The genus *Odontoptilum* as currently understood (Evans 1949, Maruyama 1991, Eliot 1992, Bridges 1994) contains three species: *O. angulata* (Felder, 1862), from Sri Lanka and NW Himalayas to the Philippines, Sulawesi and the Lesser Sunda Islands, *O. pygela* (Hewitson, 1868) from Burma and Thailand to Java and Borneo, and just penetrating the Philippines, and *O. leptogramma* (Hewitson, 1868), endemic to the Philippines. The species are easy to separate on the basis of external characters. In the male genitalia *O. leptogramma* stands apart because of the elaborate valvae, while the valvae of *O. pygela* and *O. angulata* are of a simple and much more slender build. While *O. leptogramma* and *O. pygela* exhibit minor variation, *O. angulata* (as conceived by Evans 1949) is highly variable, seasonally as well as geographically, and in wing markings as well as in genitalia. This variation, displayed by a richer material than Evans (1949) had at his disposal, prompted re-examination of the types and, subsequently, a revision of the concept of *O. angulata*. Further, examination of the genitalia and secondary sexual characters led to the conclusion that *O. leptogramma* was misplaced in *Odontoptilum* and that its isolated taxonomic position is best reflected by placement in a new genus.

All taxa are briefly described below to facilitate identification, and relevant characters are illustrated. For synonymy other than proposed here, see Evans (1949). All holotypes relating to species-group names in *Odontoptilum* are in the Natural History Museum, London (BMNH), except one that is in Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt-am-Main (SMF), and the types of the newly described taxa, which are in the National Museum of Natural History ‘Naturalis’ (formerly Rijksmuseum van Natuurlijke Historie), Leiden (RMNH), and in the collection of C.G. Treadaway (CGT, donated to SMF).

**Odontoptilum in relation to other genera**

The Oriental genus *Odontoptilum* de Nicéville, 1890, as currently conceived, belongs to a group of Afro-Oriental genera described as the *Tagiades* group by Evans (1949), a grouping that, on the basis of molecular data, may well be monophyletic (A. Warren pers. comm.). Within the *Tagiades* group,
Odontoptilum shares three characters with the genera Ctenoptilum de Nicéville, 1890 (Oriental), Caprona Wallengren, 1857 (Afro-Oriental; the congenerity of the Oriental and African species needs re-examination), Netrobalane Mabille, 1904, Leucochitonea Wallengren, 1857, and Abantis Hopffer, 1855 (the latter three genera restricted to the Afrotropics). Evans (1949) coined the name Caprona subgroup for these genera. The characters which more or less separate them from the other genera of the Tagiades group are: antennal apiculus blunt, subcostal vein of forewing ending well before end of cell, and the male genitalia asymmetrical to some extent, in the valvae as well as in the uncus and gnathos, with the aedeagus generally emerging from the right. Asymmetrical male genitalia are not unique among Hesperiidae (see for example, Burns 1964), but they are among the Tagiades group (with exception of the genus Abraximorpha Elwes & Edwards, 1897, which in other characters appears to be more closely related to other genera). Whether these characters point to a closer relationship between, and monophyly of, the six genera remains to be studied. There are other remarkable characters that seem to point in the same direction. One character is the irregular outline of the wings (figs. 1-3) (but regular in Leucochitonea and Abantis), not unique in the Tagiades group, but rarely found to this extent. Caprona, Leucochitonea and Odontoptilum share a peculiar and unique sexual character in the male, a dense hair tuft on the fore coxae. Ctenoptilum has a recumbent hair pencil on the hind tibiae in the male, a character widespread among Pyrginae, but absent in many genera and, although of diagnostic value, apparently of little help in establishing relationships.

In this study a novel secondary sexual character is described and figured, female genitalia of the species are described and figured for the first time, the position of O. leptogramma (Hewitson) is reconsidered, O. pygela (Hewitson) is briefly described (and a new subspecies is proposed), and a taxonomic revision of the O. angulata (Felder) complex is presented, including the description of two new taxa.

Delimitation of Odontoptilum

The type species of Odontoptilum is O. angulata (Felder, 1862). The genus is currently conceived as containing three species, O. angulata, O. pygela, and O. leptogramma. According to Evans (1949), they share the following characters that separate them from the genus Caprona: (1) hair pencil on fore coxae of male short (long in Caprona and Leucochitonea); (2) tegulae of male more or less prolonged; (3) tornal cilia of hindwing elongate. However, the tegulae of the male are also longer than in the female in Caprona agama Moore, 1857 (Oriental region) and in C. pillaana Wallengren, 1857 (Afrotropical region), and possibly in more species which have not been checked. Elongate tornal cilia on the hindwing can also be found, within the Caprona subgroup, in the Afrotropical genera Netrobalane and Abantis (at least in some of the species), and also in other genera of the Tagiades group like the Oriental genera Darpa Moore, 1865, and Seseria Matsumura, 1920. Hence the morphological basis for considering the three species congeneric (i.e. more closely related to each other than to any other species) is very weak indeed, viz. the length of the hair pencil on the fore coxae of the male. However, I failed to find the hair pencil on the fore coxae of O. leptogramma. Moreover, while the male genitalia of O. angulata and O. pygela are of similar build, those of O. leptogramma are abundantly

Figs. 1-3. Venation and outline of hindwing of Semperium leptogramma (1), Odontoptilum pygela (2), and O. helias (3). The other Odontoptilum species have an outline similar to O. helias.
different (valvae complicated, uncus with large dorsal horn, no gnathos), negating the reason for considering \textit{O. leptogramma} more closely related to \textit{O. angulata} and \textit{O. pygela} than to any other species. In addition, \textit{O. leptogramma} proved to have a unique secondary sexual character. The isolated taxonomic position of \textit{O. leptogramma} in the \textit{Caprona} subgroup is best reflected by placing the species in a genus of its own with, as yet, unclear relationships. Therefore, a new genus is described below.

### Secondary sexual characters in \textit{Odontoptilum}

In Hesperiidae, secondary sexual characters (sscs) are characters, other than genital characters, that presumably play a role in sexual behaviour by scent emission. They are widespread in Hesperiidae, particularly in the male, but scent distributing organs in females have been described as well (Burns 1964, de Jong 1975). A common feature among females in the \textit{Tagiades} group, and found in all species of \textit{Odontoptilum} and the new genus \textit{Semperium}, is the presence of thickly packed, wavy, hairlike scales at the tip of the abdomen, known as ‘anal wool’. It is reminiscent of a ssc but as described by Igarashi & Fukuda (1997) for several \textit{Tagiades} species and by Bascombe et al. (1999) for \textit{O. angulata}, its function is not in sexual behaviour: the hairs are used to conceal the laid eggs. In males, sscs are most frequently found on the wings, but they can be found on other body parts as well, particularly on the legs. In \textit{Odontoptilum} two peculiar male sscs have been described. One is a black or brown tuft of hair-like scales originating from the fore coxae and lying against the thorax. It also occurs in \textit{Caprona} and \textit{Leucochitonea}, where it is much longer and more conspicuous, but it is absent in the new genus \textit{Semperium}. The other male ssc in \textit{Odontoptilum} is a prolongation of the tegulae (misnamed scapula by Evans 1949) into a thick hair pencil (figs. 4, 5) fitting into a groove on the upper side of the hindwing along the basal third of space 1c (figs. 5, 6). This character is only found in some subspecies of \textit{O. angulata} (Felder) as conceived by Evans (1949). A third ssc, unique among Hesperiidae, is found only in the new genus \textit{Semperium}. It consists of an apparently erectile metatibial hair pencil (found in many Pyrginae) associated with a groove on the underside of the hindwing (fig. 7), as described below. Usually, when a metatibial hair tuft is associated with another structure, it is with a metathoracic pouch. The only exception known so far is in the genus \textit{Celaenorhinus}, where the metatibial hair tuft is associated with an abdominal pouch opening through a slit along the side of the 2nd abdominal sternite (de Jong 1982).

### \textit{Semperium} gen. n.

Type species (and sole species included): \textit{Pterygopidea leptogramma} Hewitson, 1868.

**Description.** – See \textit{S. leptogramma}. See also above, under Delimitation of \textit{Odontoptilum}.

**Etymology.** – The genus is named after Georg Semper (1837-1909), the Nestor of Philippine lepidopterology.

### \textit{Semperium leptogramma} (Hewitson)

\textit{Pterygopidea leptogramma} Hewitson, 1868: 53. Holotype \(\delta\), in BMNH; type locality: Philippines.

**Material examined.** – Holotype \(\delta\), Philippines (BMNH); 41 \(\varphi\), Cebu, Leyte, Luzon, Mindanao, Mindoro, Samar, Siibuyan (BMNH, CGT, RMNH).

**External characters** (figs. 37, 40). – Length of forewing, male 18.9-20.0 mm, female 20.2-20.6 mm. Upperside forewing with a fuzzy whitish-violet line from mid-dorsum to mid-costa, a narrow, broken white line crossing space 1bc and space 2 (apparently the median spots in these spaces) and following the discoidal veins, a fuzzy violet zigzag line between the latter line and the outer margin, a short bluish line near the base from dorsum to cubital vein and two bluish lines in basal part from radial vein to costa; in basal half veins outlined in violet-white; some violet scaling in spaces 1bc and 2 between the two cross-lines; tiny hyaline spots in spaces 3-9. Underside forewing, brown with strongly reduced markings. Upperside hindwing with central third white. Underside hindwing white colour even more extensive. Outline of hindwing slightly wavy, very shallowly indented between the veins, strongest between veins 4 and 6, and 7 and 8.

**Secondary sexual characters.** – On the hindtibia close to its junction with the femur, the male with a thin erectile hair pencil associated with a groove on the underside of the hindwing in space 1b along the thickened basal half of vein 1a, flanked by shining white narrow scales (fig. 7).

**Male genitalia** (figs. 8, 14-16) – Tegumen and uncus askew to the left. Uncus slightly flattened dorso-ventrally, with weakly serrated sides. Large middorsal horn on uncus, curving to the right. Gnathos absent. Valvae strongly asymmetrical, large, curved, more or less encapsulating the rest of the genitalia. Right valva with more or less regular ceculus, distal edge slightly serrat; costa consisting of a regular part ending roundedly over ceculus and a large, spined, proximal process curving over the regular part and ending acutely; sclerotization of costa extending from proximal part to mid-valva. Aedeagus emerging
almost centrally, but, relative to the uncus, from the right.

Female genitalia (fig. 28). – Weakly asymmetrical. More simply built than in Odontoptilum. Lateral parts of abdominal segment 7 well sclerotized and with large elongate, not elevated spiracles; tergal part reduced; sternal part a regular, squarish anterior plate with rounded corners imperceptibly passing into sternum 8; latter forming a regular, squarish posterior plate, smaller than the anterior plate, densely spinulose on the inner side; tergum 8 a strongly domed structure bearing the anal wool and, in ventral view, rising behind the papillae anales. Ductus and corpus bursae simple, no ornamentation, together relatively short, less than twice as long as distance from proximal edge of sternum 7 to tip of abdomen.

Distribution (fig. 33). – The species is confined to the Philippines. It has been found on the following islands: Cebu, Leyte, Luzon, Mindanao, Mindoro, Samar, Sibuyan.

Variation. – Very slight and not geographical.

Life history. – No information available.

Odontoptilum de Nicéville

Odontoptilum de Nicéville, 1890: 217. Type species by original designation: Achlyodes sura Moore, [1866], which is currently identified as a junior synonym of Pterygospidea angulata Felder, 1862.

External characters. – Although the species can easily be separated from other Oriental Hesperiidae by the outline of the hindwing (figs. 2, 3), there are actually two types of wing shape (pygela and the angulata complex) and not a single one defining the genus. The same holds for characters like colour and wing markings: good diagnostic characters at the species level, but not at the genus level.

Secondary sexual characters. – The only character found in all species, but in the male only, is the short hair pencil on the fore coxae (often difficult to see as it is covered by the legs and regular scales).

Male genitalia. – Highly asymmetrical. In dorsal view uncus far to the left and aedeagus to the right, emerging from under a large folded gnathos. Valvae asymmetrical, simply built, elongate, generally tapering towards a cucullus that is extended, particularly in the right valva, and sometimes shaped like a swan’s neck.

Female genitalia. – Irregular and asymmetrical. Abdominal segment 7 modified to form a more or less sclerotized anterior lamella (i.e. anterior to the ostium) which is more or less folded, and passing imperceptibly into the folds of the 8th sternum; lateral parts of segment 7 well sclerotized and with conspicuous, elevated spiracles; tergal part of segment 7 reduced to a narrow strip. Sternum 8 with very irregular, sclerotized folds, densely spinulose on the inner side; tergum 8 well developed, more or less domed, bearing the anal wool. Bursa simple, elongate, without ornamentation; ductus and corpus bursae together 2.5 to 3.5 times as long as distance from proximal edge of sternum 7 to tip of abdomen.

Distribution. – Throughout the Oriental region.

Odontoptilum pygela (Hewitson)

Pterygospidea pygela Hewitson, 1868: 53. Holotype ♀, in bmnh; type locality: Malacca.

External characters (figs. 38-39, 41-44). – Length of forewing, male 16.8-19.3 mm, female 18.7-
21.1 mm. Upperside forewing with a white, slightly irregular line from mid-vein 1 through cell, sometimes extending to mid-costa, and another slightly irregular white line representing the median spots in spaces 1bc and 2 (the latter sometimes hyaline), often continued into a narrow hyaline median spot in space 3, narrowly white at wing base from costa to dorsum, narrow hyaline spots in spaces 8 and 9, sometimes a very tiny one in space 6; veins concolourous with the dark brown, little variegated ground colour; slight whitish violet superscaling along dorsum and sometimes extending a bit onto wing. Underside forewing rather similar to upperside, markings less pronounced. Upperside hindwing narrowly white at extreme base, a straight pronounced line from mid-vein1b to shortly before mid-vein 8, and a very irregular, narrow white line distal to the straight line and sharply curving outside along vein 4 to halfway space 4-5 a broad white band from just above tornus to vein 4 and continued narrowly to vein 6, flanked by a grey area up to the irregular white line and by a grey band towards outer margin, but narrowly white again along outer margin. Underside hindwing largely white from dorsum up to radius/vein6. Outline of hindwing (fig. 2) strongly indented between veins 4 and 7 and less strongly so between veins 7 and 8, resulting in a pronounced tooth at the end of vein 7 and an even more pronounced one at the end of vein 4; distance from wing base to end of vein 4 considerably greater than from wing base to end of vein 7; between tornus and vein 4 slightly concave.

Secondary sexual characters. – No other character than the hair tuft on the fore coxae.

Male genitalia (figs. 9, 17-18). – Uncus long, slender, flattened laterally, strongly curving from the left side to the right. Right valva elongate triangular with strongly extended, slightly upcurving cucullus ending with a serrated tip. Left valva more trapeziform, cucullus straight, pointing distally, serrated in distal part, shorter than cucullus of right valva.

Female genitalia (fig. 29). – Ostium surrounded by very irregular folds that defy a clear description and passing imperceptibly into the each other, and from sternum 7 into sternum 8 but in ventral view, no lamella directly in front of and behind the ostium. Ductus and corpus bursae together about three times as long as distance from proximal edge of sternum 7 to tip of abdomen.

Distribution (fig. 32). – Sundaland, north to S Burma and Thailand; it penetrates the Philippines in Palawan, Sanga Sanga and Tawitawi.

Variation. – Evans (1949) recognized two subspecies; here a third is described.

Life history. – No information available.
Odontoptilum pygela pygela (Hewitson)

Material examined. — Holotype ♂, Malacca (BMNH); 167 ♂, 6 ♀, Burma, Thailand, Malay Peninsula, Sumatra, Nias, Banka, Billiton, Borneo, Palawan (BMNH, CGT, RMNH).

External characters (figs. 38, 41). — Upperside forewing spot in space 3 usually present, but often tiny. Upperside hindwing, space between the central white lines in cell and spaces 4-5 brown. Underside hindwing, space 6 largely dark with two white lines.

Distribution. — The distribution area of the species, except Java and the Tawitawi group in the Sulu Archipelago.

Odontoptilum pygela javanica Fruhstorfer


Material examined. — Holotype ♂, W Java (BMNH); 42 ♂, 7 ♀, Java (BMNH, RMNH).

External characters (figs. 39, 42). — Upperside
Odontoptilum angulata


External characters (figs. 43-44). – As ssp. pygela, but on underside hindwing white colour more extensive, reaching vein 7, largely obscuring dark spots in space 6; dark basal spot in space 7 smaller than in ssp. pygela.

Distribution. – Only known from the Tawitawi group of islands in the southwestern part of the Sulu Archipelago.

The Odontoptilum angulata complex

External characters. – Upperside forewing without white cross-lines. Outline of hindwing (fig. 3) indented between veins 7 and 8, slightly concave in space 4-5, almost straight from vein 4 to tornus; distance from wing base to end of vein 7 greater than from wing base to end of vein 4.

While O. leptogramma and O. pygela exhibit minor variation, Evans (1949) distinguished five subspecies for O. angulata. Incorrect interpretation of the external characters of the only taxon of which the holotype was not in the BMNH (Evans very rarely studied types that were not in London) led Evans astray. On the basis of overall similarity in wing markings and wing shape, the taxa united by Evans (1949) under O. angulata clearly form a group well separated from the other two species of the genus. This is less apparent in the male genitalia, where there is a general similarity between O. angulata (at least in the nominotypical form) and O. pygela. Within O. angulata sensu Evans, however, two types of ssc and three types of male genitalia occur. Since there is geographic overlap in the types of male genitalia, we can only conclude that they are specifically distinct. Although the arrangement given here is not fully satisfactory, it is the best for now.

The various forms can be arranged in two groups on the basis of presence or absence of a peculiar ssc: tegulae in the male prolonged into a hair pencil (figs. 4, 5) that fits into a groove on the upperside of the hindwing in the basal half of space 1c (figs. 5, 6); the groove is filled with specialized scales. This ssc occurs in all forms flying in Wallacea (Sulawesi and the Philippines), and is absent in the forms occurring in continental Asia and Sundaland, and the Lesser Sunda Islands as far as Flores.

Odontoptilum angulata (Felder)

Pterygospidea angulata Felder, 1862: 488. Holotype ♀ in BMNH; type locality: Hong Kong.

External characters (figs. 45, 48). – Length of forewing, male 16.9-20.8 mm, female 20.2-22.3 mm. Upperside forewing strongly variegated with paler and darker brown colours, hyaline spots in spaces 2, 3 (may be absent), 7 and 8, rarely a tiny dot in space 6. Underside forewing paler than upperside. Upperside hindwing pale brown, darker brown in basal third followed by an almost straight pale line from vein 1b (well beyond its middle) to costa; a very irregular thin and inconspicuous pale line more distally; dark brown at apex; pale brown to white line from just above tornus to near end of vein 4; veins 1b to 4 paler outlined from irregular line to termen; pale brown to white line along termen; fringes pale brown to white. Underside hindwing mainly white, darkened to various degrees mainly at apex and along termen from tornus to vein 4, conspicuous round black spot at base of space 7.

Secondary sexual characters. – No other character than the hair tuft on the fore coxae.

Male genitalia. – Highly asymmetrical; in dorsal view uncus curving from the left side to about the middorsal line, expanding to a rounded head. Right
and left valvae subequal in length, but unequal in shape. Right valva subtriangular, cucullus elongate, more or less curving up, spined distally. Left valva, see subspecies.

Female genitalia. – See under subspecies.

Distribution (fig. 31). – Continental Asia, from Sri Lanka, India and NW Himalayas to Hong Kong and W Malaysia, and through Sundaland to the Lesser Sunda Islands as far east as Flores.

Variation. – In addition to seasonal variation (see Evans 1949) two subspecies can be distinguished.

Life history. – See under the nominotypical form.

Identification. – The only other species of the genus with which O. angulata flies is O. pygela. The differences in wing pattern and outline of hindwing are so pronounced that confusion is highly unlikely.

Odontoptilum angulata angulata (Felder)

Material examined. – 196♂, 54♀, Sri Lanka, India, Nepal, Bhutan, Sikkim, Burma, Thailand, Indo-China, Hainan, Hong Kong, W Malaysia, Sumatra, Borneo, Java (BMNH, RMNH).

External characters. – Length of forewing, male 16.9-20.8 mm, female 20.2-22.3 mm. Upperside strongly variegated with various shades of brown; outer third of forewing warm brown; spot in space 2 well-developed, more or less crescentic, spot in space 3 small or absent, spots in spaces 7 and 8 well-developed. Upperside hindwing paler or darker brown along termen, not whitened, fringes pale brown.

Male genitalia (figs. 10, 19-20). – Right valva dorsally humped just beyond middle, cucullus long, slender, curving up, and down again, as a swan’s neck, spined distally. Left valva subrectangular, costa sharply bending down to triangular cucullus with a ventral line curving up to the almost horizontal dorsal line, and then cucullus extending into a strongly serrated, pointed and down-curving projection.

Female genitalia (fig. 30). – Asymmetrical; ostium displaced to the left. Abdominal segment 7 laterally sclerotized with prominent, raised spiracles, sternally lightly sclerotized to membraneous; laterally the sclerotization passing imperceptibly into the folded and highly irregular posterior lamella (or rather plate) of the 8th segment, which is densely spinulose along the edge and on the innnerside; central part of posterior plate slantingly squarish, distal edge slightly concave, not indented, about half the width of sternum 7. Bursa copulatrix hardly more than a broadening of the ductus bursae; ductus and corpus bursae together about 2.5 times as long as distance from proximal edge of sternum 7 to tip of abdomen.

Distribution. – Continental Asia, from Sri Lanka, India and NW Himalayas to Hong Kong and W Malaysia, and throughout Sundaland to Bali.

Odontoptilum angulata hyperides (Doherty)


Material examined. – Holotype ♂, ‘Sambawa’ (BMNH); 2♂, Lombok, 3♂ Sumbawa (all BMNH).

External characters. – Length of forewing, male 19.0-20.7 mm; Evans (1949) indicates that this form is smaller than ssp. angulata, but this does not agree with my measurements. Wings more rounded. Upperside hyaline spots on forewing reduced; darker, more uniformly coloured, but pale brown along termen of hindwing replaced by white (and fringes white) leaving a conspicuous row of white-edged brown spots.

Male genitalia. – Right valva slender, costa hardly developed, cucullus hardly curving up, but slightly curving to the outside, slightly broadening towards spined tip. Left valva without the dorsal hump of the nominate subspecies, costa imperceptibly passing into the almost straight cucullus, which is club-shaped, flattened, slightly curved and serrate in distal part.

Female genitalia. – No females known.

Distribution. – Lombok, Sumbawa and Flores.

Discussion. – In the original description, Doherty mentioned that ‘Another species, more like A. angulatus, was found in Sumba, but no specimens survived’. This could underline the closer relationship of ssp. hyperides with ssp. angulata than with any other taxon in the complex. It is in line with the absence of the ssc consisting of the hair pencil at the tegulae associated with the groove on the hindwing.

Odontoptilum helias (Felder & Felder)

Pterygospidea helias Felder & Felder, [1867]: 529. Holotype ♂, in BMNH; type locality: Celebes.

External characters (figs. 46-47, 49-50). – Upperside hindwing, pale line bordering basal dark area reaching vein 1b at or just before the middle of the vein.

Secondary sexual characters. – In addition to the hair tuft on the fore coxae there are specialized grey
scales at the bottom of a groove on the upperside hindwing.

Male genitalia (figs. 11, 21-22). – Uncus not as strongly asymmetrical as in *O. angulata*, displaced to the left, curving down, but not sideways, broadening to a rounded apex. Right and left valva very unequal in size and shape. Right valva slender, subtriangular, costa rather flat, cucullus narrowly extending to a down-curving, serrate, blunt apex. Left valva about ⅔ length of right valva, subrectangular, costa bulging dorsally in proximal half, cucullus in continuation of costa, straight, with strongly serrate, blunt or squarish apex.

Female genitalia (fig. 27). – Asymmetrical; ostium displaced to the left. Similar to *O. angulata*; sternum 7 more strongly sclerotized, central part of posterior plate larger, squarish, about as wide as sternum 7, distally indented, lateral folds of plate smaller than in *O. angulata*. Ductus and corpus bursae together about 4 times as long as distance from proximal edge of sternum 7 to tip of abdomen

Distribution (fig. 34). – Sulawesi and Philippines.

Variation. – Two subspecies can be distinguished, differing in size, wing markings and genitalia.
**Odontoptilum helias helias** (Felder & Felder)

Material examined. − Holotype ♂, ’Celebes’ (BMNH), 42♂, 2♀, Sulawesi (N, C and S) (BMNH, RMNH).

External characters (figs. 46, 49). − Length of forewing, male 21.4-23.9 mm, female 24.9 mm. Upperside strongly variegated, dark areas on forewing contrasting with the paler brown colours; hyaline spots in spaces 2, 7 and 8 well developed, in space 3 small but usually present, sometimes one or two tiny hyaline spots in cell. Upperside hindwing strongly whitened along termen, grey band between white terminal line and white band from tornus to end of vein 4 more or less divided into spots and becoming obsolete from tornus to vein 4. In male, central part of hindwing with pale violet superscaling.

Male genitalia (fig. 21). − Cucullus of left valva relatively short, about twice as long as high.

Female genitalia. − See species description.

Distribution. − Sulawesi.

Identification. − The largest form in the genus, it cannot be confused with other *Odontoptilum* species since it is the only species in Sulawesi.

**Odontoptilum helias helisa** Semper

*Odontoptilum helias helisa* Semper, 1892: 311. Holotype ♂, in SMF; type locality: Mindanao.


*Odontoptilum angulata sinka* Evans, 1949: 159. Holotype ♂, in BMNH; type locality: Los Baños [Luzon].

Material examined. − Lectotype helisa, ♂, Luzon (SMF), holotype sinka, ♂, Los Baños (BMNH), holotype subangulata, ♀, Baslan (BMNH); 1 ♂, Baslan (BMNH); 5♂, Cebu (3♂ CGT, 2♂ RMNH); 1♀, Dumaran (CGT); 7♂ 1♀, Luzon (5♂ CGT, 2♂ 1♀ RMNH); 1♂, Marinduque (CGT); 1♂ 1♀, Mindanao (CGT); 7♂, Mindoro (CGT).

External characters (figs. 47, 50). − Considerably smaller than ssp. helias, length of forewing, male 16.2-20.4 mm, female 21.2 mm. Upperside darker, less strongly variegated, no pale blue or violet superscaling, white colour along termen on upperside hindwing less extensive, a more or less continuous grey band between white terminal line and the white band from tornus to end of vein 4. Hyaline spots on forewing: in spaces 2, 7 and 8 always present, usually also in space 3, and one or two tiny spots in cell.

Male genitalia. − Cucullus of left valva longer, up to 4 times as long as high, apex more rounded; ventral edge curving upwards more abruptly.

Female genitalia. − See species description. The females listed above have been assigned to the present taxon by similarity to the males in external characters. Since we are not yet sure about the correct identity of the females listed under *O. corria* and *O. abbreviata*, we are not yet sure to what extent these taxa differ in female genitalia.


Identification. − Flies with *O. corria* in Luzon and Negros, and with *O. abbreviata* in Basilan and Mindanao. Externally it can be distinguished from both by the absence of pale violet superscaling on the upperside, the usual presence of a tiny hyaline spot in the forewing of the male, and by the more continuous and greyer band along termen on upperside hindwing; in the other species the grey band tends to be subdivided into spots, strongest in *O. abbreviata* where it is, moreover, narrower than in the other two species.

Figs. 31-32. Distribution areas of *Odontoptilum angulata* (31) and *O. pygela* (32).
Discussion. – In the original description Semper said he had 18 specimens from Luzon, Samar, Bohol and Mindanao. He did not specify a holotype. Evans (1949), without having seen a specimen from Semper’s series, selected a male from Mindanao as holotype, and he described the subspecies as: ‘In helisa the entire uph, except for the base and apex, is covered with pale blue scaling, which extends, more sparsely, to centre of upf.’ However, Semper did not mention the pale blue scaling at all. Moreover, in smf a single specimen of ssp. helisa is kept, with a type label and originating from Luzon. It is in good condition and does not have the pale blue scaling. We do not know what happened to the remainder of the series, and whether or not the other specimens also bore type labels. As it is possible that more than one species was included in Semper’s series, the specimen from Luzon is designated lectotype here, even though the chance of any further specimens of the original series turning up is extremely remote.

As a consequence of Evans’ incorrect concept of ssp. helisa, he described ssp. sinka, which on examination proved to be indistinguishable from the true ssp. helisa.

**Odontoptilum corria** sp. n.

Material examined. – Holotype δ, Philippines, Negros occ., Murcia, Canlandog, 800-900 m, 26.v.1995, leg. A. Buenafa (rmnh). Paratypes: 20 δ, all Philippines, as follows: Luzon, 11 δ (10 cgt, 1 rmnh); Panay, 1 δ (cgt); Negros, 7 δ (6 cgt, 1 rmnh); Polillo, 1 δ (rmnh).

Further material. – Negros, 1 ♀ (cgt); Panay, 1 ♀ (rmnh); excluded from the type series. The correct assignment to this species must remain uncertain as long as also the correct assignment of the only available possible female of *O. abbreviata* is uncertain. More material is needed to make sure that possible differences found in the genitalia are specific and not due to individual variation.

External characters (figs. 51, 54). – Length of forewing, male 19.7-21.5 mm. Upperside forewing rather uniformly dark brown with, at least in the male (no fresh females available), centrally a broad band of pale violet superscaling from dorsum to the apical spots; hyaline spots in spaces 2, 7 and 8, and usually also in space 3, present, no spots in cell, except in one female.
Underside forewing uniformly brown with faint pale violet superscaling. Upperside hindwing more variegated than forewing, darker near base and apex, rest of wing with pale violet superscaling, along termen a grey band, more or less divided into spots by pale veins, in spaces 2 and 3 these spots about as high as wide; pale line bordering dark basal area reaching vein 1b before the middle of the vein (i.e., slightly closer to the wing base). Underside hindwing largely white, brown along costa and at apex, in space 7, in addition to the dark apex a dark brown rounded spot near the base and a squarish brown spot beyond the middle, to the dark apex a dark brown rounded spot near the wing base). Underside hindwing largely white, with pale violet superscaling, along termen a dark spot in space 1c and vague greyish spots in other spaces.

Secondary sexual characters. – In addition to the hair tuft on the fore coxae there is a groove on the upperside of the hindwing in space 1c with specialized black scales at the bottom.

Male genitalia (figs. 12, 23, 24). – Strongly asymmetrical in dorsal view, uncus displaced to the left, slightly curving back to about the middorsal line, slender, with slightly expanded rounded tip and with a flattened lobe before the tip. Right and left valva subequal in length, but different in shape. Right valva reminiscent of O. angulata, but free part of cucullus longer than rest of valva, less strongly curved at apex; costa without bump, but with slight curvature. Left valva, cucullus in continuation of costa; under the elegant down-curving free part of the cucullus (with strongly toothed apex) the valva bulging out prominently.

Female genitalia. – See above, under Further material.

Distribution (fig. 35). – Philippines: Luzon, Negros (?), Panay, Polillo.

Etymology. – The name refers to the shortened material. Apart from the male genitalia O. corria is similar to O. abbreviata, but the hyaline spots on the forewing are generally slightly better developed and the terminal band of grey spots on the upperside of the hindwing is a bit broader; the two species are widely separated geographically.

Odontoptilum abbreviata sp. n.

Material examined. – Holotype δ, Philippines, Mindanao, South Cotabato Prov., Salakot T’Boli, 2.vi.1985, leg. J. de los Reyes (rmnh). Paratypes: 7 δ, all Philippines, as follows: 2 δ, Mindanao, South Cotabato Prov., Koronal, leg. R. Müller (1 rmnh, 1 cgt); 1 δ, idem but Parker Mts (rmnh); 1 δ, Mindanao, Agusan del Norte, 25.xi.1980 (rmnh); 1 δ, Mindanao, Mt Malindang, 10.vi.1987 (cgt); 1 δ, Mindanao, Mt Malindang, 10.vi.1987 (cgt); 1 δ, Basilan, Malcong, 20.xi.1932 (rmnh); 1 δ, Basilan (bmnh); 1 δ, ’Felder, 460’ (rmnh).

Further material. – Mindanao, 1 ♀ (rmnh): excluded from the type series for reasons mentioned under O. corria.

External characters (figs. 52-53). – Length of forewing, male 19.2-21.2 mm, female unknown. Upperside forewing rather similar to O. corria, but hyaline spots smaller, spot in space 2 a narrow line, in space 3 present in only 1 specimen; pale violet superscaling less pronounced. Underside forewing almost plain brown. Upperside hindwing rather strong pale violet superscaling, grey terminal band divided into spots wider than high; pale line bordering dark basal area reaching vein 1b before the middle of the vein (i.e., slightly closer to the wing base). Underside hindwing rather like O. corria.

Secondary sexual characters. – In addition to the hair tuft on the fore coxae there is a groove on the upperside hindwing in space 1c with specialized black scales at the bottom.

Male genitalia (figs. 13, 25-26). – Strongly asymmetrical in dorsal view, tegumen and uncus displaced to the left, uncus broad, curving to the right side, ending in a broadened apex. Right and left valvae unequal in shape and size. Right valva longer than left valva, elongate-triangular, distally narrowing to a rather straight, strongly toothed, acutely ending cucullus; costa bulging upwards at ⅓ from base. Left valva, proximal half subrectangular, but then costa strongly bending down and dorsal line smoothly continued into the relatively short cucullus (narrow part about 2.5 times as long as high) with large teeth on the ventral, distal and inner sides.

Female genitalia. – See above, under Further material.

Distribution (fig. 36). – Philippines: Basilan, Mindanao.

Etymology. – The name refers to the shortened material.
valvae compared to *O. angulata*.

Identification. – For differences from *O. helias helisa*, with which it overlaps, see the latter species. For differences from *O. corria*, see there.

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References


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