly 'S'-shaped.
♀: Wingspan 46 mm. Ground colour is dirty brown. Wing pattern is dull grey, not contrasting, similar in shape to that of the ♂.

Bionomics: Unknown. All moths were collected in February and May. Mountain subspecies, inhabits altitudes from 0 to 1300 m.

Distribution (fig. 60): The Philippines: Mindanao.

Odonestis vita indica Tams, 1935 (colour plate 15: 41, 42)

Mem. Mus. r. Hist. Nat. Belg. **4** (12): 58, pl. IX, fig. 2. Type locality: India, N.E. Bengal. Holotype ♂ (BMNH) [examined].

The description of the subspecies was based on the only specimen in a very bad condition. Taxonomic status of the subspecies is not clear; most probably it is only the westernmost population of the nominate subspecies but more material is necessary to solve the question.

Bionomics: Unknown. **Distribution** (fig. 60): North-eastern India (Bengal, Meghalaya).

Odonestis filigranica **spec. nov.** (colour plate 15: 43-46)

Holotype ♂, India-Andaman Isl., North Andaman, Baratang Isl., 21.-22.III.1998, leg. E. Grigoriev & V. Siniaev (MWM).
Paratypes: 3 ♂♂, Indien, M. Andaman, Karmatang 1,5 km E, 12°50'72"N, 92°56'10"E, 17-22.VIII.2001, leg. Jan-Peter Rudloff (MWM); 1 ♂, Indien - Andaman Islands, Middle Andaman, 12°50'71"N, 93°49'29"E, 22-26. XI 2000, leg. J.-P. Rudloff (MWM); 1 ♂, Indien - S. Andaman, Port Blair - Mt. Harriet, 11°43'21"N, 92°44'03"E, 23.-24.VIII.2001, leg. Jan-Peter Rudloff (MWM); 3 ♂♂, Indien - Andaman Islands, North Andaman, Mayabunder, 6 km S Karmatany - Rainforest, 12°50'61"N, 92°56'06"E, 17.-21.XI.2000, leg. J.-P. Rudloff (MWM); 1 ♂, Andaman Isl., Middle Andaman, 100 m, Rangat, 22.-23.VIII.1996, leg. St. Naumann (MWM); 1 ♂, India - Andaman Isl., Mt. Harriet National Park Port Blair, 200 m, 4.-6.III.1998, leg. E. Kamenev & V. Siniaev (MWM); 1 ♀, Indien, Little Andaman, Huck Bay, Quarry Hilus, 10°35'52"N 92°30'16"E, 26.-27.VIII.2001, leg. Jan-Peter Rudloff (MWM).

The moths from the Andamans were attributed so far to *O. vita* Moore because of the external similarity but genitalic structures are quite distinct, therefore it is described here as a new species.
♂: Wingspan 37-39 mm, forewing length 20-21 mm. Ground colour is dark reddish brown, darker to the outer margin; wing pattern is fine but distinct. The postmedial fascia is brown, fine, convex, with 2 distinct bendings of similar shape. The submarginal fascia is broader, broken into separate fragments.
♀ is larger, wingspan 50-52 mm, forewing length 28 mm, of reddish brown coloration, with pattern less distinct.
♂♂ genitalia (figs. 31-33) are very characteristic, with the shape of the uncus diagnostic. It is always bifurcate with slender lobes and closed socii. Valvae are short, slightly concave. Sternum 8 is typical in shape for *vita*-group, asymmetric. Medial lobe is moved to the right and apically bifurcate; apical processes vary in shape. Aedeagus is very slender and long, curved apically. Cornutus like a plate covered with numerous small spines.
♀ genitalia (fig. 50): Similar to those of *O. vita* Moore, but finer, with signa weakly sclerotized and widely moved apart. Apophyses anteriores are almost 2 times longer than the posteriores.

Diagnosis: Wing pattern is similar to that of *O. vita* Moore but darker and more contrasting. Generally, the Andamanian moths are darker and the discal spot is slightly larger. ♂♂ genitalia are diagnostic.

Bionomics: The species inhabits rainforests of lower altitudes (100-200 m) and is on the wing in March, August and November, therefore probably developing a few overlapping broods through the year.

Distribution (fig. 58): Andaman Islands.

Odonestis ceylonica Tams, 1935 **stat. nov.** (colour plate 15: 47, 48, 50)

Odonestis vita ceylonica Tams, 1935, Mem. Mus. r. Hist. Nat. Belg. **4** (12): 59, pl. VI, figs 15, 16; pl. IX, fig. 3. Type locality: [Sri Lanka] Colombo. Holotype ♂ (BMNH) [examined].

♂: Wingspan 36-43 mm, forewing length 20 mm. Ground colour is lighter than in other members of the group, with light lilac saturation and indistinct slender wing pattern. Postmedial fasciae are convex and dentate.
♀ is larger, 56-58 mm, forewing length 27 mm, but of the same pattern and ground colour.
♂ genitalia (figs 29, 30): Uncus is short triangular. Valvae are slightly curved and apically pointed. Sternum 8 is asymmetric; medial lobe is moved to the right lateral lobe and forked in distal 1/3. Aedeagus is medium-sized, with hooked apical spur. Cornutus like a plate covered with numerous small spines.
♀ genitalia (figs 34, 51): Apophyses anteriores are longer than the posteriores. Vaginal plates are weak, almost reduced. Ostium is wide open. Ductus bursae is wide, corpus bursae is elongated; signa are very small, weakly sclerotized and widely moved apart on the sides of the corpus bursae.
Distribution (fig. 59): Sri Lanka, southern India (Kanara).

Odonestis belli Tams **stat. nov.** (colour plate 15: 49)

Odonestis vita belli Tams, 1935, Mem. Mus. r. Hist. Nat. Belgi. **4** (12): 60, pl. VI, figs 17, 18; pl. IX, fig. 4. Type locality: [SW India] "Kanwar (India)". Holotype ♂ (BMNH) [examined].

♂: Wingspan 45 mm, forewing length 21 mm. Ground colour is similar to that of *O. ceylonica* Tams but somewhat darker, with dark greyish external suffusion, postmedial fasciae wider and more distinct. ♀ is unknown.
♂ genitalia (fig. 21): Uncus is M-shaped, elongated. Socii are short triangular. Valvae are slightly curved medially, long, pointed. Sternum 8 is strongly asymmetric; its medial process apically forked, 2 times longer that the lateral lobes. Aedeagus is medium sized, with slender and hooked apical spur. Cornutus like a plate covered with numerous small spines.

Distribution (fig. 61): Coast of south-western India.

Taxonomic remarks: In Zolotuhin (1998: 70), the species was wrongly synonymized to *O. ceylonica* Tams, 1935. Both species are extremely similar in appearance and are known after a very few specimens. Both seem to be allopatrically ranged. More material is necessary to clarify the range of both species and possible sympatrical zone.

Odonestis leopoldi Tams, 1935 **stat. nov.** (colour plate 15: 51-54)

Odonestis vita leopoldi Tams, 1935, Mem. Mus. r. Hist. Nat. Belg. **4** (12): 60, pl. VI, figs 21-28; pl. IX, fig. 7; pl. X, figs 1-3. Type locality: Philippines, Mauo-Samar. Holotype ♂ (BMNH) [examined].

♂: Wingspan 36-38 mm, forewing length 17-19 mm. Externally very similar to *O. vita* Moore but with ground colour varying from reddish orange to light brown and with the postmedial fascia being not zigzag-shaped but almost straight.
♀♀ are up to 52 mm, darker than ♂♂, with dominance of brown colour.
♂ genitalia (figs. 22, 23): Uncus is absent. Valvae are slender, distinctly curved, pointed. Sternum 8 is strongly asymmetric; medial lobe is forked, both its processes are curved on the right and almost parallel. Aedeagus is long and narrow. Cornutus like a plate covered with numerous small spines. ♀ genitalia were not examined.

Bionomics: Semper (1896-1902: 454-455) described the bionomics of a lasiocampid species from Manila and named it *Arguda bheroba* (Moore). Since *O. leopoldi* Tams is the only species of the genus known from Manila and it really has some affinities with *O. bheroba* Moore, we propose the description be attributed to the species under consideration. Semper writes: „Flugzeit: April bis Juni, September bis November..... Die Raupe frisst die sehr harten eiförmigen Blätter von Dujat (*Eugenia* spec.). Sie ist hellbraungrau mit dunkleren Längsstreifen und schwach behaart. Der Kopf ist dunkel-braun mit schwärzlichen Zeichnungen, auf dem vorletzten Gliede ist ein runder dunkel-brauner Höcker. Hinter dem ersten Gliede ist ein schwarzes Feld, aus dem zwei violette Haarbüschel hervorragen. Sie spinnt sich zwischen Blättern ein in einem weissen ovalen Cocon. Die Puppe ist länglich, unten hellbraun, oben dunkler mit einer dunklen Erhöhung zwischen Brustschild und Rumpf. Die Puppenruhe dauert bei Manila im September 11 Tage" .
The species inhabits altitudes from 0 to 690 m and is on the wings from April to November; develops 2 or 3 generations per year.

Distribution (fig. 58): The Philippines: Luzon, Leyte.

Odonestis angulata (Grünberg, 1913) (colour plate 16: 55-58)

Arguda angulata Grünberg, 1913, Ent. Rundsch. **30**: 104. Type locality: Sampit, Borneo. Lectotype ♀ here designatet (MHUB) [examined].

♂: Wingspan 35-43 mm, forewing length 15-18 mm. Ground colour is yellowish brown, darker outwards. Postmedial fascia is dark brown, 'M'-shaped, distinctly curved medially to outer margin of the wing. Submarginal fascia is weak, also dark brown, as sole spots or interrupted strokes. Discal spot is small ovoid whitish, with dark outer ring.
♀♀ are larger, 43-48 mm, of the same pattern and ground colour or somewhat darker.
♂ genitalia (fig. 20): Uncus is small rounded. Valvae are with narrowing in the distal third and with rounded tips. Sternum 8 is asymmetric, with medial process closed to the left lobe. This medial process is divided in upper third and right part of this fork distinctly shorter than the left one; tips of both are pointed. Aedeagus is strongly sclerotized, slightly 'S'-curved, with slender apex. Cornuti are absent.

Bionomics: In Borneo, all specimens have been taken in lowland localities but the species occurs at altitudes up to 1000 m. The moths are on the wing from January to May and also in July and October.

Distribution (fig. 62): Borneo, Sumatra, Peninsular Malaisia.

Nomenclatorial remarks: The species was described after 2 ♀♀ kept now in ZHUB, both in poor condition. One of both is designated here as a lectotype. It bears the following labels: red rectangular with printed «Type»; yellow rectangle with hand written «Sampit,/ Borneo Rupert»; white-off from the age, papered rectangle with handwritten «*Arguda*/ *angulata* ?????/ Type!»; the smaller label with handwritten «Keine *laeta*/ ????»; small carton rectangle with print «20325»; yellowish rectangle label with typed «Zool. Mus./ Berlin». The specimen is supplied with an additional red, black framed rectangular label bearing the printed text: "Lectotype, female / *Arguda* / *angulata* Grünberg, 1913 /des. Sergeev & / Zolotuhin 2010". The second ♀ specimen is considered as a paralectotype of the taxon and is so designated with a corresponding label.

Odonestis apo Zolotuhin, Treadaway & Witt, 1997 (colour plate 16: 60-62)

Nachr. ent. Ver. Apollo **17**: 189, pl. 8: C, Gen. Plate XIII, fig. 2. Type locality: Philippines, Mindanao, S-Cotabato, Mt. Busa. Holotype ♂ (Senckenberg Museum zu Frankfurt a. M.) [examined].

Wingspan 41-44 mm in ♂♂, forewing length 25-27 mm. In external characters very similar to *O. erectilinea* (Swinhoe) but darker with more red-vine ground colour. Outer margin of the forewing with numerous silvery blue scales; hindwings are much darker and almost monotonously coloured without a distinct pattern. Forewings have a distinct white discal spot (either round or comma-shaped) and transversal dark brown whitish outlined medial lines. Antemedial fascia is weakly curved outside and postmedial one is almost straight. General shape of the wings as in *O. erectilinea* (Swinhoe).

♂ genitalia(fig. 19): Uncus is weak to almost absent. Valvae are slender, curved, pointed, almost parallel-sided. Sternum 8 is strongly asymmetric; medial lobe is moved to the right side, forked in apical third, right process is shorter than the left one, both with rounded tops and closed. Aedeagus is short, with apical spur slender and straight. Cornutus like a large plate covered with numerous small spines.

♀ has a wingspan of 45 mm and forewing length 25 mm. Wings are dark brownish, more obscure externally. Wing pattern is smooth but obvious, dark grey. Postmedial fascia is especially prominent, with vague margins and solitary medial bending. Discal dot is distinct, ovoid, whitish.

Bionomics: The species inhabits intermediate altitudes of 350-1480 m, and is on the wing from February to September. Preimaginal instars and hostplants are so far unknown.

Distribution (fig. 56): The Philippines: Leyte, Luzon and Mindanao.

Odonestis kama Zolotuhin & Holloway, 2006 (colour plate 15: 25-28)

Tinea **19** (3): 252, figs. 15, 16, 37. Type locality: Z. Sulawesi, Kulawi, 1°26' S, 120°00'E, 1000 m. Holotype ♂ (MWM) [examined].

Wingspan 42-48 mm in ♂♂, forewing length 25-26 mm. The forewing is almost triangular, with undulate and slightly concave outer margin; ground colour is bright sandy-red, with distinct bluish suffusion in outer field; forewing antemedial fascia is indistinct to completely absent, the postmedial one is slightly concave, dark grey, with distinct yellow outer border; discal spot is small to medium-sized, rather rectangular or rounded, snow-white. Submarginal fascia is weak, vague, greyish, present as separated irregular spots between veins. Hindwings are rounded, darker than the forewings, without pattern.

♀♀ are larger, wingspan 62-67 mm, forewing length 35 mm. They are slightly darker, with more vague pattern and without yellowish bordering of the postmedial fasciae in the forewing.

♂ genitalia (figs. 16, 17): Tegumen with paired triangular protuberances, and vinculum is band-shaped, Saccus is very strong, rounded distally; valvae are digitate, curved upwards, with the lower lobe setose. Aedeagus is short and compact, with long, 'S'-shaped apical spur; vesica has a dorsal zone of very small cornuti forming a cap. Sternum 8 is robust, asymmetric, with long and strong caudal process with paired, strong, unequal lobes and slender apodemes.

♀ genitalia (fig. 47): Antrum is very broad, deep, with wrinkled postvaginal plates; ductus is membraneous, corpus bursae is elongated and has a pair of lance-shaped signa.

Bionomics: Records indicate that the species is on the wing practically thoroughout the year and is probably continuously brooded. Inhabits altitudes from 900-1500 m. Preimaginal stages and host plants are unknown.

Distribution (fig. 58): Only known from Sulawesi.

Odonestis schalicteta Tams, 1935 (colour plate 16: 70-74)

Mem. Mus. r. Hist. Nat. Belg. **4** (12): 63, pl. VII, figs 18-22; pl. X, figs 4, 8. Type locality: SW Sumatra, Barisan range, western slopes, 2500 ft. Holotype ♂ (BMNH) [examined].

Wingspan 40-44 mm in ♂♂, forewing length 20-22 mm. Forewings narrow, with falcate apex; outer margin of the wings convex. Ground colour brownish-grey with greyish suffusion outwards. Wing pattern indistinct, transversal fasciae just darker than ground colour. Discal spot very small, not prominent to completely absent. Hindwings of trapezium shape, brown, darker outwards, with distinct grey suffusion in submarginal zone and without any pattern. The ♀♀ are so far unknown.

♂ genitalia (figs. 39, 40): Tegumen is without uncus; valvae are short, strongly curved upwards, with the broad base and pointed apex. Aedeagus has short pointed apical spur; vesica has small solitary cornutus. Sternum 8 is symmetric, medial lobe is symmetrically divided in apical 1/3.

Bionomics: Occurring at the altitudes of 750-1300 m, the species has been recorded in practically every month of the year. Supposed to develop 2 or 3 overlapping generations per year. Hosts unknown.

Distribution (fig. 63): Sumatra, Nias, Malay Peninsula.

Odonestis vinacea Holloway & Bender, 1990 (colour plate 16: 67-69)

Heterocera Sumatrana **6**: 44, pl. 3: 5; fig. 11. Type locality: Sumatra N., Toba Lake S. E., Tele, 1150 m. Holotype ♂ (BMNH) [examined].

Wingspan 37-41 mm in ♂♂, forewing length 20-21 mm. Forewings are narrow, with falcate apex but not distinctly so as in *O. schalicteta* Tams; outer margin of the wings is convex; wings are broader than in related congeners. Ground colour varies from deep vine-red to dark brown and almost black. Wing pattern is indistinct, darker than the ground colour, or indiscernible in very dark specimens. Discal spot is very small white, not prominent. Hindwings are with rounded outer margin, dark brown to blackish, patternless, but sometimes with an indistinct submarginal shadow. ♀♀ are unknown so far.

♂ genitalia (figs 37, 38): Tegumen is without uncus; valvae are short, with pointed apex. Aedeagus is short and straight, with a pointed apical spur; vesica is without cornuti. Sternum 8 is symmetric, all its lobes are broad and low; medial lobe has broad base and symmetric caudal bifurcation.

Bionomics: Occurring at altitudes of 800-1150 m, the species has been recorded in June and July. At the same time, it is a very rare species, known only from very few specimens; supposed to develop 2 or 3 generations per year. Preimaginal instars and hostplants are unknown.

Distribution (fig. 61): Seems to be endemic to Sumatra.

Odonestis ophioglossa Tams, 1935 (olour plate 16: 81-82)

Mem. Mus. r. Hist. Nat. Belg. **4** (12): 62, pl. VII, figs 13-17, pl. X, figs 5-7. Type locality: SW Sumatra, slopes of Mt. Korintji, 7300 ft. Holotype ♂ (BMNH) [examined].

Wingspan 43-48 mm in ♂♂, forewing length 26 mm. Forewings are narrow, with falcate apex but not distinctly so as in *O. vinacea* Holloway, *O. schalicteta* Tams or *O.* ***germari*** **spec. nov.**; outer margin of the wings is slightly convex; wings are narrow. Ground colour is light reddish-brown with rather abundant ash grey hue. Wing pattern is distinct, with vertical straight dark grey postmedial fascia having outer whitish border. Discal spot is medium sized, clear, white. Hindwing is similarly coloured to the forewing, reddish brown to brown outwards, with fine grey submarginal suffusion. Cilia is lighter and therefore contrasting. ♀♀ are unknown so far.
♂ genitalia (fig. 12): Tegumen is without uncus; valvae are short, straight, broadened medially, with pointed apex. Aedeagus is short and straight, with pointed apical spur; vesica is without cornuti. Sternum 8 is symmetric, medial lobe is short but in 1/3 longer than the lateral lobes, and is symmetrically divided almost from its base.

Bionomics: Mountain species, occurring at altitudes of 2000-2200 m, the species has been recorded in August and September. Preimaginal instars and hostplants are unknown.

Distribution (fig. 59): Seems to be endemic to Sumatra if not just to Mt. Korintji only. It is known only from the type series.

Odonestis maya Zolotuhin & Holloway, 2006 (colour plate 16: 63-66)

Tinea **19** (3): 255, figs 18-21, 39. Type locality: S. Sulawesi, Mt. Sampuraga, 2˚10'S, 120˚45'E, 1400 m. Holotype ♂ (MWM) [examined].

Wingspan 33-35 mm in ♂♂, forewing length 18-19 mm. The forewing is short, almost triangular, with smooth and straight outer margin; ground colour varies from dark reddish to very dark blackish red, without any distinct suffusion; forewing antemedial fascia is reduced, the postmedial one is straight or very slightly concave, blackish, bordered with whitish scales in some specimens; discal spot varies in size and shape from large, rounded, snow-white to very small, punctuate or streak-like, absent in some specimens. Submarginal fascia is weak, vague, blackish, present as dentate line or singular irregular spots between veins. Hindwings are rounded, of the same ground colour as the forewings, without pattern. Wing pattern of the undersurface of the hindwing is indistinct, obscured under abundant bluish suffusion.
The ♀ is slightly larger, with wingspan 41 mm and forewing length 22 mm. Dull reddish in coloration, with the same shape of the wings as the male. White discal spot is small, outlined with black scales; postmedial fascia is more prominent than in males, almost straight, of dark grey coloration.
♂ genitalia (figs. 35, 36): Tegumen and vinculum are strap-like, saccus is strong and broad, rounded distally; socii are sclerotized, looking like small triangular plates; valvae are digitate, with a ventral lobe, setose. Aedeagus is short, with short and broad apical spur strongly curved in a claw; vesica has abundant scobination covering distal lobe. Sternum 8 is asymmetric, compact, with short, symmetric, almost parallel-sided, deeply excavated caudal process and slender apodemes.
♀ genitalia as figured (fig. 46).

Bionomics: Little known. All records in the period from September to March, inhabits intermediate altitudes, of about 900-1800 m. Preimaginal stages and host plants are unknown.

Distribution (fig. 59): Endemic to Sulawesi.

Odonestis g e r m a r i **spec. nov.** (colour plate 16: 75-78)

Holotype ♂, Borneo, Selatan, 30 km E von Kandangan, Regenwald, 800 m, 15 km NE Loksado, 2˚52'S, 115˚38'E, XI.1997, leg. Jakl (MWM);
Paratypes: 1 ♂, Malaysia, Borneo, Sabah, Trus Madi, 1200 m, 1.-12.IV.2005, leg. Martini (MWM); 1 ♂, N Sumatra, Karo highland, 900 m, III.1978, T. Hasegawa leg. (NSMT); 1 ♂, Sumatra, Prapat (BMNH) (figured in Holloway & Bender, 1990, plate 7: 10).

For a long time the species was confused with the related *O. schalicteta* Tams. It is really very similar externally and can nearly be distinguished.

Wingspan 37-40 mm in ♂♂, forewing length 20-21 mm. The forewing is narrow, almost triangular, with distinctly falcate apex; ground colour varies from dark reddish to very dark blackish red, without any distinct suffusion; the ground colour is distinctly more reddish than in *O. schalicteta* Tams. Both medial fasciae are present, straight and smooth, submarginal fascia distinct, dark brown to blackish coloured. Discal dot is absent. Hindwing has the shape of a trapezium, sometimes convex on the outer margin, darker than the forewing, brown with reddish tint, without any pattern.
♂ genitalia (figs 41, 42): Tegumen has no uncus and with low socii; valvae are broad and short, curved under 90˚ and with apical narrowing. Aedeagus is short, hook-shaped; vesica is with solitary small cornuti. Sternum 8 is symmetric, lateral lobes are short and broad, coming under 45˚, medial lobe is 1/3 longer than the lateral lobes, and is symmetrically divided on the top, but its right processes somewhat shorter than the left. ♀ is unknown so far.

Bionomics: All records based on the four specimens listed above. They were collected in March, April and November from intermediate altitudes of about 900-1200 m. In Borneo it is known from rainforests. Preimaginal instars and hosts are unknown.

Distribution (fig. 63): Sumatra and Borneo.

Etymology: The species is dedicated to the entomologist (better known as a coleopterologist) Ernst Friedrich Germar (1786-1853), who erected the genus under review.

Odonestis pinratanai Zolotuhin, 2005 (colour plate 16: 79-80)

Moths of Thailand **4**: 138, pl. 20, figs 12, 15, 20D. Type locality: Thailand, Kanchanaburi, Sri Sawat. Holotype ♂ (CBAP) [examined].

Wingspan in ♂♂ 39-40 mm, forewing length 19-19.5 mm. The forewing is almost triangular, with smooth outer margin; ground colour is medium to dark brown and external margin is semitransparent, with bluish-grey suffusion; forewing postmedial fascia is hardly visible, curved, greyish; the antemedial fascia is absent; discal spot is very small, point-like or semilunar, white. Submarginal fascia is weak, present as rounded dots in M-Cu zone. Hindwings have a light basal part but are reddish-brown in central part and

reddish-grey in external field.
♂ genitalia (fig. 24): Tegumen and vinculum are band-shaped, saccus is very strong, rounded cranially; valvae are cone-shaped, with the lower lobe setose. Aedeagus is short, tubular, with short but distinct apical spur; vesica has dorsal zone of very small cornuti forming a semicircle. Sternum 8 is powerful, symmetric, lacking caudal process, but with paired, strong, triangular lobes and slender apodemes typical of other *Odonestis* Germar. Neither externally nor in ♂ genitalia can it be confused with other species of the genus. The unusual shape of sternum 8 seems to be a plesiomorphic or just an ancestral character. No similar species is known throughout its range. The ♀ is still unknown.

Bionomics: Flight period falls in May and October; probably producing two generations per year. Preimaginal stages and host plants unknown.

Distribution (fig. 61): Only known from the type locality in southern Thailand.

Discussion: Thus, 19 species are now recognized within the genus. The placement of the genus between related genera was recently analyzed using methods of DNA sequencing (orig. data; will be published in due course). Surprisingly, the *Odonestis*-clade was moved apart from those of *Arguda* Moore, 1879, *Radhica* Moore, 1879, and *Syrastrena* Moore, 1884 (that relationship has been supposed until now) but was joined together with *Argonestis* Zolotuhin, 1995. This situation needs more careful investigation and will be clarified later when more material will be analyzed. For the present, we shall treat the tribe Odonestini Tutt, 1903 s. str. as consisting only of 2 branches with 2 genera involved, the prope *Odonestis* Germar and *Argonestis* Zolotuhin.

Acknowledgements. It is a pleasure for us to express our sincere thanks to our colleagues who helped us in different ways during the preparation of the revision: Martin Honey and Geoff Martin (BMNH), Joël Minet (MNHN), Wolfram Mey (MHUB), Mamoru Owada (NSMT), Dieter Stüning (ZFMK), Bert Gustafsson (RMS), Ulf Eitschberger (Marktleuthen, Germany), Thomas J. Witt (MWM), Axel Hausmann and Ulf Buchsbaum (ZSM), Willem Hogemes (Zoological Museum University of Amsterdam, the Netherlands), Alberto Zilli (City Museum of Zoology of the Municipality of Rome) as well as Armin Hauenstein (Schwäbisch Hall - Untermünkheim-Schönenberg, Germany), Bro. Amnuay Pinratana (Bangkok, Thailand), Jan Lourence (Alabang, the Philippines), Siegfried Ihle (Ingolstadt, Germany) and Manfred Ströhle (Weiden, Germany). Aslo we are grateful to Alexey Solovyev (Uljanovsk, Russia) for technical support during his stay in London in 2008 and for the correction of graphics used in the article, and to Mr. Eddie John (Cowbridge, U.K.) for linguistic correction of the manuscript.
Financially the investigation was supported by Thomas-Witt-Stiftung in 2007-2008.
The images of the typical specimens from the collection of the BMNH are figured here courtesy of The Trustees of the Museum.
The work is a part of a programme of the Department of Zoology (State Pedagogical University of Uljanovsk) on an investigation into the biodiversity of moths.

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Colour plate 14 (p. 494)

(1, 2) *Odonestis pruni pruni* (Linnaeus, 1758): (1) ♂, Ukraine, Bukovina, 600 m, 1994 (MWM); (2) holotype ♂ of *O. pruni reisseri* Rungs, 1977, Pietropola, 15.-30.VII.1976, coll. Charles Rungs (MNHN). (3-6) *O. pruni rufescens* Kardakopff, 1928: (3) ♂, Taiwan, prov. Ilan, 1200 m, Ming Chyr Forest Recreatioin Area, 4.-5.VII.1997, leg. B. Herczig & L. Ronkay (MWM); (4) holotype ♂, Narva, S. Ussurigebiet, 2.VIII.1921, Kardakopff (HUB); (5) holotype ♂ of *O. pruni japonensis* Tams, 1935, Japan, Sapporo, 16.VII.1918 (BMNH); (6). ♀, Minobu, Yamanashi, Japan, 24.VI.1994, Y. Kishida (NSMT). (7-9) *O. pruni oberthueri* Tams, 1935: (7) holotype ♂, Frontiere orientale du Thibet chasseurs indigenes du P. Dejean, 1906 (BMNH); (8) holotype ♂ of *O. pruni assamensis* Tams, 1935, Khasia Hills, Assam, Davidson Coll. B.M. 1925-754 (BMNH); (9) ♂, N. E. Burma, Kambaiti, 2.000 m , 9.VI 1934, Malaise (RMS). (10, 13, 14) *O. bheroba bheroba* Moore, 1858-1859: (10) ♀, Holotype, Darjeeling, Sahlaginlwat (BMNH); (13) ♂, Nepal, Kathamandu, Godavari, 1600 m , 4.III.1992 (NSMT); (14) ♂, China, Zhejiang Prov. Kuocang Shan, Nordl. Flanken, Oberlauf d. Lang Jiang river, Flachland, 600-900 m , III.-M.VI.2000, lg. J. L. Li (MWM). (11, 12, 15, 18) *O. bheroba formosae* (Wileman, 1910): (11) holotype ♂ of *O. formosae harutai* Kishidai, 1992, Nepal, Kathamandu, Godavari, 1600 m, 26.III.1990 (NSMT); (12) ♀, Taiwan, Miaoli, Shihtoushan, 5.III.1980, T. Tanabe (NSMT); (15) syntype ♂ of *Arguda formosae* Wileman, 1910, Kanshirei, Formosa, 100 ft., 6.III.1908, A. E. Wileman (BMNH); (18) ♂, Taiwan, prov. Taitung, 4 km N of Tupan, 390 m, 14.VII.1997, 120°52'E, 22°28'N, lg. Csovari & Micus (MWM). (16, 17, 19-21, 24) *Odonestis erectilinea erectilinea* (Swinhoe, 1904): (16) holotype ♂ of *Arguda erectilinea S*winhoe, 1904, Singapore, N. H. Bidley, 1900-242 (BMNH); (17) ♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 18.XI.-3.XII.1992, 400 m, leg. Sinjaev & Simonov (MWM); (19) ♂, Thailand, Changwat Chiang Mai, Mt. Doi Phahomopok, 16 km NW of Fang, 2000 m, 15.II.1998, leg. Marton Hreblay & Csaba Szaboky (MWM); (20) holotype ♂ of *O. erectilinea barisana* Tams, 1935 **syn. nov.**, Barisan Range, Western Slopes, S.W. Sumatra, 2500 ft., X.-XI.1921, C., F., & J. Pratt (BMNH); (21) ♂, Sipulut, 800 m, N. Borneo, 2.I.1992 (NSMT); ♀, Borneo S., Prov. Sabah, Mt. Trus Madi bei, Apin Apin, 1080 m, 21.III.-12.IV.2006, leg. K. Martini (MWM). (22, 23) *O. erectilinea **frater*** **subspec. nov.**: (22) holotype ♂, Philippinen, Palawan N., Mt. Cleopatra needle, 600-750 m, 21.XI.-2.XII.2000, leg. D. Mohagan (MWM); (23) paratype ♂, Philippinen, Palawan, Mt. Salokot, 800 m, 09°51'N, 118°38'E, 10.-27.II.2000 (MWM).

Colour plate 15 (p. 495)

(25-28). *Odonestis kama* Zolotuhin & Holloway, 2006: (25) holotype ♂, Z. Sulawesi, Kulawi, 1°26'S, 120°00'E, 7.-8.II.1995, 1000 m, leg. Sinjaev & Tarasov (MWM); (26) paratype ♂, Indonesien, Sulawesi (S), Puncak Palopo, 900-1300 m, II.1998, leg. local collectors (MWM); (27) ♂, Tambusisi, C. Sulawesi, Indonesia, II.1996, (NSMT); (28) ♀, Palolo, C. Celebes, Indonesia, 23.IV. 1984, leg. S. A. Nashimoto (NSMT). (29, 30) *Odonestis gisla* Zolotuhin & Holloway, 2006, holotype ♂, Indonesian, Peleng Isl., 2 km W Sambiut, 150 m ü. N, VII.1998, leg. local collector (MWM); (30) paratype ♂, Indonesian, Peleng Isl., 2 km W Sambiut, 150 m u. N, VII.1998, leg. local collectors (MWM). (31-34) *O. lipara* Tams, 1935: (31) holotype ♂, Borneo, Joicey coll. (BMNH); (32) ♂, Sabah, Mt. Kinabalu, Park. H. Q. 1600 m, 7.XI.1965, H. J. Banks, H. S. Barlow & J. D. Holloway (BMNH); (33) ♂, Borneo, Sabah, Kota Kinabalu, Krocker Range, 1600 m, 1.-20.III.1992 (NSMT); (34) ♀, N Thailand, Changmai, Sansai, 17.IX.1985 (MWM). (35-38) *Odonestis vita vita* Moore, 1859: (35) holotype ♂, Java (BMNH); (36) ♂, Thailand, Changwat Phayao, 15 SE Chiang Muan, 640 m, 24.XI.1998, leg. Tibor Csovari & Laszlo Micus (MWM); (37) ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan, (West) Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 10.-30.X.1994, leg. Sinjaev & einh. Saml (MWM); (38) ♀, Philippinen, Palawan (N), Mt. Italpak, 500-800 m, 2.-15. III.1998 (MWM). (39, 40) *O. vita brachyschalida* Tams, 1935: (39) holotype ♂, Kolambugan, subprov. Lanao, Mindanao, sea level, 24.V.1914, A. E. Wileman (BMNH); (40) ♂, Philippinen, Mindanao, prov. Bukidnon, Mt. Dalongdong, Talakag, 40 km NW Maramag, 1300 m, 2.-11.II.2000 (MWM). (41, 42) *Odonestis vita indica* Tams, 1935, holotype ♂, N.E. Bengal, 1935, Moore coll. (BMNH); (42) ♂, NE India, 1150 m, W-Meghalaya, Nokrek, Nat. Park Caro Hills, 25°40'N, 91°04'E, 2.-13.VII.1997, leg. Afonin & Siniaev (MWM). (43-46) *O. **filigranica*** **spec. nov.**: (43) holotype ♂, India-Andaman Isl. North Andaman, Baratang Isl., 21.-22.III.1998, leg. E. Grigoriev & V. Siniaev (MWM); (44) paratype ♂, Indien, M. Andaman, Karmatang 1,5 km E, 12°50'72"N, 92°56'10"E, 17.-22.VIII.2001, leg. J.-P. Rudloff (MWM); (45) ♂, Indien, Andaman islands, North Andaman, Mayabunder 6 km S, Karmatany-Rainforest, 12°50'61"N, 92°56'06"E , 17.-21.XI.2000, leg. J.-P. RudloffF (MWM); (46) ♀, Indien, Little Andaman, Huck Bay, Quarry Hilus, 10°35'52"N, 92°30'16"E, 26.-27.VIII.2001, leg. Jan-Peter Rudloff (MWM). (47, 48, 50) *O. ceylonica* Tams, 1935 **stat. nov.**: (47) holotype ♂ of *O. vita ceylonica* Tams, 1935, Colombo, Mackwood coll. (BMNH); (48) ♂, S. India, Kanara, T. R. Bell (BMNH); (50) ♀, Ceylon (BMNH). (49) *O. belli* Tams, 1935 **stat. nov.**, holotype ♂ of *O. vita belli* Tams, 1935, Kanwar, 29.X.[19]00 (BMNH). (51-54) *O. leopoldi* Tams, 1935: (51) paratype ♂ of *O. vita leopoldi* Tams, 1935, Montalban, 14.IV.1914 (BMNH); (52) ♂, Philippinen, 600 m, Negros (prov. Negros occ.), Mt. Kanlaon, W-route, via Mambucal, I.1997, Primärwald (MWM); (53) ♂, Philippinen, N. Luzon, Ifugao Banaue vic., 20 km N Lagawe, Secundärwald/Reisfelder, 16°54`N, 121°06`E, 22.IX.-16.X.1988, 2000 m, leg. Cerny & Schintlmeister (MWM); (54) ♀, Philippinen, Negros (prov. Negros Occidental), Mt. Kanlaon, 600-800 m, W-route via Mambucal, I.1998, prim. forest (MWM).

Colour plate 16 (p. 496)

(55-58) *Odonestis angulata* (Grüneberg, 1913): (55) holotype ♀, Sampit, Borneo, Rupert (ZMHU); (56) holotype ♀, Malacca, Eichhorn (ZMHU); (57) ♂, Malaysia, Borneo, Sabah, Mt. Trus Madi, 1150, 20.III.-18.IV.2003, K. & B. Martini (MWM); (58) ♂, W. Sumatra, Mt. Sanngul, Landai, 1200 -1300 m, 0°00'N, 100°38'E, 1.II.2004, leg. St. Jakl (MWM). (59-62) *O. apo* Zolotuhin, Treadaway & Witt, 1997: (59) paratype ♂, Philippinen, Mindanao, 1200m, Mt. Apo Westflanke, Sekundärwald, 6°57'N, 125°16'E, 28.-30.VII.1993, lg. Sinjaev & Schintlmeister (MWM); (60) paratype ♂, Philippinen, Mindanao, prov. Davao del Sur, Mt. Apo, SE-route via Kapatagan, 2230m, 8.VII.1996, mountain rain forest, leg. Dr. Ronald Brechlin (MWM); (61) paratype ♂, Philippinen, Mindanao, prov. Davao del Sur, Mt. Apo, SE-route via Kapatagan, Primärwald, 10.-12. VII.1996, 1570 m, lg. Brechlin (MWM); (62) ♂, Philippines, Mindanao, South Cotabato, Maitum Motoklot, 650 m, 11.VIII.1985, M. Owada (NSMT). (63-66) *O. maya* Zolotuhin & Holloway, 2006, holotype ♂, S. Sulawesi, Mt. Sampuraga, 2°10'S, 120°45'E, 1.-6.II.1995, 1400 m, leg. Sinjaev & Tarasov (MWM); (64 ♂, 65 ♀) C. Sulawesi, vic. Mamasa, 2°57'S, 119°24'E, 2.000 m, 17-18.X 1995, leg. GALA (CAHU); (66) ♂, Indonesia, Sulawesi Tenggara, Sopura Camp, 3°49'S, 121°40'E, nr Gng Watowila NE of Kolaka, 1.600 m, J. P. Duffels (CAHU). (67-69) *O. vinacea* Holloway, 1990: (67) holotype ♂, Sumatra N, Tobe lake SE, vic. Tele , 27.VII.1984, Dr. Diehl leg. (BMNH); (68) paratype ♂, Sumatra N, Tobe lake SW, Tele, 1150 m, 27.VII.1984, Dr. Diehl leg. (ZSM); (69) ♂, NO Sumatra, Sidikalung, 800 m, 15.VI.1980, leg. E. Diehl (ZSM). (70-74) *O. schalicteta* Tams, 1935: (70) ♂, NO Sumatra, Gunung Etabru, 19.XII. 1982, lg. Dr. E. Diehl, coll. Dr. R. Brechlin (ZSM); (71) holotype ♂, Barisan range, Western slopes, SW Sumatra, 2500 ft., 10.XI. 1921, C., F., & J. Pratt (BMNH); (72) paratype ♂, Lebong Tandai, Benkoelen, Sumatra, VI.1923, C. J. Brooks (BMNH); (73) ♂, Sumatra, Nias-ins., Lawalo, IX.1979, leg. Dr. Diehl (ZSM); (74) ♂, Malaysia, Cameron Highlands, SW Ringlet (Brücke), 4°21'36"N, 101°20'52"E, 12.-21.VII.2001, leg. Ströhle (ZSM). (75-78) *O. **germari*** **spec. nov.**, (75) holotype, ♂ Borneo, Selatan, 30 km E von Kandangan, Regenwald, 800 m, 15 km NE Loksado, 2°52'S, 115°38'E, XI 1997, leg. Jakl (MWM); (76) paratype ♂, Malaysia, Borneo, Sabah, Trus Madi, 1200 m, 1--12.IV.2005, leg. Martini (MWM); (77) paratype ♂, N Sumatra, Karo highland, 900 m, III.1978, T. Hasegawa leg. (NSMT); (78) ♂, Sumatra, Prapat, from Holloway & Bender (1990: plate 7: 10). (79, 80) *O. pinratanai* Zolotuhin, 2005: (79) holotype ♂, Thailand, Kanchanaburi, Sri Sawat, 12.X.1998 (CBAP); (80) paratype ♂, Thailand, Kanchanaburi, Sri Sawat, Dong Lek 25.V.2003 (CBAP). (81, 82) *O. ophioglossa* Tams, 1935: (81) holotype ♂, slopes of Mt. Korintji, SW Sumatra, 7300 ft, 8.IX.1921, C., F., & J. Pratt (BMNH); (82) paratype ♂, slopes of Mt. Korintji, SW Sumatra, 7300 ft, 8.IX 1921, C., F., & J. Pratt (ZMHU). (83) *O. pruni pruni* (Linnaeus, 1758), mature caterpillar, Europe. (84-87) *O. bheroba bheroba* Moore, 1858-1859: (84) L3 caterpillar, N. Vietnam (photo: S. Pugaev); (85-86)L4 caterpillar, N. Vietnam (photo: S. Pugaev); (87) mature caterpillar, N. Vietnam (photo: S. Pugaev).