Bull. Annls Soc. r. belge Ent. 133 (1997): *457-467*

The Orgilinae (Hymenoptera: Braconidae) in the Ethiopian and Malagasy aera*

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Abstract

Orgilonia antefurcale *sp. n. and* O. kiliwa *sp. n. are described from the Afrotropical region. We give also some preliminary remarks about the phenology and the ecological data for* O. antefurcale *sp. n. and* O. striata *van Achterberg, 1987. Morphologic details on the male of* Clotildea lucida *Szépligeti, 1914 are illustrated and this species is recorded for the first time in Ivoiry Coast. An identification key for the new species is given.*

Key words: Orgilinae, *Clotidea*, *Orgilonia*, Afrotropical, repartition map, key.

Résumé

Orgilonia antefurcale *sp. n. et* O. kiliwa *sp. n. de la région Afrotropicale sont décrites. Nous donnons également quelques considérations concernant la phénologie et l'écologie de* O. antefurcale *sp. n. et de* O. striata *van Achterberg, 1987. Certains détails morphologiques du mâle de* Clotildea lucida *Szépligeti, 1914 sont figurés pour la première fois, et cette espèce est signalée de Côte d'Ivoire. Une clé d'identification des nouvelles espèces est donnée.*

Introduction

During a survey of Afrotropical Braconidae, several specimens belonging to the genus *Orgilonia* van Achterberg, 1987 (Orgilinae) were discovered in several institutions. Between them we have discovered the presen-

* Received: 1.IX.1997.

ce of two new species: *O. kiliwa* sp. n. and *O. antefurcale* sp. n. The biology of these new species are unknown, but the sparse data available for this tribe suggest that they are endoparasites of larvae of Pyralidae and Tortricidae (Lepidoptera). With this material we can also extend the repartition of *O. striata* VAN ACHTERBERG, 1987 from Sao-Tome to Malagasy.

In the same time, several specimens of *Clotildea lucida* SZÉPLIGETI, 1914 have been discover and its presence is establish for the first time in Ivoiry Coast.

Material and Methods

The specimens examined for this study were borrowed to the following institutions: the "Museum d'Histoires Naturelles de Paris, France" (MHNP), the "Institut Royal des Sciences Naturelles de Belgique" (IRSNB), the "Musée d'Afrique Centrale de Tervuren, Belgique" (MRAC) and the "Nationaal NatuurHistorisch Museum of Leiden, The Netherlands" (RMNH). The institutions where the type-species and paratypes were deposited are indicated elsewhere. Some specimens remained in my own collection (OC) or in the collections of the "Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgique" (FUSAGx).

Scanning electron microscopic slides of uncoated specimens were realized on a PHILIPS XL 30 CP model at 0.4 mBar.

Systematic account

For the identification of the genera of the subfamily Orgilinae, see VAN ACHTERBERG (1987, 1990, 1993, 1994b), and for the terminology used in this paper, see VAN ACHTERBERG (1988, 1994a). Interpretation of DE SAEGER labels were realized following its publication (DE SAEGER, 1956).

Subfamily Orgilinae

Tribe Orgilini ASHMEAD, 1900

Clotildea SZÉPLIGETI, 1914

Clotildea SZÉPLIGETI, 1914: 117; SHENEFELT, 1970: 228; VAN ACHTERBERG, 1988: 51. Type-species: *Clotildea lucida* SZÉPLIGETI, 1914 by monotypy [examined].

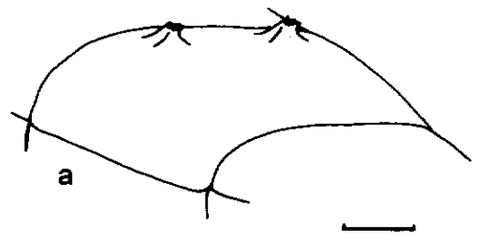
This monotypic species occurs only in the equatorial part of the Afrotropical region (VAN ACHTERBERG, 1987). Its biology is unknown, but other species of the tribe are known as parasites of Lepidoptera (Coleophoridae, Gelechiidae, Oecophoridae, Pyralidae, Psychidae, Gracillaridae and Tortricidae). Althougth their big size this species was rarely collected and it is very rare to find some specimens in collections.

The new occurrences revealed after examination of the MRAC and MHNP collections are respectively: 1 female (MRAC), Lusambo, IX. 1949 (Dr. M. FONTAINE); 1 male (MRAC), Mayidi, 1947 (Rév. P. VAN EYEN); 3 females (MHNP), Ivoiry Coast, San Renito, 1885 (Guisal) (1), environ de [around of] Man, 1910 (A. CHEVALIER) (1) and Lamto, Forêt

galerie, près [near] campement Indépendance, 18.VIII.1970 (D. LACHAISE) (1).

With these specimens we can observe that the male and females have 76 and 80 antennal segments respectively.

Remark: Previously, VAN ACHTERBERG (1987) described the sculptures of the third tergite as X-shaped. The comparison between the type-species and the other females specimens show us that the sculpture of the third tergite (partially broken medio-laterally on the type-species) is more similar to the figure 1c. This sculpture shown a variation depending on the sex (Fig. 1b-c). Moreover, the examination of the male specimen housed in MRAC collections revealed the presence of two dorsal protuberances (Fig. 1a) on the sixth tergite, previously undescribed.



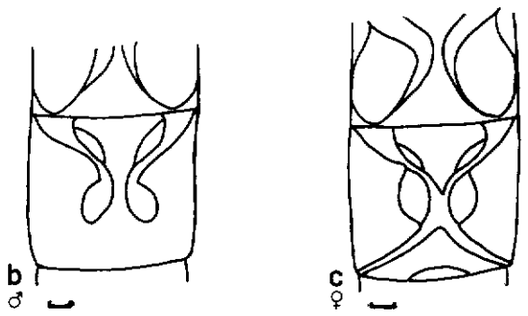


Fig. 1. Morphological details of the metasoma of *Clotildea lucida* SZPL.: a. detail of the sixth tergite; b. and c. sculptures on the second and third tergites of the male and the female respectively. Scale line = 500 μm.

Tribe Mimagathidini ENDERLEIN

Mimagathidinae ENDERLEIN, 1905: 450.
Stantoninae VIERECK, 1919: 198.
Mimagathidini VAN ACHTERBERG, 1987: 13.

Orgilonia VAN ACHTERBERG, 1987

Orgilonia VAN ACHTERBERG, 1987: 13. Type-species: *Orgilonia fuscistigma* VAN ACHTERBERG, 1987 [examined].

The two species *Orgilonia antefurcale* sp. n. and *O. kiliwa* sp. n. are very easy to discriminate from the *O. fuscistigma* VAN ACHTERBERG, 1987 by the shape of the clypeus and the hind tibia, for the first, and by the antefurcal position of the cu-a vein on hind wing and the greatest size of the 2+3 tergites than the first tergite, for the second. As they were very similar in respect of the general aspect to *O. fuscistigma*, they were partially illustrated here. The species of this tribe are only known as parasites of Pyralidae and Tortricidae (Lepidoptera) and seems to be restricted to the paleotropical region (VAN ACHTERBERG, 1987). From the ecological data given by DE SAEGER (1956), we can observe that these species are associated to the river and/or marsh vegetations (Poaceae and Cyperaceae) or in the transition border between this biotope and the savana. Sometime we also find *O. kiliwa* sp. n. in the degraded gallery forest with *Irwingia* and *Nauclea* spp.

The new species run in the key of VAN ACHTERBERG (1987) after modifications of the second couplet as follow:

2 Occipital carina completly absent; first metasomal tergite robust, its length about 1.6 times its apical width; vein 1-SC+R of hind wing ends far below level of vein SR of hind wing; prepectal carina weak and not reaching anterior margin of mesopleuron; precoxal sulcus absent or nearly so; head roundly narrowed behind eyes; dorsal carinae of first tergite absent; trochantellus, apex of femur and tibia (except base) of hind leg yellowish-brown (Afrotropical region) 4

- As in the VAN ACHTERBERG key (1987) 3

4 Clypeus clearly convex in lateral view; cu-a sligthly postfurcal; length of the first tergite greatest than the length of the 2+3 tergites; hind tibia curved interiorly in dorsal view. (R. of Congo) . . . . . ***Orgilonia kiliwa*** sp. n.

- Face and clypeus flatened in lateral view; cu-a interstitial to antefurcal; first tergite subequal or shorter than the length 2+3 tergites; hind tibia straight in dorsal view. 5

5 Vein cu-a of fore wings antefurcal; first tergite shorter to the length of the 2+3 tergites; fifth tergite with a sharp lateral crease; propodeum rather flat, granulate-coriaceous (R. of Congo, Ivoiry Coast, Malagasy) . . . . . ***O. antefurcale*** sp. n.

- Vein cu-a of fore wings interstitial; propodeum rather convex in lateral view; first tergite subequal to the length of the 2+3 tergites; fifth tergite without sharp lateral crease (Sierra Leone) . . . . . ***O. fuscistigma*** VAN ACHTERBERG, 1987

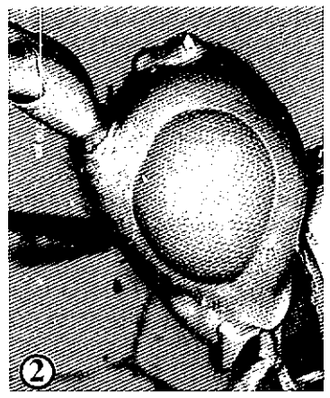
Description of the new species

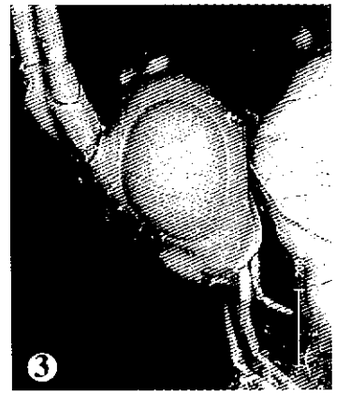
Orgilonia antefurcale sp. n.
(Figs 2, 6 - 8)

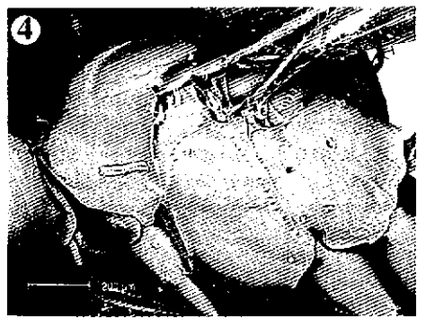
Etymology. From the position of the cu-a vein.

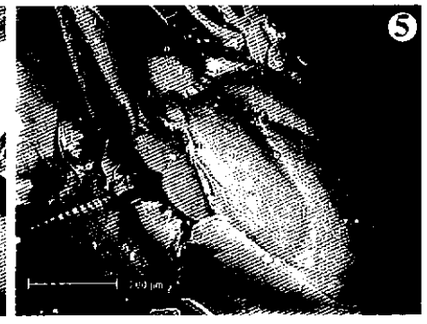
Material. Holotype, female (MRAC), Congo Belge, Miss. H. de Saeger PNG, II/fd/15, 22.IX.1951 (H. DE SAEGER). Paratypes: 1 male (IRSNB), Congo Belge, Musosa, X.1939 (H.-J. BREDO); 3 females and 1 male (MRAC) from Congo Belge, National Parc of Garamba, Miss. H. de Saeger: II/e, 3.I.1951 (J. VERSCHUREN, 1033) (1female), II/fd/15, 24.V. 1951 (H. DE SAEGER, 1798) (1 female), II/gc/6, 29.VI.1951 (J. VERSCHUREN, 2015) (1 female), I/o/2, 3.X.1950 (G. DEMOULIN, 866) (1 male); 1 female, Zaïre, Elisabethville [=Lubumbashi], XI.1950 (Ch. SEYDEL, à la lumière); 1 male (MHNP), Madagascar, Vatomandry (A. SEYRIG); 1 male (MHNP), Côte d'Ivoire, Odienné, XII.1938 (L. CHOPARD, 1938-39).

The others specimens examined were housed in the MRAC, OC and FUSAGX collections.









Figs 2-5. Electron micrographs of *O. antefurcale* sp. n. and *O. kiliwa* sp. n. Head (2) of *O. antefurcale* sp. n. Head (3), lateral view (4) and dorsal view (5) of mesosoma of *O. kiliwa* sp. n.

Holotype, female, length of body 4.2 mm, of fore wing 2.9 mm.

Head (Fig. 2). Remaining antennal segments 20, length of third segment 1.1 times the fourth, length of third and fourth segments 3.3 and 3.2 times their maximal width; length of maxillar palp 1.1-1.3 times height of head; in dorsal view, length of eyes 2 times temple; temple gradually narrowed posteriorly, shiny, slightly punctate laterally; occipital carina absent; OOL: diameter of ocellus: POL = 4: 1: 3; frons smooth medially; vertex convex, slightly punctate, rounded near stemmaticum; face flat, shiny, punctate; ventral border of the clypeus convex and punctate; length of malar space 1 times basal width of mandible; occipital flange small.

Mesosoma. Similar to *O. fuscistigma* VAN ACHTERBERG, 1987 excepted for the following characters. Length of mesosoma 1.6 times its height; prepectal carina irregular and reaching the anterior border of mesopleuron; lateral lobe of mesoscutum laterally and posteriorly sparsely punctate, shiny coriaceous; mesoscutum flattened at the junction of the notauli; notauli as lines, indistinctly crenulate; scutelar sulcus with several short carina; scutellum shiny coriaceous and sparsely punctate; metapleural flange small.

Wings (Fig. 6). Fore wing: r:3-SR+SR1:2-SR = 3 : 24 : 6; 1-SR+M straight; 3-SR+SR1 bent ; m-cu:1-M = 6 : 12 ; cu-a distinctly antefurcal; excepted basally CU1a coloured and reaching the border of wing; 3-CU1 3 times longer than CU1b.

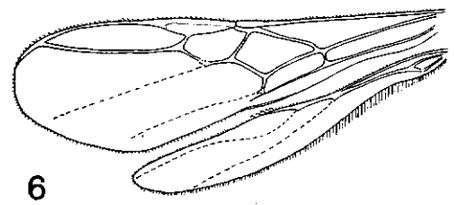
Legs. Similar to *O. fuscistigma* VAN ACHTERBERG, 1987 excepted for the following characters. Length of femur, tibia, basitarsus of hind legs 5, 10, 7.5 times their width, respectively; length of tibial spurs 0.2 and 0.3 times basitarsus; hind basitarsus weakly narrowed apically; tarsal claws medium-sized and setose.

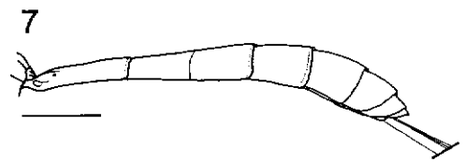
Metasoma (Fig. 7-8). Length of the first tergite 1.8 times its apical width; surface of the first tergite coriaceous-granulate, without dorsal carinae; length of the first tergite shorter than the length of the 2+3 tergites; spiracles more or less protruding; border of the first suture straight; second-sixth tergites shiny coriaceous and with sharp lateral carina; second suture straight and smooth; third-fourth tergites with a small transversal shiny band apically; ovipositor sheath 1.1 times fore wing.

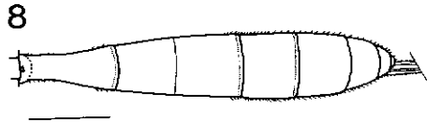
Colour. Brown-coppery; pterostigma, ovipositor yellow; pronotum laterally, parastigma brown-yellow; frons, vertex, mesoscutum, distal part of hind femur, first tergite brown-yellowish; pedicellus brown; last 15 flagellomers, short stripe on outer part of scapus, ovipositor sheath, apical pegs of hind tibia, telotarsi of legs dark-brownish; wing membrane hyaline sligthly infuscate.

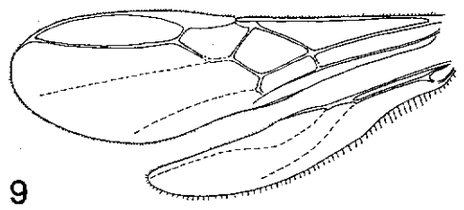
Variations. Paratypes as the holotype. The metasoma may be dark-brown to yellow-brown, the mesoscutum brownish to dark-brown. Number of antennal segments of paratypes and other specimens is between 40-42.

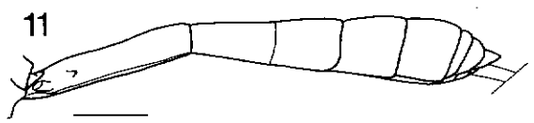
Distribution. This species is known from R. of Congo, Ivoiry Coast and Malagasy (Fig. 12).











Figs 6-8. *O. antefurcale* sp. n., female, holotype. Figs 9-11, *O. kiliwa* sp. n., female, holotype. 6, 9, wings; 8, dorsal view of metasoma; 7, 11, lateral view of metasoma; 10, dorsal view of hind tibia. Scale line: 7, 8, 11 = 500 um; 10 = 200 um. Color variation on pterostigma (Fig. 6) or variation on the surface of the tergites (Figs 7, 8) are shown by a dashed line.

Orgilonia kiliwa sp. n.
(Figs 3-5, 9-11)

Etymology. From the name of a tributary of the Garamba river (R. of Congo).

Material. Holotype (MRAC), 1 female, Congo Belge, Miss. H. de Saeger PNG, II/gd/4, 18.IX.1952 (H. DE SAEGER 4077). Paratypes (MRAC): 6 females, Congo Belge, Miss. H. de Saeger PNG, II/d 21.XII.1950 (1) (J. VERSCHUREN 998), II/gd/10 28.XII.1951 (1) (H. DE SAEGER 2954), II/e 8.I.1951 (1) and 3.I.1951 (2) (J. VERSCHUREN 1066 and 1033 respectively), II/gd/4 23.XI.1951 (1) (H. DE SAEGER 2780), and 2 males, Congo Belge, Miss. H. de Saeger PNG, II/fd/17 28.V.1951 (2) (H. DE SAEGER 1824).

Holotype, female, length of body 4 mm, of fore wing 3.5 mm.

Head (Fig. 3). Remaining antennal segments 36, length of third segment 0.9 times the fourth; lengthh of third, fourth segments 3, 2.5 times their maximal width; length of maxillary palp 1.1 times height of head; length of eyes in dorsal view 2.4 times temple; temple gradually narrowed posteriorly, shiny, coriaceous with a large gena; occipital carina absent; OOL: diameter of ocellus: POL = 4 : 1.5 : 2; frons coriaceous medially; vertex convex, slightly punctate, rounded near stemmaticum; face flattened, shiny, punctate; clypeus convex in lateral view, punctate and its ventral border sligthly convex; length of malar space 1.1 times basal width of mandible; occipital flange present.

Mesosoma (Fig. 4). Length of mesosoma 1.2 times its height; mesosoma coriaceous-granulate; mesopleuron, mesosternum coriaceous; mesosternum posterio-laterally rounded followed by a small carina posteriorly; prepectal carina regular not reaching the anterior border of mesopleuron; precoxal sulcus absentor slightly impressed; lateral lobe of mesoscutum shiny-coriaceous; mesoscutum weakly depressed at the junction of the notauli (Fig. 5); notauli as lines, indistinctly crenulate; scutelar sulcus with several short carina; scutellum shiny coriaceous; propodeum in lateral view flattened, granulate-coriaceous.

Wings (Fig. 9). Fore wing: r:3-SR+SR1:2-SR = 3 : 29 : 6; 1-SR+M straight; m-cu:1-M = 8 : 13; cu-a distinctly sligthly postfurcal; excepted basally CU1a basally coloured and reaching the border of wing; 3-CU1 2.5 times longer than CU1b.

Legs. Hind coxa coriaceous; length of femur, tibia, basitarsus of hind legs 6.2, 10.7, 10 times their width, respectively; length of hind tibial spurs 0.3 and 0.4 times hind basitarsus; hind tibia interiorly curved in dorsal view (Fig. 10); hind tibia with 3 - 4 apical teeths on outer face; tarsal claws medium-sized and setose.

Metasoma (Fig. 11). Length of the first tergite 2.4 times its apical width; first tergite greatest than the length of 2+3 tergites; surface of the first tergite coriaceous-granulate without dorsal carina; spiracles not protruding;

border of the first suture straight; second-fifth tergites shiny coriaceous; second suture smooth; third-fifth tergites with a smooth transversal band apically; ovipositor sheath 0.5 times fore wing.

Colour. Brown-yellow; fore and mid femur and tibia, ovipositor yellow; pronotum laterally, parastigma, distal part of hind femur, first tergite brown-yellow; frons, vertex, pedicellus, mesoscutum brown; last 15 flagellomers and dorsal face of the other, short stripe on outer part of scapus, ovipositor sheath, apical pegs of hind tibia, telotarsi of legs and all the hind tarsi dark-brownish; wing membrane hyaline sligthly infuscate.

Variations. Nearly as the holotype except the color of body that it will be more brownish.

Distribution. R. of Congo (North-East) (Fig. 12).

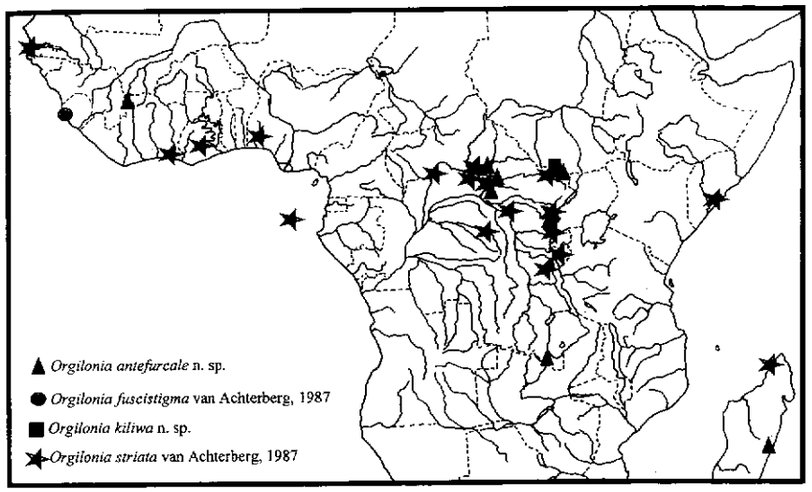


Fig. 12. Preliminary distribution map of the known *Orgilonia* species in Africa.

Orgilonia striata VAN ACHTERBERG, 1987

Specimens housed in the MRAC collections come mainly from the R. of Congo (Uélé, Kivu). However some of them (MRAC) were recorded for the first time from Burundi, Sao Tomé and Ivoiry Coast whereas four other specimens (MHNP) revealed its presence in the Malagasy region (Nosy-be). Previously known from Gambia, Ghana, Nigeria and R. of Congo (VAN ACHTERBERG, 1987), this species is probably widespread in the afrotropical region as shown on the figure 12. In spite of few datas, the comparison between the phenology of *O. striata* with *O. antefurcale* sp. n. seems revealed that they have a similar developmental cycle. Their maximum of presence seems occur during May-June (begining of the dried season) and their minimum during February (wet season) (Fig. 13).

From the ecological remarks supplied by DE SAEGER (1956), we can observed that these three *Orgilonia* species are mainly associated with Poaceae and Cyperaceae plants and semi-aquatic vegetations.

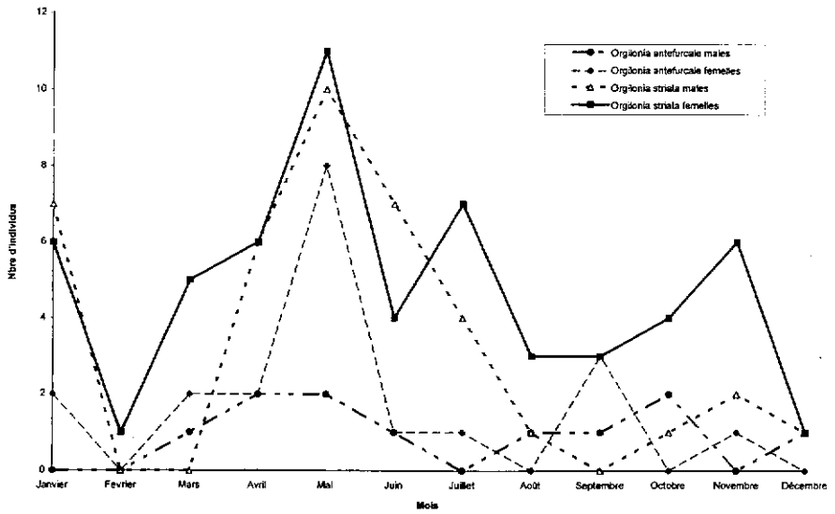


Fig. 13. Comparison between the respective phenology of *Orgilonia striata* VAN ACHTERBERG, 1987 (96 specimens) and *O. antefurcale* sp. n. (31 specimens).

Acknowledgments

We wish to thank Dr. E. DE CONNINCK (MRAC) and Dr. C. VILLEMANT (MHNP) for their help, to allow me the access of the collections and the loan of unidentified specimens. I thank also Dr. K. VAN ACHTERBERG (RMNH) for the loan of type-species of *O. fuscistigma* and for their helpfull suggestions. We thank Dr. P. GROOTAERT (IRSNB) and Prof. C. GASPAR (FUSAGx) for their suggestions and their help during our research. We thank J.-M. VANEST and D. VAN DER WAL (Philips Electron Optics) to help us in the realisation of all the scanning electron micrographs. We also offer gratitude to P. DEGREVE and J. CILLIS (IRSNB), J. BORTELS and C. WONVILLE (FUSAGx) for their help in bibliography search and technical support. We thank D. LÉONARD who reviewed the text.

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