



A new species of *Eurytoma* (Hymenoptera: Eurytomidae) attacking *Quadrastichus* spp. (Hymenoptera: Eulophidae) galling *Erythrina* spp. (Fabaceae), with a summary of African *Eurytoma* biology and species checklist

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Abstract

Eurytoma erythrinae Gates and Delvare, new species, is described and illustrated. This species was reared from field-collected galls on *Erythrina* spp. (Fabaceae) induced by *Quadrastichus* spp. (Hymenoptera: Eulophidae), in Tanzania, Ghana, and South Africa. It is compared with very similar African species, *Eurytoma radicolica* Risbec. Afrotropical species classified in *Eurytoma* are reviewed and twenty-seven new combinations are proposed: *Aximopsis acaciicola* (Hedqvist) **comb. n.**, *A. caryedocida* (Rasplus) **comb. n.**, *A. lamtoensis* (Rasplus) **comb. n.**, *A. mateui* (Hedqvist) **comb. n.**, *A. mimosarum* (Rasplus) **comb. n.**, *A. obocki* (Risbec) **comb. n.**, *A. oryzivora* (Delvare) **comb. n.**, *A. saharensis* (Hedqvist) **comb. n.**, *A. senegalensis* (Risbec) **comb. n.**, *A. tropicana* (Risbec) **comb. n.**, *Bruchophagus conapionis* (Rasplus) **comb. n.**, *Fronsona ellenbergeri* (Risbec) **comb. n.**, *Gibsonoma amborasahae* (Risbec) **comb. n.**, *G. aphloiae* (Risbec) **comb. n.**, *G. bararakae* (Risbec) **comb. n.**, *G. eugeniae* (Risbec) **comb. n.**, *G. mandrakae* (Risbec) **comb. n.**, *G. pauliani* (Risbec) **comb. n.**, *G. plectroniae* (Risbec) **comb. n.**, *G. tavolae* (Risbec) **comb. n.**, *Philolema arachnovora* (Hesse) **comb. n.**, *P. arnoldi* (Waterston) **comb. n.**, *P. bambeyi* (Risbec) **comb. n.**, *P. braconidis* (Ferrière) **comb. n.**, and *P. syleptae* (Ferri_re) **comb. n.**, *Phylloxeroxenus cressoni* (Howard) **comb. n.**, and *Sycophila plectroniae* (Risbec) **comb. n.** Lectotypes are designated for ten species: *Eurytoma perineti* Risbec, *E. radicolica* Risbec, *E. toddaliae* Risbec, *Gibsonoma amborasahae* (Risbec), *G. aphloiae* (Risbec), *G. eugeniae* (Risbec), *G. mandrakae* (Risbec), *G. pauliani* (Risbec), *G. tavolae* (Risbec), and *P. bambeyi* (Risbec). We also provide a checklist of Afrotropical species that are or were classified in *Eurytoma* and tabulate the known host/associations of these species with references.

Key words: *Eurytoma*, *Quadrastichus*, *Erythrina*, parasitic wasps, description, host relationship, checklist

Introduction

The genus *Eurytoma* is species-rich and widely divergent in its host range (Noyes 2003). Of approximately 700 nominal species worldwide, 301 are known from the Palaearctic Region and 61 from Africa (Noyes 2003). The African taxa are compiled in checklist form (see below), along with nomenclatural changes. Forty-seven African species have documented host/associate records (Table 1), of which seven are known to attack Hymenoptera. Of these seven species, only two are documented as parasitoids of Chalcidoidea (known hosts in parentheses): *E. risbecomaphaga* Rasplus (*Risbecoma capensis* (Walker), *R. pigrae* Rasplus; Eurytomidae) and *E. cressoni* Howard (*Eurytoma attiva* Burks). Neither of the chalcidoid hosts form galls, rather they attack bruchines (Coleoptera) on *Acacia* spp. and *Albizia* spp. (*R. capensis*), seeds of *Mimosa pigra* (*R. pigrae*) (Rasplus 1988), or seeds of *Cordia* spp. (Boraginaceae) (*E. attiva*). Of the remaining five species, one attacks Vespidae (Eumeninae): *Eurytoma pletiodropa* Delvare (*Eumenes caffer* (L.)) and four attack Braconidae: *E. apantelesi* Risbec (*Apanteles ghesquierei* de Saegar); *E. braconidis* Ferrière (*Aleiodes*, *Apanteles*, *Bracon*, *Euvipio*, and *Microbracon* species); *E. syleptae* Ferrière (*Apanteles* spp.) and *E. verbena* Ferrière (*Rhaconotus sudanensis* Wilkinson). Only two species have been recorded from Tanzania (country containing

type locality of *E. erythrinae*): *E. braconidis* and *E. oryzivora*.

The *Erythrina* gall wasp, *Quadrastichus erythrinae* Kim (Eulophidae), was recently described by Kim *et al.* (2004) in response to its spread as an invasive gall inducer of coral-bean trees (*Erythrina* spp.; Fabaceae). This wasp produces galls on shoots, twigs, leaves and petioles of several species of *Erythrina*, including *E. variegata* (L.) (= *E. indica*), *E. fusca* Lour., *E. subumbrans* (Hassk.) Merr., *E. crista-galli* L., and *E. sandwicensis* O. Deg., and results in loss of coral-bean trees wherever it is introduced. Of particular note is the devastating impact it is having on the Hawaiian endemic, *E. sandwicensis*. Coral-bean trees are used worldwide as ornamentals, windbreaks, and for soil/water conservation (Rotar *et al.* 1986). Plant parts, such as seeds, bark, wood, and roots, have also been used in folk remedies for various ailments (Hartwell 1967–1971, List and Horhammer 1969–1979, Perry 1980).

Quadrastichus erythrinae, thought to be native to Africa, is now recorded from Mauritius, La Réunion, Singapore, Hawaii, Taiwan, Hong Kong, China, India, Thailand, American Samoa, Guam, Okinawa and, most recently, Florida (USA). The first two collections were made in the Miami Metro Zoo, October 5 & 17, 2006 on *E. variegata*, and currently it is known from two counties (Miami-Dade, Broward) where stems of *E. variegata* were galled and seriously damaged (J. Wiley, pers. comm.). It has spread rapidly to the other islands of Hawaii since its discovery on Oahu in April 2005 (Kim *et al.* 2004, Yang *et al.* 2004, Heu *et al.* 2006, Nami *et al.* 2007).

In this paper, we describe a new species of *Eurytoma* Illiger associated with galls of *Quadrastichus* spp. (Hymenoptera: Eulophidae) in Africa. Details of this parasitoid's biology are unknown, nevertheless, it currently is being considered for biological control of *Q. erythrinae* in Hawaii.

Methods. Structures not visible on the holotype but shown in the figures are indicated by brackets. Abbreviations used for depositories are USNM (National Museum of Natural History, Smithsonian Institution, Washington, D.C.), MNHN (France, Paris, Muséum National d'Histoire Naturelle, Paris), BPBM (Bernice P. Bishop Museum, Honolulu, Hawaii), ANIC (Australia, Australian Capital Territory, Canberra City, CSIRO), SAMC (South African Museum, Capetown, South Africa), ORSTOM (Office de la Recherche Scientifique et Technique d'Outre-Mer Bondy, France), CIRAD (Centre de Cooperation Internationale en Recherche Agronomique pour le Développement, Montpellier, France), FSCA (Florida State Collection of Arthropods, Gainesville, Florida), and NCSU (North Carolina State University, Raleigh, North Carolina).

One of us (GD) compared the newly described species with *Eurytoma* spp. that were described by Risbec (1951, 1952, 1953, 1955, 1956, 1957a, 1957b). The types of the species described by Risbec, deposited in MNHN, are often mounted dried in welled slides on which the coverslips are ringed with paraffin, wax or sometimes Canada balsam. Those types newly designated as lectotypes were remounted on cards after removing the coverslips. Some of the Madagascan material that Risbec used in his descriptions was collected by André Seyrig in the 1930s, in which case they are pinned or glued on cards.

***Eurytoma erythrinae* Gates and Delvare, new species**

(Figs. 1–16)

Female holotype. Body length 2.4 mm. *Color:* Black except for the following straw yellow—scape, pedicel mesally and apically, anterolateral spot on pronotum, pro- and mesocoxae, front leg entirely, meso- and metatibiae, meso- and metafemora, and ovipositor sheaths (Fig. 1); fuscous—pedicel laterally and dorsally, flagellum, tegula, profemoral spot laterally, metafemoral band mediolaterally, and metacoxa; whitish—tarsomeres and wing veins.

Head 1.4X as broad as high, punctured with short radiating striae originating from oral fossa; anterior tentorial pits small but present; genal carina present, gena effaced-microreticulate, outline in frontal view straight on upper half and slightly convex below (Fig. 2); malar space 0.71X eye height, asetose; scrobal basin cari-

nate laterally, carina raised into a short lobe dorsad toruli and fading apically (Fig. 2); mandible tridentate, basal tooth truncate and separated from middle tooth by broad emargination; clypeus bilobate and supra-clypeal area smooth (Fig. 10); toruli positioned slightly above lower ocular line, inner edges distinctly raised; intertorular space sulcate and bearing two rows of hairs, not pointed above. Scrobal depression carinate laterally, carina raised as a lobe dorsad toruli and fading apically (Fig. 2). Antenna with scape reaching ventral margin of anterior ocellus; ratio of scape (minus radicle):pedicel:anellus: F1:F2: F3:F4:F5:club as 33:8:1:8:7:7:6:19; pedicel chalice-shaped; funicle fusiform; F1 slightly narrowed basally; funicular segments with single row of longitudinal sensilla (Fig. 11) and two whorls of setae, the latter slightly shorter to as long as its bearing segment; clava bisegmented. Ratio of lateral ocellus:ocellocular distance:postocellar distance as 6:5:21. Head posteriorly lacking postgenal lamina but postgenal grooves evidently ridged, not converging in their lower part, extending ventrally to upper margin of hypostomal bridge; dorsal margin of lateral foraminal plate visible, convex; subforaminal plate absent; postgenal sulci narrow, superficial. Mesosoma umbilicate (Fig. 3), 1.80X as long as broad; midlobe of mesoscutum 1.17X as long as broad; scutellum 1.33X as long as broad; notauli complete, shallow; axillar grooves with pit at mid length; lateral surface of prepectus triangular, broadly rounded posteriorly, smooth; subventral carinae of prepectus Y-shaped, joined posteriorly, ventral surface of prepectus without median tooth. Mesepimeron reticulate ventrally, dorsally delimited from femoral depression by fine carina with femoral depression reticulate at mid-height. Mesepisternum anterior to femoral depression umbilicate (Fig. 7), epicnemium imbricate, flattened, with superficial submedial, shallow depressions to receive procoxae (Fig. 7) [discrimen visible as anteromedial ovate depression]. Metapleuron and lateral areas of propodeum (Figs. 4, 5) shallowly umbilicate, propodeum broadly flattened, medially smooth, bordered mediolaterally by numerous carinae forming irregular asetose cells, these bordered laterally by setose cells (Fig. 5), basal carina clearly visible, raised into small teeth at anterior corners of median groove; cluster of setae anterolaterad nucha; spiracle about 1/3 its greatest diameter from dorsellum. Procoxa imbricate except anterior surface smooth, superficially depressed anteriorly for reception of lower head, the depression margined dorsally by very faint ridge (Fig. 6). Mesocoxa lacking lamella. Metacoxa elongate-reticulate anteriorly, becoming reticulate posteriorly, lacking dorsal hairs basally. Forewing with ratio of marginal vein:postmarginal vein:stigmatal vein as 21:15:12 (Fig. 12). Metasoma smooth, Gt 6 and syntergum weakly microreticulate (Fig. 8); petiole 0.7X as long as broad in dorsal view, with projecting lateral teeth as well as mediodorsal prong (Fig. 9); transverse ridge between petiole and Gs1 absent; gaster teardrop-shaped in lateral view, ovipositor angled at about 30° dorsad horizontal axis (Fig. 8); measurements of gastral terga along midline as 15:16:26:35:8:5:12; Gt4 emarginate posteriorly in dorsal view; Gt6 parabolic in cross section.

Male. Body length 1.9 to 2.3 mm (n=7). *Color:* black, yellow areas as described for female (Fig. 13). Sculpture as described for female. Antennal with funicular segments (Fig. 14) pedicellate, each with 2 or more rows of erect setae and about 1.5X as long as width of segment; ratio of scape (minus radicle):pedicel:anellus:F1:F2:F3: F4:F5:club as 21:7:1:12:11:11:11:10:18; scape with ventral plaque in apical half (Fig. 15), cellular structures visible beneath cuticle. Gastral petiole in lateral view cylindrical (Fig. 16), in dorsal view length about 3 X as long as greatest width, subequal in length to metacoxa; evenly reticulate dorsally and ventrally, smooth laterally.

Variation. Females vary in length from about 2.7 to 3.0 mm. In females, the fuscous area on the profemur can form a band in the middle half of the femur (but discontinuous medially), the gena adjacent to the malar carina can tend toward being completely smooth with microreticulation almost completely effaced. The epicnemial carina is sometimes incomplete in the anterior half. The procoxa may be marked with dark brown on the anterior surface. The pro- and mesocoxa may be entirely dark brown. The South African specimens (Nelspruit Bot. Garden) have shallower setigerous punctation overall and a more finely punctate, less defined median channel on the propodeum. Some South African males have a more yellowish coloration to the facial setation, and the hind femur can range from golden to having a brownish band in the medial half. A male

from Ghana displays a condition similar to material from the Nelspruit Bot. Garden in terms of sculpture reduction, and its metafemur is almost entirely brown.

Type specimens. Holotype, ♀, TANZANIA: Arusha: Maroron Village, 24.i.2006. M. Ramadan, emerging from *Erythrina abyssinica* galled seedpods, T2-B (USNM). Paratypes (26♀ 17♂): 8♀ 9♂, same data as for holotype (2♀ 3♂, USNM; 2♀ 1♂ BMNH) and same data as for holotype except T2-C (2♀ 3♂, ANIC; 2♀ 2♂ CIRAD). SOUTH AFRICA: Durban Harbor, R40, 8.IV.2006, coll. M. Wright, R. Messing, D. Rubinoff; emerged from galled leaves of *Erythrina lysistemon*, EGW-17 (2♀ 1♂ BPBM); Along Road R40, 1.IV.2006, coll. M. Wright, R. Messing, D. Rubinoff; emerged from galled leaves of *Erythrina lysistemon*, EGW-4 (6♀ 1♂ SAMC); Nelspruit, Botanic Garden, 1.IV.2006, coll. M. Wright, R. Messing, D. Rubinoff; emerged from *Erythrina lysistemon* galls, EGW-10 (4♀ SAMC). GHANA: Adomi Mamiwata, 7.V.2006, coll. A. Bokonon-Ganta, emerged from galls on *Erythrina* sp., 6 B2-A/41 (1♀ 1♂ FSCA); Aneho, 30.IV.2006, coll. A. Bokonon-Ganta; emerged from galls on *Erythrina vogelii*, 12 B2-L/66 (1♀ NCSU).

Etymology This epithet is a noun in apposition, feminine singular, and named for *Erythrina* (Fabaceae), the genus of plant with which it is associated.

Host. Reared from field populations of the gall-forming *Quadrastichus* spp. Note: There appear to be more than one species of *Quadrastichus* associated with galls from which *E. erythrinae* emerged (J. LaSalle, pers. comm.).

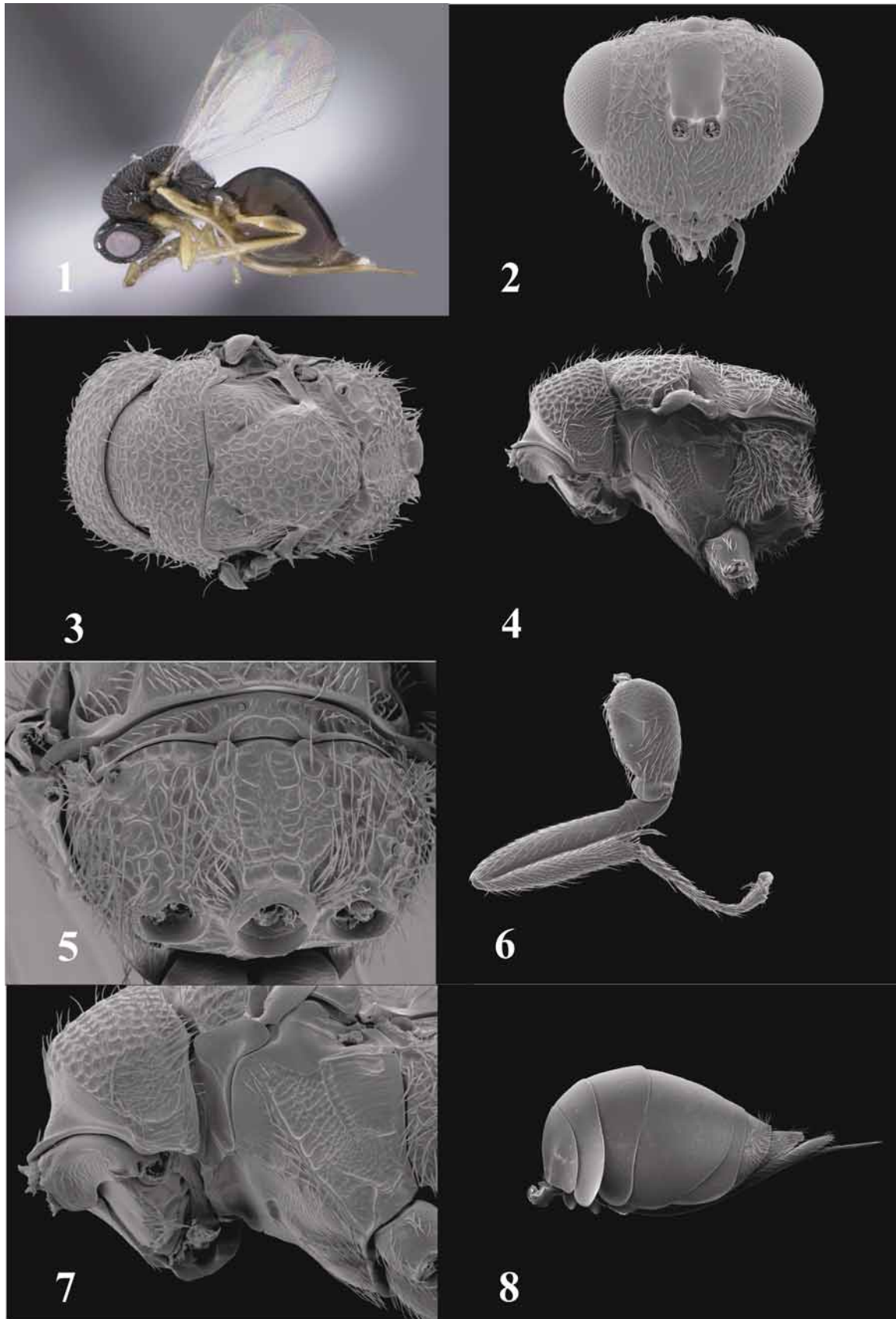
Distribution. Ghana, Tanzania, and South Africa.

Discussion. The bilobed clypeus, habitus of the intertorular space, fusiform funicular segments, Y-shaped subventral carinae of the prepectus, flat epicnemium, ornamentation of the propodeum, long gastral tergite 4 indicates that *E. erythrinae* is a member of the *dentata* species group as defined by Lotfalizadeh *et al.* (2007). However, it differs from most species in this group by lacking produced postgenal laminae that converge ventrally and a procoxal carina anteriorly, though there is a depression. Most members of the *dentata*-species group, where biology is known, attack Cecidomyiidae (Lotfalizadeh *et al.* 2007). *Eurytoma dentata* Mayr (1878) was reared from several gall-midges (Bouček 1977), especially of the genus *Asphondylia* (Parnell 1964, Noyes 2003). Another species of the same group was reared in Senegal from another *Asphondylia* galling ovaries of the plant *Solanum aethiopicum* L./Torner (Solanaceae) (Etienne & Delvare 1987). However, at least one species of the group is phytophagous, the larvae developing in pods of *Haematoxylon campechianum* L. (Fabaceae) in Guadeloupe (J. Étienne, pers. comm.). Examination of type material of *Eurytoma* species described from Africa by Risbec (1951, 1952, 1953, 1955, 1956, 1957a, 1957b) showed that it most closely resembles *E. radicolica* Risbec (1952), but is differentiated as follows (condition in *E. erythrinae* in parentheses): *E. radicolica* with moderately converging genae, straight in frontal view (convex in frontal view), elevated genal carina (elevation not discernible), F2–F5 longer than broad (subquadrate), median channel of propodeum delimited by carina laterally (poorly delimited), procoxa with oblique carina anteriorly (carina very faint), marginal vein 2X as long as postmarginal vein (subequal in length), and gastral profile straight along terga 3 and 4 (regularly convex). *Eurytoma radicolica* was collected in Madagascar from galls on the roots of orchids (Risbec 1952).

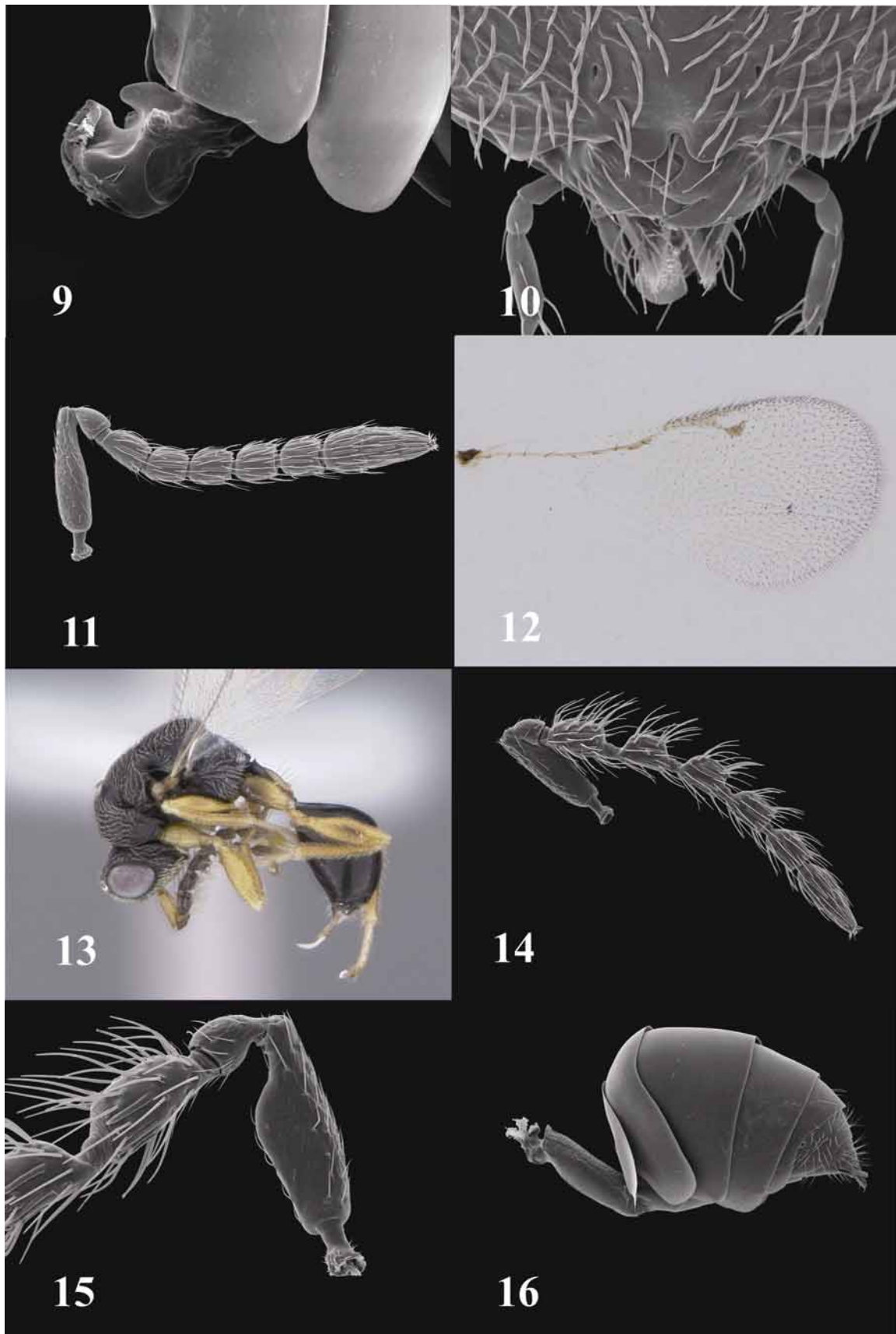
Classification. Based upon the recent morphological phylogenetic analysis of Lotfalizadeh *et al.* (2007), several genera have been re-characterized. Not surprisingly, the speciose genus *Eurytoma* proved polyphyletic and the genus was redefined based upon four putative synapomorphies. Eleven species groups are included in their *Eurytoma s.s.* Other genera were redefined based upon synapomorphic support and numerous nomenclatural changes proposed in Lotfalizadeh *et al.* (2007). Those changes proposed in the checklist below are based upon the redefined generic concepts of Lotfalizadeh *et al.* (2007), but were beyond the scope of that particular research effort.

Lotfalizadeh *et al.* (2007) included the *dentata* species group in the *Phylloxeroxenus* clade, which is species-rich and highly diverse in tropical regions. Unfortunately, their data do not support a robust generic classification due to instability in the trees based upon their morphological phylogenetic analysis. Further studies are needed, especially using molecular data, for a more robust phylogeny and to provide support for a new generic classification. Pending such a study, no alternate genera are available to receive *E. erythrinae*; thus,

our placement in *Eurytoma*, even though it does not fit the narrower concept of the *dentata* species group as proposed by Lotfalizadeh *et al.* (2007).



FIGURES 1–8. *Eurytoma erythrinae*, female: 1, lateral habitus; 2, anterior head; 3, dorsal mesosoma; 4, lateral mesosoma; 5, propodeum; 6, anterior prothoracic leg; 7, lateroventral mesosoma; 8, lateral gaster.



FIGURES 9–16. *Eurytoma erythrinae*, female: 9, lateral petiole; 10, clypeus; 11, antenna; 12, fore wing; male: 13, lateral habitus; 14, antenna; 15, scape; 16, lateral gaster.

Checklist of Afrotropical species of *Eurytoma* and species previously classified in *Eurytoma*

***Aximopsis* Ashmead, 1904**

Aximopsis acaciicola* (Hedqvist), **comb. n.*

Eurytoma acaciicola Hedqvist, 1967: 137–139.

Material examined. One ♀ (CIRAD), identified from the original description and figures.

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

Aximopsis caryedocida* (Rasplus), **comb. n.*

Eurytoma caryedocida Rasplus, 1988: 90–92.

Material examined. Paratypes ♀ ♂ (INRA).

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

Aximopsis lamtoensis* (Rasplus), **comb. n.*

Eurytoma lamtoensis Rasplus, 1988: 98–100.

Material examined. Paratypes ♀ ♂ (INRA).

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

Aximopsis mateui* (Hedqvist), **comb. n.*

Eurytoma mateui Hedqvist, 1967: 139–141.

Material examined. None.

Classification. According to the original description, figures and biology, the species belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

Aximopsis mimosarum* (Rasplus), **comb. n.*

Eurytoma mimosarum Rasplus, 1988: 94–98.

Material examined. Paratypes ♀ ♂ (INRA).

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

Aximopsis obocki* (Risbec), **comb. n.*

Eurytoma obocki Risbec, 1955: 565–568.

Eurytoma obocki Risbec: Delvare, 1988: 129.

Material examined. Holotype ♀ (MNHN), by monotypy. Djibouti, Obock, 1893 (M. Mandiron).

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

Aximopsis oryzivora* (Delvare), **comb. n.*

Eurytoma oryzivora Delvare, 1988: 130.

Material examined. Holotype ♀ (MNHN), designated by Delvare (1988) and validated here. CAMEROON: Yagoua, ex borer du riz, I.1955 (Descamps). Paratypes 22 ♀ ♀ 1 ♂, same data.

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

***Aximopsis saharensis* (Hedqvist), comb. n.**

Eurytoma saharensis Hedqvist, 1967: 139–141.

Material examined. None.

Classification. According to the original description, figures and hosts, the species belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

***Aximopsis senegalensis* (Risbec), comb. n.**

Eurytoma senegalensis Risbec, 1951: 356.

Eurytoma senegalensis Risbec: Delvare, 1988: 128–129.

Material examined. Holotype ♀ (MNHN), by monotypy.

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

***Aximopsis tropicana* (Risbec), comb. n.**

Eurytoma tropicana Risbec, 1953: 593–595.

Material examined. Holotype ♂ (MNHN), by monotypy. The type is in very poor condition, which makes the species hardly recognizable.

Classification. Belongs to *Aximopsis* as redefined by Lotfalizadeh *et al.* (2007).

***Bruchophagus* Ashmead, 1888**

***Bruchophagus conapionis* (Rasplus), comb. n.**

Eurytoma caryedocida Rasplus, 1988: 92–94.

Material examined. Holotype ♀ and paratypes ♀ ♂ (INRA).

Classification. Belongs to the *gibbus*-group of *Bruchophagus*.

***Bruchophagus houardi* (Risbec)**

Eurytoma houardi Risbec, 1957a: 253–256.

Bruchophagus houardi (Risbec): Delvare, 1988: 144.

Material examined. Lectotype ♀ (MNHN), designated by Delvare (1988).

Classification. Generic placement not definitively established. The species evidently belongs to the *Phylloxeroxenus* clade and is possibly related to the *salicis* species-group as defined by Lotfalizadeh *et al.* (2007). It belongs neither to *Bruchophagus* nor *Eurytoma s. s.* as redefined in the same paper.

***Eurytoma* Illiger, 1807**

***Eurytoma acaciae* Risbec**

Eurytoma acaciae Risbec, 1951: 353.

Eurytoma acaciae Risbec: Delvare, 1988: 142.

Material examined. Holotype ♀ (MNHN), by monotypy.

Classification. Belongs to the *verticillata* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma acuminata* Masi**

Eurytoma acuminata Masi, 1940: 282–286.

Material examined. None.

Classification. Generic placement not definitively established but based on the original description the species belongs to the *robusta* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma aloinae* (Burks)**

Bruchophagus aloinae Burks, 1958a: 273–277.

Eurytoma aloinae (Burks): Bouček, 1983: 193.

Material examined. None.

Classification. According to Bouček (1983) the species belongs to the *robusta* species-group of *Eurytoma s. s.*

***Eurytoma altiventris* Masi**

Eurytoma altiventris Masi, 1940: 286–289.

Material examined. None.

Classification. According to the original description and figures the species evidently belongs to the *robusta* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma attiva* Burks**

Eurytoma attiva Burks, 1958b: 177–180.

Material examined. Paratype ♀ and specimens reared in Guadeloupe from seeds of *Cordia* sp. (BMNH and CIRAD).

Classification. Belongs to the *rosae* species-group of *Eurytoma s. s.* The species has a Neotropical origin and was introduced in Mauritius from Trinidad together with its host plant *Cordia macrostychia*.

***Eurytoma apantelesi* Risbec**

Eurytoma apantelesi Risbec, 1951: 338–342.

Eurytoma apantelesi Risbec: Delvare, 1988: 137–138.

Material examined. Lectotype ♀ (MNHN), designated by Delvare (1988) and validated here, extracted and remounted from a slide labelled 'Eurytoma apantelesi Risbec sp. n./ex cocons Apanteles sur mil 17.12.1946 Bambey'. Paralectotypes, 2 ♀♀, same references; 2 ♀♀, from a slide labelled "Eurytoma apantelesi Risbec sp. n./ex cocons Apanteles sur aubergine 17.12.46 Bambey A.Wane; 2 ♀♀, from a slide labelled "Eurytoma apantelesi Risbec sp. n./de Pyrale du Mil Bambey'.

Classification. Belongs to the *verticillata* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma apionidis* Risbec**

Eurytoma apionidis Risbec, 1951: 346–348.

Eurytoma apionidis Risbec: Delvare, 1988: 132–133.

Material examined. Lectotype ♀ (MNHN), designated by Delvare (1988) and validated here, extracted and remounted from a slide labelled in Risbec's handwriting 'Eurytoma apionidis Risbec/ex Apion sp. sur gousse de niébé Bambey 12.12.46 A. Wane'. Paralectotypes. 1 ♀, from a slide labelled 'Eurytoma apionidis Risbec/

Bambey sur secco d'arachide A. Wane'; 3 ♀♀, from a slide labelled 'Eurytoma cylacaesida Risbec/ex Piezotrachelus varium N° 367'.

Classification. Belongs to the *robusta* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma basilewskyi* Risbec**

Eurytoma basilewskyi Risbec, 1957b: 201–203.

Material examined. None.

Classification. Generic placement not definitively established. According to the original description and figures the species belongs to *dentata* species-group within the *Phylloxeroxenus* clade and not *Eurytoma s. s.* as redefined by Lotfalizadeh *et al.* (2007).

***Eurytoma biumbae* Risbec**

Eurytoma biumbae Risbec, 1957b: 204–206.

Material examined. None.

Classification. Generic placement not definitively established. According to the original description and figures the species belongs to the *robusta* species-group of *Eurytoma s. s.*

***Eurytoma crotalariae* Risbec**

Eurytoma crotalariae Risbec, 1951: 348–349.

Prodecatoma villiersi Risbec, 1954: 530–532.

Eurytoma crotalariae Risbec: Delvare, 1988: 133–134.

Material examined. Lectotype ♀ (MNHN), designated by Delvare (1988) and validated here, extracted and remounted from a slide labelled in Risbec's handwriting 'Eurytoma crotalariae Risbec sp. n./ex gousses de Crotalaria'.

Classification. Belongs to the *crotalariae* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma diopsisi* Risbec**

Eurytoma diopsisi Risbec, 1956: 138–141.

Eurytoma diopsisi Risbec, 1956: 244.

Eurytoma camerounensis Risbec, 1956: 141–144.

Eurytoma diopsisi Risbec: Delvare, 1988: 134–136.

Material examined. Lectotype ♀ (ORSTOM collection in MNHN), designated by Delvare (1988).

Classification. Generic placement not definitively established. The species seems to belong to a special species group that was not included in the phylogenetic study of Lotfalizadeh *et al.* (2007). It is close to the *robusta*-group of *Eurytoma* with which it shares a similar lower face, intertorular space, prepectus, mesopleuron and procoxa, but the postgenal groove and postgenal lamina of *E. diopsisi* are similar to those of *Philolema*.

***Eurytoma dubia* (Masi)**

Eurytomidia dubia Masi, 1917: 137–138.

Eurytoma dubia Masi: Lotfalizadeh *et al.*, 2007: 508–509.

Material examined. Holotype ♂ (BMNH).

Classification. Belongs to the *robusta* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma elongata* Silvestri**

Eurytoma elongata Silvestri, 1915b: 339–340.

Material examined. Conspecific syntypes (4♀) mounted on cards and labelled 'Nefasit/semi oct. 1914' (Portici).

Classification. Generic placement not definitively established, but in all probability the species belongs to the *dentata* species-group of *Eurytoma* within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma enicospilusi* Risbec**

Eurytoma enicospilusi Risbec, 1952: 294–297.

Material examined. Syntypes from Madagascar, Békily (MNHN).

Classification. Belongs to the *verticillata* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma ficusgallae* Bouček**

Eurytoma ficusgallae Bouček in Bouček *et al.*, 1981: 205–208.

Material examined. Paratypes ♀ ♂ (BMNH).

Classification. Generic placement not definitively established. The species possibly belongs to the *obtusiventris* species-group within *Eurytoma* but evidently not to *Eurytoma s. s.* as redefined by Lotfalizadeh *et al.* (2007).

***Eurytoma lepidopterae* Risbec**

Eurytoma lepidopterae Risbec, 1951: 352 (in part).

Eurytoma lepidopterae Risbec: Delvare, 1988: 138.

Material examined. Lectotype ♀ (ORSTOM collection in MNHN), designated by Delvare (1988) and validated here, extracted and remounted from a slide labelled in Risbec's handwriting 'Bambey ex Acanthopsyche sur Ricin 21.11.1942, J. Risbec'. This series is quoted by Risbec (1951: 352) in his original description as 'a) Types ex Acanthopsyche sp. 21-11-42 (J. Risbec) sur ricin'; it was apparently further erroneously labelled as 'Eurytoma apionidis Risbec'. Paralectotypes, all the following are conspecific with the lectotype, 3 ♀♀, same references (ORSTOM collection in MNHN); 5 ♀♀, from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec sp. n./ex nids Eumenes caffer 26.12.45 Bambey' (MNHN); 11 ♀♀ 1 ♂, from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec sp. n./ex nid de guêpe Bambey 26.2.46' (MNHN); 4 ♀♀, from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec sp. n./ex chryslide sp. sur Ficus Bambey 11.6.46' (MNHN); 1 ♀, from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec sp. n./s/ Diospiros mespiliformis 26.2.46 Bambey' (MNHN).

Classification. Belongs to the *verticillata* species-group of *Eurytoma s. s.*

***Eurytoma natalensis* Cameron**

Eurytoma natalensis Cameron, 1907: 222.

Material examined. Type ♀ (BMNH).

Classification. Generic placement not definitively established, but in all probability the species belongs to the *dentata* species-group of *Eurytoma* within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma obesa* Risbec**

Eurytoma obesa Risbec, 1957a: 206–209.

Material examined. None.

Classification. Generic placement not definitively established. According to the original description and figures the species belongs to the *robusta* species-group of *Eurytoma s. s.*

***Eurytoma oleae* Silvestri**

Eurytoma oleae Silvestri, 1915a: 275–277.

Material examined. Conspecific syntypes (3♀ 3♂) mounted on cards and labelled 'Nefasit/olivo/Aprile 1914' (Portici).

Classification. Generic placement not definitively established, but in all probability the species belongs to the *dentata* species-group of *Eurytoma* within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma oliphantis* Hedqvist**

Eurytoma oliphantis Hedqvist, 1976: 66–67.

Material examined. None.

Classification. Generic placement not definitively established but, according to the original description, figures and biology, the species most probably belongs to the *appendigaster* species-group within *Eurytoma s. s.*

***Eurytoma orseoliphaga* Delvare**

Eurytoma orseoliphaga Delvare, 1988: 136.

Material examined. Holotype ♀ (MNHN).

Classification. Generic placement not definitively established. The species belongs to the *dentata*-group within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma perineti* Risbec**

Eurytoma perineti Risbec, 1952: 306–308.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled 'Elev. du 09.09.50 Eclos le 18.09.50 (A. R.) p. galle de Dingadinganalahy de Périnet (Composées) Elev. N° G. 144' in Paulian's handwriting and 'Eurytoma tavolae Risbec sp. n.' in Risbec's handwriting. Paralectotypes 2♂, from the same slide, conspecific with the Lectotype.

Classification. Generic placement not definitively established. The species belongs to the *dentata* species-group within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma piezotracheli* Rasplus**

Eurytoma piezotracheli Rasplus, 1988: 100–102.

Material examined. Paratypes ♀ ♂ (MNHN).

Classification. Belongs to the *dentata* species-group within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma pletiodropa* Delvare**

Eurytoma lepidopterae Risbec, 1951: 352 (in part).

Eurytoma pletiodropa Delvare, 1988: 140–142.

Material examined. Holotype ♀ (MNHN), designated by Delvare (1988) and validated here, extracted and remounted from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec/ex nid Eumenes caffer, 26.11.45 Bambey A. Wane'. Paratypes. 2 ♀♀ same references; 2 ♀♀ 1 ♂, from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec/ex nid Eumenes 26.2.46 Bambey A. Wane'.

These specimens, as being labelled by Risbec as 'Eurytoma lepidopterae Risbec sp. n.', are therefore also paralectotypes of this species.

Classification. Belongs to the *verticillata* species-group of *Eurytoma s. s.*

***Eurytoma poredipecta* Delvare**

Eurytoma lepidopterae Risbec, 1951: 352 (in part).

Eurytoma poredipecta Delvare, 1988: 140.

Material examined. Holotype ♀ (MNHN), designated by Delvare (1988) and validated here, extracted and remounted from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec/ ex chrysalides Chrysopsyche ladburyi Bambey. Paratypes, 52 ♀♀ 2 ♂♂, same data.

These specimens, as being labelled by Risbec as 'Eurytoma lepidopterae Risbec sp. n.', are therefore also paralectotypes of this species.

Classification. Belongs to the *verticillata* species-group of *Eurytoma s. s.*

***Eurytoma raditicola* Risbec**

Eurytoma raditicola Risbec, 1952: 303–304.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled 'Elevage du 20.09.50 Eclos le 03.10.50 N° G. 124 p. galle de racine d'orchidées du km 26, route de Tamatave' in Paulian's handwriting and 'Eurytoma raditicola Risbec sp. n.' in Risbec's handwriting.

Classification. Generic placement not definitively established. The species belongs to the *dentata* species-group within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma risbecomaphaga* Rasplus**

Eurytoma risbecomaphaga Rasplus, 1988: 104–106.

Material examined. Paratypes ♀ ♂ (INRA).

Classification. Belongs to the *dentata* species-group within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma spermophaga* Silvestri**

Eurytoma spermophaga Silvestri, 1915b: 337–339.

Material examined. Conspecific syntypes (7 ♀♀ 2 ♂♂) mounted on cards and labelled 'Nefasit/semi oct. 1914' (Portici).

Classification. Generic placement not definitively established, but the species evidently belongs to the *dentata* species-group of *Eurytoma* within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma toddaliae* Risbec**

Eurytoma toddaliae Risbec, 1952: 308–310.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled 'Elev. du 01.04.50 Eclos le 11.04.50 N° 721 p. galle tige de Toddalia aculeata. Mandraka (A. R.)' in Paulian's handwriting and 'Eurytoma toddaliae Risbec sp. n.' in Risbec's handwriting. Paralectotypes 4♀ 6♂, from the same slide, conspecific with the Lectotype.

Classification. Generic placement not definitively established. The species belongs to the *pistaciae* species-group within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma tolidopepra* Delvare**

Eurytoma lepidopterae Risbec, 1951: 352 (in part).

Eurytoma tolidopepra Delvare, 1988: 138–139.

Material examined. Holotype ♀ (MNHN), designated by Delvare (1988) and validated here, extracted and remounted from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec sp. n./ex chrysalide chenille sur Ficus 11.6.46 Bambey'. Paratypes. 24 ♀♀ 10 ♂♂, same references; 1 ♀, from a slide labelled in Risbec's handwriting 'Eurytoma verbenae Fer./ex gousse d'Acacia'; 3 ♀♀, from a slide labelled in Risbec's handwriting 'Eurytoma verbenae Fer./sur gousses d'arachide 18.4.47 Bambey'; 1 ♀, from a slide labelled in Risbec's handwriting 'Eurytoma verbenae Fer./ex Coenobasis postflavida Bambey'; 10 ♀♀, from a slide labelled in Risbec's handwriting 'Eurytoma lepidopterae Risbec sp. n./ex Psalysodes atrifasciata J. Risbec' (ORSTOM collection in MNHN).

The specimens being labelled by Risbec as 'Eurytoma lepidopterae Risbec sp. n.' are therefore also paralectotypes of this latter species.

Classification. Belongs to the *verticillata* species-group of *Eurytoma s. s.*

***Eurytoma transvaalensis* Cameron**

Eurytoma transvaalensis Cameron, 1911: 215–217.

Material examined. Type ♀ (BMNH).

Classification. Belongs to the *rosae* species-group of *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma varicolor* Silvestri**

Eurytoma varicolor Silvestri, 1915a: 277–279.

Material examined. Conspecific syntypes (5♀ 1♂) mounted on cards and respectively labelled 'Nefasit/olivo/ Aprile 1914, Sept. 1914 and Oct. 1914' (Portici).

Classification. Generic placement not definitively established, but in all probability the species belongs to the *dentata* species-group of *Eurytoma* within the *Phylloxeroxenus* clade and not to *Eurytoma s. s.* as defined by Lotfalizadeh *et al.* (2007).

***Eurytoma verbena* Ferrière**

Eurytoma verbena Ferrière, 1931: 127–128.

Eurytoma verbena Ferrière: Delvare, 1988: 132.
Eurytoma cyclasaecida Risbec, 1951: 349–350.
Eurytoma cyclasaecida var. *sphenarchi* Risbec, 1951: 350.

Material examined. Syntype ♀ (BMNH).

Classification. Belongs to the *robusta* species-group of *Eurytoma* s. s. as defined by Lotfalizadeh *et al.* (2007).

***Fronsoma* Narendran, 1994**

***Fronsoma ellenbergeri* (Risbec), comb. n.**

Prodecatoma ellenbergeri Risbec, 1955: 555–558.
Eurytoma ellenbergeri (Risbec): Delvare, 1988: 143–144.

Material examined. Holotype ♀ (MNHN), by monotypy.

Classification. Belongs to *Fronsoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma* Narendran, 1994**

***Gibsonoma amborasahae* (Risbec), comb. n.**

Eurytoma amborasahae Risbec, 1952: 300–301.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled ‘Elev. du 01.04.50 Eclos le 24.04.50 N° 700 p. galle de la tige d’Amborasaha de la Mandraka (A. R.)’ in Paulian’s handwriting and ‘*Eurytoma amborasahae* Risbec sp. n.’ in Risbec’s handwriting. Paralectotypes 1♀ 2♂, from the same slide, conspecific with the Lectotype.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma aphloiae* (Risbec), comb. n.**

Eurytoma aphloiae Risbec, 1952: 300.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled ‘Elev. du 01.04.50 Eclos le 03.05.50 N° 729 p. des galles de tige de Aphloia theaeformis de la Mandraka (A. R.)’ in Paulian’s handwriting and ‘*Eurytoma aphloiae* Risbec sp. n.’ in Risbec’s handwriting. Paralectotype ♀, from the same slide, conspecific with the Lectotype.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma bararakae* (Risbec), comb. n.**

Eurytoma bararakae Risbec, 1952: 303.

Material examined. Holotype ♀ (MNHN), by monotypy, remounted from slide labelled ‘Elev. du 09.09.50 Eclos le 14.10.50 N° G. 127 p. galle de feuille de Baraka (Rubiacées) de Périnet (A. R.)’ in Paulian’s handwriting and ‘*Eurytoma bararakae* Risbec sp. n.’ in Risbec’s handwriting.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma eugeniae* (Risbec), comb. n.**

Eurytoma eugeniae Risbec, 1952: 305–306.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled ‘Elev. du 09.09.50

Eclos le 18.09.50 N° G. 120 (A. R.) p. galle de feuille d'Eugenia sp. de Périnet' in Paulian's handwriting and 'Eurytoma eugeniae Risbec sp. n.' in Risbec's handwriting. Paralectotype ♂, from the same slide, conspecific with the lectotype.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma mandrakae* (Risbec), comb. n.**

Eurytoma mandrakae Risbec, 1952: 299–300.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled 'Elev. du 01.04.50 Eclos le 22.04.50 N° 727 p. des galles de la feuille de Dipatylona de Mandraka' in Paulian's handwriting and 'Eurytoma mandrakae Risbec sp. n.' in Risbec's handwriting. Paralectotype ♀, from the same slide. Other paralectotypes remounted from slides labelled: 1) 1♂ 'Elev. du 01.04.50 Eclos 05.04.50 N° 705 p. galles feuilles Pavinanto de la Mandraka (A. R.)' in Paulian's handwriting and 'Eurytoma mandrakae Risbec sp. n.' in Risbec's handwriting; 2) 1♂ 1♀ 'Elev. du 01.04.50 Eclos le 22.04.50 N° 710 p. des galles de la feuille de Dipatylona de Mandraka' in Paulian's handwriting and 'Eurytoma mandrakae Risbec sp. n.' in Risbec's handwriting; 3) 2 ? Ormyrus [!] 'Elev. du 01.04.50 Eclos 07.04.50 N° 710 p. des galles de la feuille de Dipaty ou de Mahasavélona de Mandraka (A. R.) in Paulian's handwriting and 'Eurytoma mandrakae Risbec sp. n.' in Risbec's handwriting.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma pauliani* (Risbec), comb. n.**

Eurytoma Pauliani Risbec, 1952: 297–298.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled 'Elev. du 01.04.50 Eclos 06.04.50 N°706 p. de la galle de tige de vahybomotono de la Mandraka (A. R.)' in Paulian's handwriting and 'Eurytoma Pauliani Risbec sp. n.' in Risbec's handwriting. Paralectotype ♀, from the same slide, conspecific with the lectotype.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma plectroniae* (Risbec), comb. n.**

Eurytoma plectroniae Risbec, 1952: 310–312.

Material examined. Holotype ♀ (MNHN), by monotypy, remounted from slide labelled 'Elev. du 26.05.50 Eclos le 24.07.50 N° G. 693 p. galle de feuille de Plectronia sp. (Rubiaceés) de Tsinjoarivo (R. P.)' in Paulian's handwriting and 'Eurytoma plectroniae Risbec sp. n.' in Risbec's handwriting.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

***Gibsonoma tavolae* (Risbec), comb. n.**

Eurytoma tavolae Risbec, 1952: 301–302.

Material examined. Lectotype ♀ (MNHN), here designated, remounted from slide labelled 'Elevage du 29.05.50 Eclos le 02.06.50 (A. R.) P. galle en boule sur la feuille de Tarolo de Périnet élev. N° G. 81' in Paulian's handwriting and 'Eurytoma tavolae Risbec sp. n.' in Risbec's handwriting. Paralectotypes 2♀ 2♂, from the same slide, conspecific with the lectotype.

Classification. Belongs to *Gibsonoma* as defined by Lotfalizadeh *et al.* (2007).

Philolema Cameron, 1908

Philolema arachnovora (Hesse), **comb. n.**

Eurytoma arachnovora Hesse, 1942: 58–63.

Desantisca arachnovora (Hesse): Burks, 1971: 38; Prinsloo, 1980: 161.

Material examined. Paratype ♀ (BMNH).

Classification. Belongs to *Philolema* as redefined by Lotfalizadeh *et al.* (2007), as do species previously classified in the *lactrodecti* species-group of *Eurytoma*.

Philolema arnoldi (Waterston), **comb. n.**

Eurytoma arnoldi Waterston, 1926: 343–345.

Material examined. Paratype ♀ (BMNH).

Classification. Belongs to *Philolema* as redefined by Lotfalizadeh *et al.* (2007).

Philolema bambeyi (Risbec), **comb. n.**

Eurytoma bambeyi Risbec, 1951: 354–356.

Eurytoma bambeyi Risbec: Delvare, 1988: 126–128.

Material examined. Lectotype ♀ (MNHN), designated by Delvare (1988) from a series of four syntypes, three of these males representing another unidentified species.

Classification. Belongs to *Philolema* as redefined by Lotfalizadeh *et al.* (2007).

Philolema braconidis (Ferrière), **comb. n.**

Eurytoma braconidis Ferrière, 1929: 256–258.

Eurytoma braconidis Ferrière: Delvare, 1988: 126.

Material examined. Lectotype ♀ (BMNH), designated by Polaszek & LaSalle (1995).

Classification. Belongs to *Philolema* as redefined by Lotfalizadeh *et al.* (2007).

Philolema syleptae (Ferrière), **comb. n.**

Eurytoma syleptae Ferrière, 1931: 128.

Eurytoma syleptae Ferrière: Delvare, 1988: 126.

Material examined. Holotype ♀ (BMNH).

Classification. Belongs to *Philolema* as recently redefined by Lotfalizadeh *et al.* (2007).

Phylloxeroxenus Ashmead, 1888

Phylloxeroxenus cressoni (Howard), **comb. n.**

Eurytoma cressoni Howard, 1897: 138

Eurytoma cressoni Howard: Burks, 1958b: 180–182.

Material examined. Holotype ♀ and several specimens reared in Guadeloupe from seeds of *Cordia* sp. (USNM).

Classification. Belongs to the genus *Phylloxeroxenus* (Lotfalizadeh *et al.* 2007). The species has a Neotropical origin but was introduced in Mauritius from Trinidad together with its host plant, *Cordia macrostychya* (see Burks, 1958b).

Sycophila Walker, 1871

Sycophila plectroniae (Risbec), **comb. n.**

Decatoma (*Eudecatoma*) *plectroniae* Risbec, 1952: 273–274.

Eurytoma plectroniae (Risbec): Noyes, 2003.

Material examined. None.

Classification. According to the original description, it is evident that this species is a *Sycophila* and was erroneously reported as a junior homonym (Noyes 2003) of *Eurytoma plectroniae* described later in the same work (Risbec 1952).

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TABLE 1. Host records and sources for African species of *Eurytoma* and species previously classified in *Eurytoma*.

Species	Host/Association	Reference ²
Species of <i>Aximopsis</i>		
<i>caryedocida</i> Rasplus, 1988	<i>Caryedon serratus</i> (Chrysomalidae: Bruchinae)	X; Gagnepain & Rasplus, 1989
<i>lamtoensis</i> Rasplus, 1988	<i>Bruchidius albizziarum</i> (Chrysomelidae: Bruchinae)	X
<i>mateui</i> Hedqvist, 1967	Emerged from dead wood of <i>Acacia raddiana</i>	X
<i>mimosarum</i> Rasplus, 1988	<i>Exechesops quadrituberculatus</i> (Coleoptera: Anthribidae), <i>Bruchidius</i> sp. (Coleoptera: Chrysomelidae)	X
<i>obocki</i> Risbec, 1957a	Unknown	
<i>oryzivora</i> Delvare, 1988	<i>Sesamia calamistis</i> (Noctuidae); <i>Chilo</i> spp., <i>Maliarpha separatella</i> (Pyralidae)	X; Delvare, 1988; Polaszek et al., 1998; several, see Noyes 2003
<i>saharensis</i> Hedqvist, 1967	Emerged from dead wood of <i>Acacia raddiana</i>	X
<i>senegalensis</i> Risbec, 1951	Reared from galls on <i>Acacia seyal</i> ; ex pods of <i>Acacia albida</i>	X; Delvare, 1988
<i>tropicana</i> Risbec, 1953	Unknown	
Species of <i>Bruchophagus</i>		
<i>conapionis</i> Rasplus, 1988	<i>Pseudoconapion</i> sp. (Coleoptera: Apionidae)	X
Species of <i>Eurytoma</i>		
<i>acaciicola</i> Hedqvist, 1967	<i>Anthaxia pumila</i> Hg., <i>A. angustipennis</i> Klug. on <i>Acacia raddiana</i> Savi	X
<i>acaciae</i> Risbec, 1951	On <i>Acacia seyal</i> Delile	X
<i>acuminata</i> Masi, 1940	Unknown	
<i>aloinae</i> (Burks), 1958a	<i>Aloe ferax</i> Mill. (Aloaceae)	X; Prinsloo, 1980
<i>altiventris</i> Masi, 1940	Unknown	
<i>apantelesi</i> Risbec, 1951	<i>Apanteles</i> sp., <i>Apanteles ghesquierei</i> (Hymenoptera: Braconidae), <i>Phycita diaphana</i> (Lepidoptera: Pyralidae)	X; Herting, 1975, 1977
<i>apionidis</i> Risbec, 1951	<i>Piezotrachelus varium</i>	X
<i>arabica</i> Risbec, 1951	Reared from pods of <i>Indigofera</i> sp. (Fabaceae)	X
<i>attiva</i> Burks, 1958b	<i>Cordia</i> spp. (Solanales: Boraginaceae)	X; De Santis, 1979
<i>basilewskyi</i> Risbec, 1957a	Unknown	
<i>biumbae</i> Risbec, 1957a	Unknown	
<i>congolense</i> Delucchi, 1956	Unknown	
<i>crotalariae</i> Risbec, 1951	Reared from seeds of <i>Crotalaria</i> sp.	X
<i>diopsisi</i> Risbec, 1956	<i>Diopsis</i> spp. (Diptera: Diopsidae)	X; Herting, 1978
<i>electa</i> Crosby, 1909	Unknown	
<i>elongatula</i> Silvestri, 1915b	Unknown	
<i>enicospilusi</i> Risbec, 1952	Reared from Lepidoptera cocoons, <i>Enicospilus</i> sp. (Ichneumonidae)	X
<i>figusgallae</i> Bouček, 1981	Ex stem galls on <i>Ficus burkei</i> (Miq.) Miq. (Moraceae)	X; Watsham, 1984
<i>galeati</i> Girault, 1916	<i>Ceroplastes galeatus</i> Newstead (Hemiptera: Coccidae)	Thompson, 1955
<i>ivohibe</i> Risbec, 1957b	Unknown	
<i>lepidopterae</i> Risbec, 1951	Lasiocampidae, Notodontidae, Psychidae, Pyralidae (Lepidoptera)	X; Herting, 1975, 1976

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TABLE 1 (continued)

Species	Host/Association	Reference ²
<i>natalensis</i> Cameron, 1907	Unknown	
<i>obesa</i> Risbec, 1957a	Unknown	
<i>oleae</i> Silvestri, 1915a	ex seeds of <i>Olea chrysophylla</i>	X
<i>oliphantis</i> Hedqvist, 1976	Assoc. with <i>Eragrostis tremula</i> (Cyperales: Poaceae)	X
<i>orseoliphaga</i> Delvare, 1988	<i>Orseolia oryzivora</i> (Diptera: Cecidomyiidae)	X
<i>palliditarsis</i> Cameron, 1911	Unknown	
<i>perineti</i> Risbec, 1952	Reared from bud galls on <i>Psiadia altissima</i> (Asteraceae)	X
<i>piezotracheli</i> Rasplus, 1988	<i>Piezotrachelus</i> sp. (Coleoptera: Apionidae)	X
<i>pletiodropa</i> Delvare, 1988	Ex nests of <i>Eumenes caffer</i> (Hymenoptera: Vespidae)	X
<i>porediplota</i> Delvare, 1988	<i>Chrysopsyche ladburyi</i> (Lepidoptera: Lasiocampidae)	X
<i>radicicola</i> Risbec, 1952	Reared from root galls on Orchidaceae	X
<i>reunionensis</i> Risbec, 1957b	Unknown	
<i>risbecomaphaga</i> Rasplus, 1988	<i>Risbecoma</i> spp. (Hymenoptera: Eurytomidae)	X
<i>spermophaga</i> Silvestri, 1915b	Diptera: Tephritidae (4 genera)	X
<i>striatula</i> Cameron, 1905	Unknown	
<i>tenebrica</i> Crosby, 1909	Unknown	
<i>testaceitarsis</i> (Cameron), 1905	Unknown	
<i>toddaliae</i> Risbec, 1952	Reared from stem galls on <i>Toddalia aculeata</i> (Rutaceae)	X
<i>tolidepepra</i> Delvare, 1988	<i>Coenobasis postflavida</i> (Limacodidae) <i>Psalisodes atrifasciata</i> (Notodontidae)	X
<i>transvaalensis</i> Cameron, 1911	Unknown	
<i>varicolor</i> Silvestri, 1915a	Assoc. with <i>Olea chrysophylla</i> (Lamiales: Oleaceae)	X
<i>verbena</i> Ferrière, 1931	Assoc. with <i>Pectinophora gossypiella</i> (Gelechiidae); <i>Cylas formicarius</i> & <i>C. puncticollis</i> (Apionidae), <i>Conicobruchus strangulateus</i> (Chrysomelidae Bruchinae), Chloropidae, <i>Eublemma gayneri</i> (Noctuidae), <i>Sphenarches caffer</i> (Pterophoridae), <i>Rhaconotus sudanensis</i> (Braconidae)	X; Risbec, 1951; Delvare, 1988
Species of <i>Fronsoma</i>		
<i>ellenbergeri</i> (Risbec, 1955)	Unknown	
Species of <i>Gibsonoma</i>		
<i>amborasahae</i> Risbec, 1952	Reared from stem galls on “Amborasaha” ¹ (<i>Burasaia madagascariensis</i> ; Menispermaceae)	X
<i>aphloiae</i> Risbec, 1952	Reared from stem galls on <i>Aphloia theaeformis</i>	X
<i>bararakae</i> Risbec, 1952	Reared from galls on “Bararaka” (<i>Gaertnera</i> sp.; Rubiaceae)	X
<i>eugeniae</i> Risbec, 1952	Reared from galls on <i>Eugenia</i> (Myrtaceae)	X
<i>mandrakae</i> Risbec, 1952	Reared from leaf galls on “Pavinanto” & “Dipaty” or “Menasavelona”	X
<i>pauliani</i> Risbec, 1952	Reared from stem galls on “Vahybomofono”	X
<i>plectroniae</i> Risbec, 1952	Reared from leaf galls on <i>Plectronia</i> sp. (Rubiaceae)	X
<i>tavolae</i> Risbec, 1952	Unknown. Reared from leaf galls on “Tavolo” (<i>Ravensara acuminata</i> ; Lauraceae)	X

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TABLE 1 (continued)

Species	Host/Association	Reference ²
Species of <i>Philolema</i>		
<i>arachnovora</i> Hesse, 1942	<i>Latrodectus</i> spp. (Araneae: Theridiidae)	X; De Santis, 1979; Prinsloo, 1980
<i>arnoldi</i> Waterston, 1926	From web of spider	X
<i>bambeyi</i> Risbec, 1951	Unknown	
<i>braconidis</i> Ferrière, 1929	<i>Bracon hancocki</i> ex Gelechiidae; hyperparasite ex <i>Diparosis castanea</i> (Noctuidae); <i>Apanteles taragamae</i> and <i>Bracon brevicornis</i> ex <i>Opisina arenosella</i> (Oecophoridae); <i>A. sagax</i> and <i>A. syleptae</i> ex <i>Haritalodes derogata</i> (Crambidae); <i>Bracon sesamiae</i> , <i>Bracon</i> sp. and <i>Stenobracon unifasciatus</i> (Braconidae) ex <i>Chilo partellus</i> and <i>Coniesta ignefusalis</i> (Crambidae), <i>Busseola fusca</i> , <i>Sesamia cretica</i> and <i>S. calamistis</i> (Noctuidae)	X; Ghosh & Abdurahiman, 1985; Abdurahiman & Chandrasekharan, 1993; Silvie <i>et al.</i> , 1994; Kfir, 1995; Polaszek & LaSalle, 1995; Polaszek <i>et al.</i> , 1998
<i>syleptae</i> Ferrière, 1931	Assoc. with <i>Pectinophora gossypiella</i> (Gelechiidae); <i>Apanteles transvaalensis</i> ex <i>Spodoptera exempta</i> (Noctuidae); <i>Apanteles congoensis</i> ex <i>Dichocrocis crocodea</i> (Crambidae); <i>Apanteles sagax</i> and <i>A. syleptae</i> ex <i>Haritalodes derogata</i> (Crambidae)	X; Smee, 1946; Schmitz, 1949; Benoit, 1949; Silvie <i>et al.</i> , 1994
Species of <i>Phylloxeroxenus</i>		
<i>cressoni</i> Howard, 1897	<i>Eurytoma attiva</i> Burks (Hymenoptera: Eurytomidae)	Burks 1958b; De Santis, 1979
Species of <i>Sycophila</i>		
<i>plectroniae</i> Risbec, 1952	Reared from galls on <i>Plectronia thouarsi</i>	X

¹ Plant names in quotations are common, local names used in Madagascar. These were cross-checked online and/or in Holloway (2004).

² An “X” in this column indicates that the original reference was the information source.