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REVISION OF THE AGAONIDAE DESCRIBED BY J. RISBEC, AND NOTES ON THEIR TORYMID SYMBIONTS (HYMENOPTERA, CHALCIDOIDEA)

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With 22 text-figures

After having given for publication my report on the West African Agaonidae (Wiebes, 1969b), I received on loan the type specimens of several species described by J. Risbec (1951a, b; 1954a, b). A few lines on the results of the study of these specimens could be incorporated in the proof of my paper previously mentioned. Formal type designations and some additional remarks on the Agaonidae described by Risbec (1955, 1956) from East Africa and Madagascar, are given in the present note. A summary is presented in table 1 (page 8).

During a short visit to the Muséum National d'Histoire naturelle at Paris (abbreviated MP in the text), I could study some more slides of the Agaonidae, and examples of the greater part of the Torymidae Sycophaginae described or recorded by Risbec (1951a, b; 1956, 1957). Preliminary notes and remarks upon these Torymidae conclude the present report.

I acknowledge the assistance of Dr. J. R. Steffan, of the Paris Museum, who sent on loan most of the material recorded in this paper. Dr. R. M. Quentin (ORSTOM, Bondy, France) sent on loan specimens of the species from Madagascar; Dr. K. J. Joseph (Karnatak University, India) sent the type of *Ceratosolen longicornis* Joseph.

Agaon paradoxum Dalman

Agaon paradoxum; Risbec, 1954b: 1086 (♀, Ivory Coast, Adiopodoumé); Wiebes, 1968b: 354 (full bibliography); Wiebes, 1969b: 452 (♀, Ivory Coast, Bingerville and Divo, several data in 1962-1964, at light).

Blastophaga Villiersi Risbec, 1954a: 538-540, fig. 3a-c (descr. ♀, Senegal, Dakar, 29.vii.1952, at light); Wiebes, 1961: 237 (in *Agaon* Dalman); Wiebes, 1968b: 354 (catalogue); Wiebes, 1969b: 451 (synonym of *Agaon paradoxum* Dalman).

Material. — 1 ♀, "A. Ledoux, Adiopodoumé, *Agaon paradoxum* Dalman", "Orstom — Paris, coll. J. Risbec"; slide-mounted (MP).

1 ♀, "Agaonidae, *Blastophaga villiersi* Risbec, Type", "Dakar, Senegal, 29.vii.1952, à la lampe", "Ifan 1952, à la lampe, 29.vii.52, A. Villiers"; slide-mounted (MP). Holotype.

The record of *Agaon paradoxum* by Risbec (1954b), evidently based on the present specimen from Adiopodoumé, proves to be correct. It refers to genuine *A. paradoxum* Dalman and not to *A. hamiferum* (Kieffer), which was mistaken for *A. paradoxum* by Grandi (1916: 207) and subsequent authors (see Wiebes, 1968b: 353).

The type specimen of *Blastophaga Villiersi* Risbec appears to belong to *Agaon paradoxum* Dalman.

***Agaon b. bekiliensis* (Risbec)**

(figs. 1, 3-13)

Pleistodontes bekiliensis Risbec, 1956: 191-194, figs. 8c-e, 10 (descr. ♀, ♂, Madagascar, Bekily, x.1938); Wiebes, 1961: 237 (in genus *Agaon* Dalman?).

Material. — 1 ♀, 1 ♂, "*Pleistodontes bekiliensis* Risbec, Bekily x.38, A. Seyrig"; remounted on two slides (ORSTOM). The female is now designated lectotype.

Female. — Head (fig. 9) not quite $1\frac{1}{2}$ times as long as wide across the compound eyes; the longitudinal diameter of the eye half as long as the cheek. Three ocelli. Antenna (fig. 1): the scape with a ventral triangular protrusion, as usual in the genus, but the margin of the protrusion not "finement denticulé" (Risbec, 1956: 191) in the specimen studied; the pedicel with a few setae; the third segment attenuated, its apex bluntly rounded, with two terminal spine-like setae; the rather short fourth segment without long setae; the fifth to eleventh segments approximately in length-ratio 6: 8: 7: 6: 5: 5: 4: 7, all with long setae. Mandible (fig. 5) tridentate, with about eight ventral ridges and some smaller ridges in between the larger; the appendage three times as long as wide, with about thirty rows of approximately thirty to thirty-five small teeth. Labium and maxillae, fig. 6.

Thorax. Wings not present in the specimen studied. Fore leg (figs. 3, 4): the tibial comb of teeth consisting of two large teeth and a smaller in between; the metatarsus with about fifteen slender, axial spines; the tarsal segments approximately in ratio 9: 5: 4: 3: 7. Hind tibia (fig. 8) with a hyaline margin; the tarsal segments approximately in ratio 15: 8: 8: 5: 9.

Gaster. Hypopygium, fig. 7. The ovipositor is as long as the gaster.

Male. — Head and thorax, fig. 10. Antenna and mouth-parts as in *Agaon bispinosum*.

Thorax. Fore leg (figs. 11, 12): the tibia with two conical spines on the dorsal surface, two spine-like setae, and several normal setae; the first tarsal segment with an antiaxial row of three cones, and two axial cones; the apical segment with one cone; the tarsal segments approximately in ratio 4:7. The metatarsus of the mid leg has only five conical spines, three of which are ventral in position. Hind tibia and tarsus, fig. 13; the tarsal segments approximately in ratio 10:5:4:4:12.

Remarks. — *Agaon bekiliensis* (Risbec) scarcely differs from *A. bispinosum* Wiebes (1969: 453-455, figs. 1-18), recently described from Ivory Coast. Some differences may be found in the size of the compound eyes of the female, which are slightly larger relative to the length of the cheek in *A. bekiliensis*; in the shape of the spines of the third segment of the female antenna and in the length of the fourth segment (cf. fig. 2), in the shape of the comb of the female fore tibia, and in the number of conical spines on the male fore tibia, fore tarsus and mid tarsus. These differences are very slight, and they may be of little value. For the time being, I regard *A. b. bekiliensis* (Risbec) and *A. bekiliensis bispinosum* Wiebes as subspecies.

The species of the genus *Pleistodontes* Saunders, in which Risbec described his new species from Madagascar, are quite distinct from those of *Agaon* Dalman, e.g. in the shape of the sensilla of the female antenna (long and flexible in *Agaon*, sensilla linearia in *Pleistodontes*), and in the number of segments in the male fore tarsus (two in *Agaon*, versus five in *Pleistodontes*).

Allotriozoon heterandromorphum Grandi

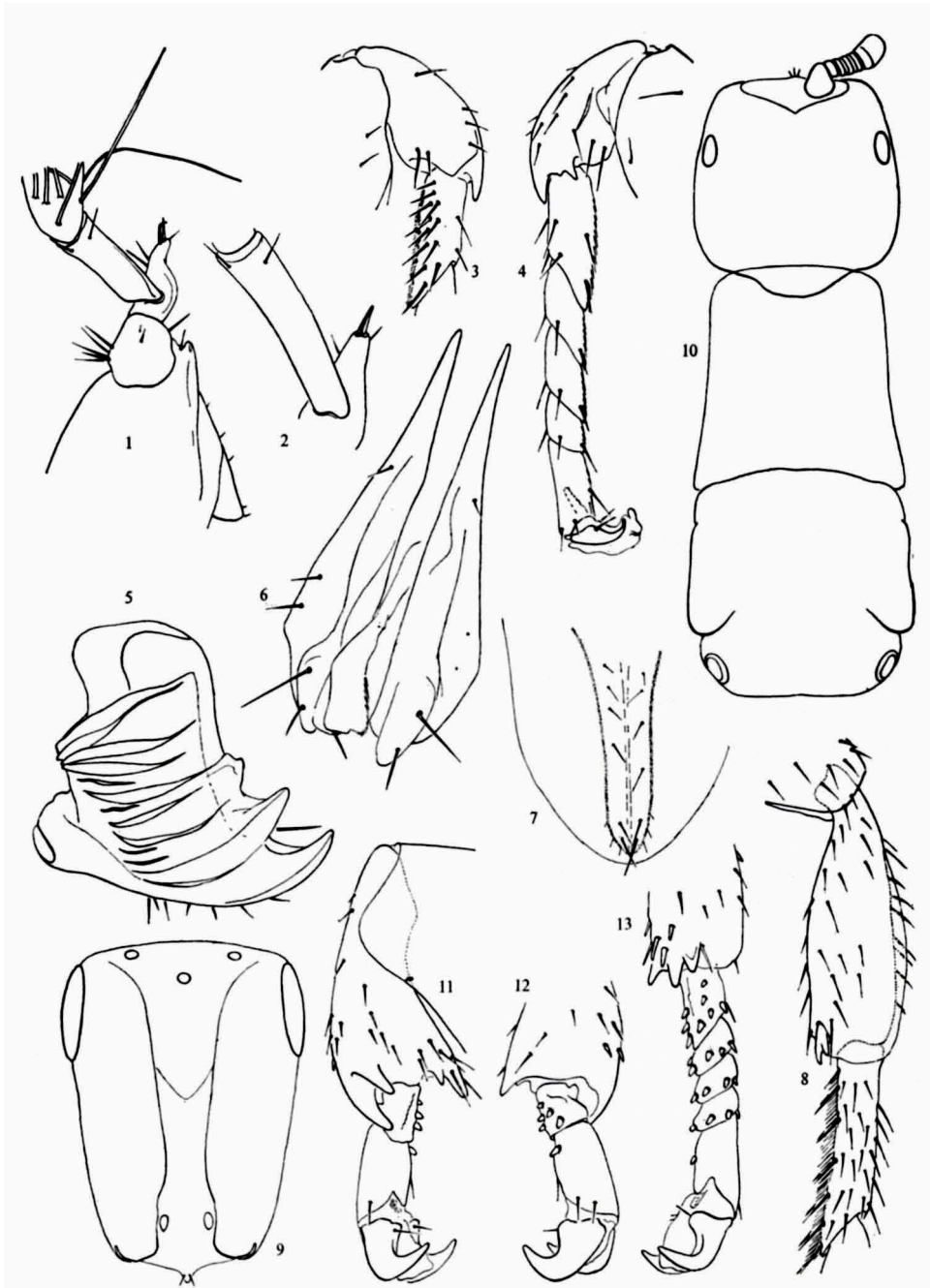
Allotriozoon heterandromorphum Grandi, 1916: 191, 201-206, figs. 21-23 (descr. ♀, ♂, Senegal, Dakar, viii.1912; Guinea, Konakry, xi.1912, ex *Ficus Vogeli*); Joseph, 1959: 32 (♀, Guinea, Mts. Nimba, x.1951, Berlese's Apparatus); Wiebes, 1969b: 456 (♀, Ivory Coast, Bingerville, several data in 1961-1964, at light).

Blastophaga wanei Risbec, 1951a: 385-386, fig. 172d, e (descr. ♂, Senegal, M'Bambey, ex *Ficus gnaphalocarpa*); Wiebes, 1969b: 450 (synonym of *Allotriozoon heterandromorphum* Grandi).

Blastophaga dakarensis Risbec, 1954a: 536-538, fig. 2 (descr. ♀, Senegal, Dakar, 29.vii.1952, at light; Wiebes, 1961: 236 (in subgenus *Elisabethiella* Grandi); Wiebes, 1969b: 450 (synonym of *Allotriozoon heterandromorphum* Grandi).

Material. — 70 ♂, "*Blastophaga wanei* Risbec, ♂, ex *Ficus gnaphalocarpa*, Bam-bey"; slide-mounted (MP). These are the males from the series recorded by Risbec (1951a); one, remounted on a separate slide, is now designated lectotype of *Blastophaga wanei* Risbec.

16 ♀ and fragments, originally on one slide with the females of *Blastophaga wanei* now referred to *Ceratosolen longicornis* Joseph, labelled: "*Blastophaga wanei* R. gde sp. yeux longs, et *B. dakarensis* R. yeux courts, M'Bambey"; remounted on two slides



Figs. 1, 3-13. *Agaon b. bekiliensis* (Risbec). 1, 3-9, female (lectotype): 1, antenna, detail in axial view; 3, fore tibia and metatarsus, axial aspect; 4, fore tibia and tarsus, antiaxial aspect; 5, mandible, ventral aspect; 6, labium and maxillae, ventral aspect; 7, hypopygium, ventral aspect; 8, hind tibia and metatarsus, antiaxial aspect; 9, outline of head. 10-13, male: 10, outline of head and thorax; 11-12, fore tibia and tarsus, 11, antiaxial aspect, 12, axial aspect; 13, hind tibia and tarsus, antiaxial aspect.

Fig. 2. *Agaon bekiliensis bispinosum* Wiebes (paratype), detail of female antenna in axial aspect.

Figs. 1-4, 8, 11-13, $\times 155$; 5, 6, $\times 255$; 7, 9, 10, $\times 65$.

(MP.). Also a long series of females with label "*Blastophaga waneï* R. gde sp. yeux longs, et *B. dakarensis* R. yeux courts, ex figues, Dakar"; on one slide also containing a few females of *Ceratosolen longicornis* Joseph (MP). What Risbec identified with *B. waneï*, is now referred to *Ceratosolen longicornis*; Risbec's *B. dakarensis* is the female of the male *B. waneï*.

3 ♀, "*Blastophaga dakarensis* Risbec", "Dakar, Senegal, 29.viii.52, à la lampe", "Ifan 1952, 29.viii.52, A. Villiers"; one on a pin ("type"), and two slide-mounted (MP). Although in Risbec's publication the date is given as 29.vii instead of 29.viii, these females evidently form part of the type series of *Blastophaga dakarensis* Risbec.

1 ♀, "*Blastophaga dakarensis* Risbec", "[illegible]", "M'Bambey"; slide-mounted (MP).

As the females of *Blastophaga waneï* Risbec (1951a) are conspecific with *Ceratosolen longicornis* Joseph (1959), the name last-mentioned is threatened by the older name given by Risbec. In order to maintain Joseph's name for the taxon he described properly and which is quite recognizable, I designate one of the males rather than a female, lectotype of *B. waneï*. This renders *Blastophaga waneï* Risbec a junior synonym of *Allotriozoon heterandromorphum* Grandi (1916).

***Ceratosolen arabicus* Mayr and *C. longicornis* Joseph**

(figs. 14-15)

The differences between *Ceratosolen arabicus* Mayr from East Africa, and *C. longicornis* Joseph from West Africa, are slight. I find one differential character in the length of the axial spur of the female hind tibia relative to the length of the metatarsus (figs. 14, 15): this ratio is approximately 1 : 2 in East African specimens, and almost 1 : 4 in West African examples (including both Risbec's females of *Blastophaga waneï* and the one female recorded by Wiebes, 1969a, as *Ceratosolen* cf. *arabicus*). The female of *Blastophaga waneï* recorded from Kenya (Risbec, 1955) belongs to *Ceratosolen arabicus* Mayr.

I regard *C. arabicus* and *C. longicornis* as subspecies of one species.

***Ceratosolen a. arabicus* Mayr**

Ceratosolen arabicus; Wiebes, 1964: 188 (full bibliography); Wiebes, 1968a: 307-310, fig. 1 (distribution).

Blastophaga waneï; Risbec, 1955: 175 (♀, Kenya, env. de Lokitanyalla, Mission de l'Omo).

Material. — 1 ♀, "Kenya. Env. de Lokitanyalla. West. Suk. Turkana. 1200 m", "Museum de Paris. Mission de l'Omo. C. Arambourg, P. A. Chapuis & R. Jeannel. 1932-33", "*Blastophaga waneï* Risbec"; pinned (MP).

***Ceratosolen arabicus longicornis* Joseph**

Ceratosolen longicornis Joseph, 1959: 34-36, figs. 3 (1-5) (descr. ♀, Guinea, Mts. Nimba, x.1951, Berlese's Apparatus); Wiebes, 1969b: 460-461 (Ivory Coast, Binger-ville, several data in 1961-1964, at light; compared with *Ceratosolen arabicus* Mayr).

Blastophaga waneï; Risbec, 1951a: 383-385, fig. 172a-c, f (descr. ♀, Senegal, M'Bambey, ex *Ficus gnaphalocarpa*); Risbec, 1954a, fig. 3d (♀, wing veins); Wiebes, 1961: 236 (in subgenus *Elisabethiella* Grandi); Wiebes, 1969b: 451 (= *Ceratosolen longicornis* Joseph).

Ceratosolen cf. *arabicus*; Wiebes, 1969a: 402 (♀, Senegal, Badi, 17.i.1965, ex *Ficus gnaphalocarpa*); Wiebes, 1969b: 451 (= *Ceratosolen longicornis* Joseph).

Material. — 1 ♀, "*Ceratosolen longicornis* Joseph, holotype ♀, Reg. no. 56"; slide-mounted (coll. Joseph).

4 ♀ and some fragments, originally on one slide with the females of *Blastophaga dakarensis* Risbec (now referred to *Allotriozoon heterandromorphum* Grandi), labelled: "*Blastophaga waneï* R. gde sp. yeux longs, et *B. dakarensis* R. yeux courts, M'Bambey"; remounted (MP). Also a few females on a slide together with *Allotriozoon heterandromorphum* Grandi, labelled: "*Blastophaga waneï* R. gde sp. yeux longs, et *B. dakarensis* R. yeux courts, ex figues, Dakar" (MP). See remark with the second item under *Allotriozoon heterandromorphum*.

6 ♀, "*Blastophaga waneï* Risbec, Bambey"; slide-mounted (MP).

2 ♀, "ex fruits *Ficus gnaphalocarpa*", "*Sycophaga silvestrii* Grandi" (MP). Five females on this slide do belong to *Sycophaga*, two are *C. longicornis*.

***Ceratosolen namorokensis* Risbec**

(figs. 16-22)

Ceratosolen namorokensis Risbec, 1956: 186-188, fig. 8a, b (descr. ♀, Madagascar, Namoroka, ix.1952; Bekily, iii.1930, ex *Ficus* spec.; Bekily, iii.1952, ex *Ficus* spec.).

Material. — 1 ♀, "*Ceratosolen namorekæ* [sic] Risbec", "Namoroka, ix.52 (R.P.)", "Institut Scientifique, Madagascar"; remounted (ORSTOM). This specimen is now designated lectotype.

Description. — Head (fig. 19) slightly longer than wide across the compound eyes. The longitudinal diameter of the compound eyes longer than the cheek (6: 5). Three ocelli. Antenna (fig. 18¹) consisting of ten segments; the pedicel with approximately 65 axial spines; the length ratio of the flagellar segments as 2: 4: 7: 6: 4: 4: 11. Mouth-parts (figs. 21, 22): the maxilla without bacilliform process, the apex with three long setae; the mandible with five long ridges; the appendage with four lamellae.

Thorax. Submarginal, marginal, stigmal, and postmarginal veins of the fore wing approximately in ratio 22: 9: 6: 10. Fore leg (fig. 17): the tibial comb consisting of four teeth; the tarsal segments approximately in ratio 24: 6: 5: 4: 10. Hind leg (fig. 16): the tibia shorter than the metatarsus (7: 9); the tibial teeth short, the axial tooth not quite one third of the length of the metatarsus; the tarsal segments approximately in ratio 19: 7: 6: 5: 6.

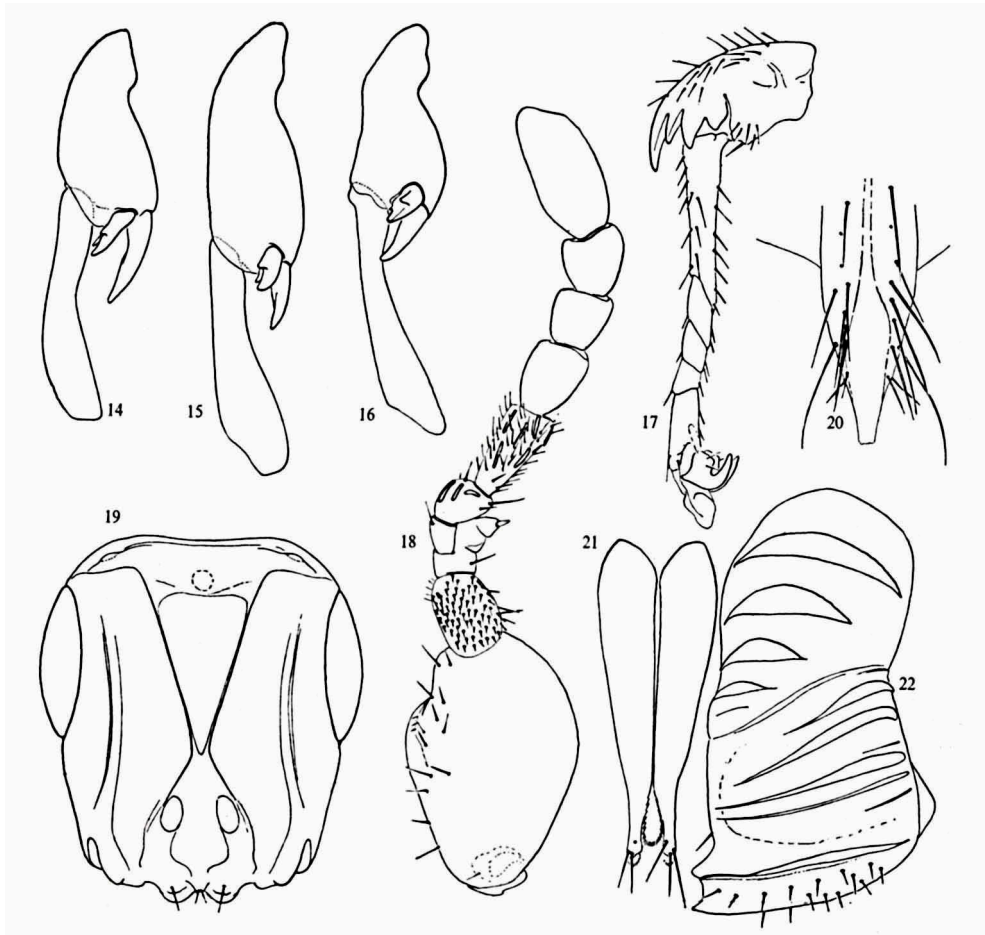
Gaster. Hypopygium, fig. 20. Ovipositor one third longer than the gaster.

1) Some of the segments have collapsed, and they cannot be properly figured without dissection.

Ceratosolen flabellatus Grandi

Ceratosolen flabellatus Grandi, 1916: 150, 152, 153-160, figs. 3-5 (key, descr. ♀, ♂, Guinea, Kakoulima, 31.x.1912, ex *Ficus* spec.); Wiebes, 1969b: 460 (♀, ♂, Ivory Coast, Soubre, 15.xi.1961, ex *Ficus* spec.).

Ceratosolen dagatiguyi Risbec, 1951b: 1126-1128, fig. 5 (descr. ♀, Ivory Coast, Abengourou, ex *Ficus* spec.); Wiebes, 1969b: 451 (synonym of *Ceratosolen flabellatus* Grandi).



Figs. 14-15. Female hind tibia and metatarsus, anti-axial aspect. 14, *Ceratosolen arabicus* Mayr, specimen from Kenya (lake Magadi, leg. J. Galil, 20.ix.1964); 15, *Ceratosolen longicornis* Joseph, holotype.

Figs. 16-22. *Ceratosolen namorokensis* Risbec, female lectotype. 16, hind tibia and metatarsus, anti-axial aspect; 17, fore tibia and tarsus, anti-axial aspect; 18, antenna, axial aspect; 19, outline of head; 20, hypopygium, ventral aspect; 21, labium and maxillae, ventral aspect; 22, mandible, ventral aspect.

Figs. 14-18, $\times 100$; 19, $\times 65$; 20-22, $\times 155$.

Material: — 1 ♀, "*Ceratosolen dagatiguyi* Risb. Abengourou. Dagatiguy. 455e"; remounted (MP). Holotype.

I cannot distinguish Risbec's specimen from *C. flabellatus*. The one differential character mentioned in the description by Risbec viz., the number of lamellae on the mandibular appendage, appears to be incorrect. There are five lamellae (not counting the apical ridge) in both *C. flabellatus* and the holotype of *Ceratosolen dagatiguyi* Risbec.

TABLE 1

Agaonidae described or recorded by J. Risbec

<i>Pleistodontes bekiliensis</i> Risbec, 1956	=	<i>Agaon b. bekiliensis</i> (Risbec)
<i>Ceratosolen dagatiguyi</i> Risbec, 1951b	=	<i>Ceratosolen flabellatus</i> Grandi
<i>Blastophaga dakarensis</i> Risbec, 1954a	=	<i>Allotriozoon heterandromorphum</i> Grandi
<i>Ceratosolen namorokensis</i> Risbec, 1956	=	<i>Ceratosolen namorokensis</i> Risbec
<i>Agaon paradoxum</i> ; Risbec, 1954b	=	<i>Agaon paradoxum</i> Dalman
<i>Blastophaga Villiersi</i> Risbec, 1954a	=	<i>Agaon paradoxum</i> Dalman
<i>Blastophaga wanei</i> Risbec, 1951a (♂)	=	<i>Allotriozoon heterandromorphum</i> Grandi
<i>Blastophaga wanei</i> Risbec, 1951a (♀)	=	<i>Ceratosolen arabicus longicornis</i> Joseph
<i>Blastophaga wanei</i> Risbec, 1955	=	<i>Ceratosolen a. arabicus</i> Mayer

TABLE 2

Sycophaginae described or recorded by J. Risbec

<i>Otitesella africana</i> ; Risbec, 1956	=	? Sycophagini (not seen)
<i>Apocryptophagus bambeyi</i> Risbec, 1951a	=	<i>Apocrypta bambeyi</i> (Risbec)
<i>Apocryptophagus bambeyi</i> ; Risbec, 1956	=	cf. <i>Apocrypta</i> (not seen)
<i>Goniogaster bambeyi</i> Risbec, 1951a	=	<i>Sycosapteridea bambeyi</i> (Risbec)
<i>Colotrechnus cadenati</i> Risbec, 1951a	=	<i>Otitesella cadenati</i> (Risbec) Risbec, 1956 (not seen)
<i>Goniogaster cadenati</i> Risbec, 1951a (♀)	=	<i>Sycosapter cadenati</i> (Risbec) (not seen)
<i>Goniogaster cadenati</i> ; Risbec, 1951a (♂)	=	? <i>Sycoryctes</i> spec. (not seen)
<i>Goniogaster cadenati</i> ; Risbec, 1951b (♀)	=	<i>Sycosapteridea</i> spec.
<i>Goniogaster cadenati</i> ; Risbec, 1951b (♂)	=	? <i>Sycosapter</i> spec.
<i>Apocryptophagus dagatiguyi</i> Risbec, 1951a	=	<i>Sycoryctes dagatiguyi</i> (Risbec)
<i>Sycophaga depressa</i> Risbec, 1956	=	<i>Sycophaga depressa</i> Risbec (not seen)
<i>Otitesella gnaphalocarphae</i> Risbec, 1951a (♂)	=	<i>Otitesella gnaphalocarphae</i> Risbec
<i>Otitesella gnaphalocarphae</i> ; Risbec, 1951a (♀), 1	=	? <i>Idarnes</i> spec.
<i>Otitesella gnaphalocarphae</i> ; Risbec, 1951a (♀), 2	=	? <i>Eukoebelea</i> spec. and ? <i>Idarnes</i> spec.
<i>Otitesella gnaphalocarphae</i> ; Risbec, 1951a (♀), 3	=	<i>Parakoebela</i> spec.
<i>Otitesella gnaphalocarphae</i> ; Risbec, 1951a (♀), 4	=	<i>Parakoebela</i> spec.
<i>Seres longicephala</i> Risbec, 1951a	=	<i>Seres longicephalus</i> Risbec
<i>Apocrypta minima</i> Risbec, 1951a	=	<i>Apocrypta minima</i> Risbec
<i>Sycobiella monstrosa</i> ; Risbec, 1951a	=	<i>Philosycus monstrosus</i> (Grandi)
<i>Idarnes (Koebelea) nigra</i> Risbec, 1951b (♀)	=	<i>Sycosapter niger</i> (Risbec)
<i>Idarnes (Koebelea) nigra</i> ; Risbec, 1951b (♂)	=	? (<i>Apocrypta</i> spec.?)
<i>Sycoryctes senegalensis</i> Risbec, 1951a	=	<i>Sycosapter senegalensis</i> (Risbec)
<i>Sycophaga silvestrii</i> ; Risbec, 1951a (♀)	=	<i>Sycophaga valentinae</i> Grandi (Grandi, 1956)
<i>Sycophaga silvestrii</i> ; Risbec, 1951a (♂)	=	Sycophagini
<i>Grandimyia tananarivensis</i> Risbec, 1956	=	<i>Sycosapter tananarivensis</i> (Risbec)

NOTES ON THE SYCOPHAGINE TORYMIDAE

In several papers Risbec (1951a, b; 1956, 1957) described or recorded Torymidae of the subfamily Sycophaginae, reared from figs. Specimens of most of the species are present in the Paris Museum.

Our present knowledge of the African and Malagasy Torymidae is such that certain identifications cannot be made of this inadequately preserved material. The following notes and remarks may be of help to future students of the group. A general discussion of some of the tribes precedes a list of the species described or recorded by Risbec, with notes on the material studied (summary in table 2).

Sycophagini. — The generic classification of the Sycophagini is not at all satisfactory; see Wiebes (1966a: 155-156) for remarks on the Indo-Australian genera, and Wiebes (1968a: 310-311) for the African genera. Risbec's species of *Sycophaga* Westwood appear to be correctly placed, but his "*Idarnes* (= *Koebelea*)" belongs to the Sycoryctini. The series of females of his *Otitesella gnaphalocarphae* form a mixture of several Sycophagini, comparable to the taxa described by Wiebes (1968a). The males of *Otitesella gnaphalocarphae*, however, do belong to *Otitesella* Westwood.

Apocryptini. — This tribe contains only one genus, viz. *Apocrypta* Coquerel, in which Risbec described the species *A. minima*. *Apocrypta* is the male of what Mayr (1885: 240-241) described as *Goniogaster*. Risbec's species of *Goniogaster*, however, belong to the Sycoryctini. Coquerel (1855: 426-427, pl. 10 fig. 4) described *Chalcis? explorator*, which was made by Ashmead (1904: 238) the type species of a new genus *Apocryptophagus*. One of the species described by Risbec, viz. *Apocryptophagus bambeyi*, belongs to *Apocrypta*; *A. dagatiguyi* Risbec belongs to the tribe Sycoryctini.

Sycoryctini. — Here belong "*Idarnes* (= *Koebelea*)" *nigra*, *Apocryptophagus dagatiguyi*, and the species of *Goniogaster*, mentioned above, as well as *Sycoryctes senegalensis* Risbec. Most probably, also *Grandimyia* Risbec belongs here, as a synonym of *Sycoscapter* Saunders. The Indo-Australian species were classified into four genera (Wiebes, 1966b: 173, key), three of which may be recognized in the African material.

Otitesellini. — For *Otitesella gnaphalocarphae* Risbec, see above under Sycophagini; *Otitesella africana* sensu Risbec too, of which females only were recorded, may belong in the Sycophagini. Judging from the figure (Risbec, 1951a: fig. 159b, c), the identification of *Sycobiella monstrosa* appears to be correct. *Colotrechnus cadenati* Risbec may belong to the genus *Otitesella* Westwood; see Risbec (1957: 264).

Sycoecini. — Risbec described one species in the genus *Seres* Waterston, which appears to be correctly placed (Wiebes, 1961: 234).

List of species described or recorded by Risbec

Otitesella africana Grandi (Risbec, 1956: 148). — Recorded from Madagascar, viz. Bekily (iii.1930, A. Seyrig): 33 ♀; Imerina (1902, Grandidier): 7 ♀; and Antsingy (vii.1949, R. Paulian): 5 ♀. I have seen no material, but suspect the specimens to belong to several genera of the Sycophagini.

Apocryptophagus bambeyi Risbec (1951a: 318-321, fig. 154a, b; 1956: 148). — Described on 8 ♀ from M'Bambey (Senegal), three of which were reared from *Ficus gnaphalocarpa*¹⁾; and later recorded from Madagascar: Bekily (iii.1930, A. Seyrig): 14 ♀. I have seen 3 ♀ on a slide "*Apocryptophagus bambeyi* Risb., ex fruit de *Ficus gnaphalocarpa*" and 4 ♀ on a slide "ex figues Bambey", all of which belong to *Apocrypta* Coquerel.

Goniogaster bambeyi Risbec (1951a: 328-329). — Described on 5 ♀ from M'Bambey (Senegal), ex figs of *F. gnaphalocarpa*, leg. J. Risbec. I have seen these specimens on a slide "*Goniogaster* [*Sycophaga*, deleted] *bambeyi* Risbec, ex fruits de *Ficus*, Bambey"; they belong to *Sycosapteridea* Ashmead.

Colotrechnus cadenati Risbec (1951a: 287-289, fig. 146; 1957: 264). — I have seen no material of this species, originally described on 7 ♀ from Dakar (Senegal), ex fruits of *Ficus* (J. Cadenat) and 92 additional, smaller females of the same provenance. Risbec (1957) himself rectified the generic position, and placed the species in the genus *Otitesella* Westwood.

Goniogaster cadenati Risbec (1951a: 325-329, figs. 156-157; 1951b: 1126). — Originally described on 6 ♀ and 4 ♂ from Dakar (Senegal), ex *Ficus* spec. (J. Cadenat), and later recorded (as *Goniogaster c.*) from Abengourou (Ivory Coast): 2 ♀ 1 ♂, leg. F. Dagatiguy ex *Ficus* spec. near *gnaphalocarpa*. I have seen 2 ♀ on a slide labelled "*Goniogaster* [*Sycophaga* deleted] *cadenati* Risbec, Abengourou, 451 c [?], Dagatiguy, ex *Ficus*", which appear to belong to *Sycosapteridea* Ashmead.

It should be noted that, judging from the description (Risbec, 1951a), the specimens from Dakar do not seem to belong to *Sycosapteridea*. The female, the hyaline fore wings of which have a series of long setae in the margino-stigmal angle, I would classify with *Sycosapter* Saunders. The description of the male reminds one of a species of *Sycoryctes* Mayr. The identification of the males I have seen from Abengourou, viz. four winged specimens with large hind metatarsi, remains uncertain; they may belong to *Sycosapter*.

Apocryptophagus dagatiguyi Risbec (1951a: 331-332). — Described from Abengourou (Ivory Coast), ex *Ficus* spec. (F. Dagatiguy): 11 ♀. I found

1) Risbec's host records I consider not reliable; see Wiebes (1969a: 401-402).

these females on a slide with this locality label, although named "*Gonio-gaster* [*Sycophaga* deleted] *dagatiguyi* Risbec". They probably belong to *Sycoryctes* Mayr.

Sycophaga depressa Risbec (1956: 189-191, fig. 9). — This species was described from Madagascar, viz. Ambilobé (iv.1951, R. Paulian): 25 ♀; Bekily (iii.1930, A. Seyrig): 11 ♀; Imerina (1902, R. Decary): 10 ♀. I did not see any material, but judging from Risbec's description, the generic identification is correct.

Otitesella gnaphalocarphae Risbec (1951a: 332-335, figs. 158, 159a). — The females, all from M'Bambey (Senegal), were listed by Risbec (1951a: 333) as follows:

1. "Récoltés sur tronc de *Ficus* le 3-4-1947, 11 ♀". There is one slide with 15 ♀ (not 11) labelled "sur tronc 3.4.47"; all are long-tailed Sycophagini, comparable to what I described as *Idarnes gracile* (Wiebes, 1968a: 318-319, figs. 19-21, pl. 1 fig. 3), although lighter in colour.

2. "Obtenus de Figues (*F. gnaphalocarpha*), 24 ♀". These I found on three slides, labelled "*Otitesella gnaphalocarphae* Risbec" only (4 ♀, comparable to what I classified with *Eukoebelea* Ashmead), and "*Otitesella gnaphalocarphae* Risbec, ex *Ficus*, Bambey" (3 ♀ and 17 ♀, mounted separately, respectively comparable to *Eukoebelea* Ashmead and *Idarnes* Walker).

3. "Ex Figues, 10 ♀ (taille 2.5 à 2.7 mm)". Present on one slide "no. 3, fruit *Ficus*, Bambey, *Otitesella gnaphalocarphae* Risbec, 29.3.49 [?]" ; probably belonging to *Parakoebelea* Joseph.

4. "Récolté sur tronc de *Ficus*, 4-4-1947. Grand exemplaire . . ." ; probably the female of *Parakoebelea* Joseph present in one of the slides with an illegible label.

Risbec also described the male, on 37 specimens from M'Bambey (Senegal), ex *Ficus gnaphalocarpha* (leg. A. Wane). There is one slide with a great number of *Otitesella* males (next to 1 ♂ *Ceratosolen* spec., which probably is from another sample, and 1 ♀ of *Allotrioazon*), labelled "♂, [illegible], *Otitesella gnaphalocarphae* Risbec". These specimens do belong to *Otitesella* Westwood and, in order to reduce nomenclatorial confusion, one of these is now selected lectotype of *Otitesella gnaphalocarphae* Risbec. Thus, the female samples remain unnamed.

Seres longicephala Risbec (1951a: 381-383, fig. 171). — I have seen a slide with 5 ♀ of this species, evidently the original specimens from M'Bambey (Senegal), ex fruits of *Ficus gnaphalocarpha* (leg. J. Risbec). Risbec's species does belong in *Seres* Waterston; the name should read *Seres longicephalus* Risbec.

Apocrypta minima Risbec (1951a: 389-390, fig. 174). — Described from

M'Bambey (Senegal), "un seul exemplaire en mauvais état", which is still present in one of the slides. It is recognizable as a species of *Apocrypta* Coquerel.

Sycobiella monstruosa Grandi (Risbec, 1951a: 335-336, fig. 159b, c). — Dakar (Senegal), ex fruits of *Ficus* spec. (J. Cadenat), 4 ♂ and 3 fragmented specimens: none studied by me, but evidently correctly identified, although the name should now be *Philosycus monstruosus* (Grandi).

Idarnes (= *Koebelea*) *nigra* Risbec (1951b: 1123-1125, fig. 4). — Described on 14 ♀ and 2 ♂ from Abengourou (Ivory Coast), ex *Ficus* spec. near *gnaphalocarpa*, leg. F. Dagatiguy. There are two slides, one with 13 ♀ and one with 2 ♂. The females are probably *Sycosapter* Saunders; the males, the figure of which (Risbec, 1951b, fig. 4d) reminds one of *Apocrypta* Coquerel, I am unable to identify.

Sycoryctes senegalensis Risbec (1951a: 329-331). — Described on 4 ♀ from Dakar (Senegal), ex *Ficus* spec. (J. Cadenat); mounted on one slide with name label "*Goniogaster* [*Sycophaga* deleted] *senegalensis* Risbec". Probably belonging to *Sycosapter* Saunders.

Sycophaga silvestrii Grandi (Risbec, 1951a: 386-389, fig. 173). — M'Bambey (Senegal); "ex fruits de *Ficus gnaphalocarpa*, espèce très commune, abondante dans une même figue (J. Risbec et A. Wane)". There are several slides that could contain this material. One bears a label "ex *Ficus sycomorus*, Bambey, *Sycophaga silvestrii* Grandi" (many ♀); another: "*Sycophaga silvestrii* Grandi, ex figues, Bambey" (11 ♀); another still: "ex fruits *Ficus gnaphalocarpa*, *Sycophaga silvestrii* Grandi" (7 ♀, this slide also contains 2 ♀ of *Ceratosolen arabicus longicornis*). Four males are mounted on a slide labelled "ex Figue, Dakar, Cadenat, *Sycophaga silvestrii* Grandi"; they may belong to *Sycophaga* Westwood or to any other genus of the Sycophagini (see Wiebes, 1968a: 315). The females do belong to *Sycophaga*; Grandi (1952: 34) suggested that they may be identical with *S. valentinae* Grandi rather than with *S. silvestrii*.

Grandimyia tananarivensis Risbec (1956: 148-149, genus; 149-151, fig. 1, species). — Described on one female from Tananarive (Madagascar), parc de Tsimbazaza (R. Paulian). There is one ♀ on a slide labelled "Tananarive, Tsimbazaza, *Grandimyia tananarivensis* Risbec, type", which seems to belong to *Sycosapter* Saunders.

The probable host relationships of the species

Judging from the locality data given by Risbec, the material — other than the examples caught at light, or collected separately — may belong to several samples.

M'BAMBEY, SENEGAL.

I. *Allotriozoon heterandromorphum* Grandi (the ♂ of *Blastophaga waneï* Risbec, 1951a: ex fruits de *Ficus gnaphalocarpa*, J. Risbec; ♀, *Blastophaga dakarensis*, data not published before).

Seres longicephalus Risbec (1951a: ex fruits de *Ficus gnaphalocarpa*, J. Risbec) seems to belong to the same sample as *Blastophaga waneï*, mentioned above. This, then, would be the first indication of a species of *Seres* being associated with one of *Allotriozoon*; other species of *Seres* are known to be symbionts of *Agaon*.

II. The males of *Otitesella gnaphalocarphae* Risbec (1951a: dans les fruits de *Ficus gnaphalocarpa*, A. Wane), although they may be symbionts of *Allotriozoon heterandromorphum*, evidently are not from the same sample as *Blastophaga waneï*. They should be compared with *Otitesella africana* Grandi.

Sycosapteridea bambeyi (*Goniogaster b.* Risbec, 1951a: obtenu des figues de *F. gnaphalocarpa*, J. Risbec) may have come from either of the samples here numbered I and II. It should be compared with the species of *Sycosapteridea* recorded from *Ficus gnaphalocarpa* by Wiebes (1969a: 402).

III. *Ceratosolen arabicus longicornis* Joseph (the ♀ of *Blastophaga waneï* Risbec, 1951a: ex fruits de *Ficus gnaphalocarpa*, J. Risbec).

Sycophaga valentinae Grandi (*S. silvestrii* sensu Risbec, 1951a: ex fruits de *Ficus gnaphalocarpa*, espèce très commune, abondante dans une même figue, J. Risbec et A. Wane). It is extremely unlikely that *Sycophaga* should be a symbiont of *Allotriozoon* (see above, under I), or that *Seres* should come from the same sample as *Ceratosolen*. It is also improbable that the *Otitesella*, mentioned above, was reared from the same fig as a species of *Sycophaga*. The association of *Sycophaga* and *Ceratosolen* is quite regular.

Other Sycophagini, all recorded by Risbec (1951a) as females of *Otitesella gnaphalocarphae* (1, récoltés sur tronc de *Ficus* le 3-4-1947; 2, obtenus de figues (*F. gnaphalocarpa*); 3, ex figues; 4, récoltés sur tronc de *Ficus*, 4-4-1947), are probable symbionts of *Ceratosolen*, although the locality data show that some were not reared from the same receptacles as *C. a. longicornis*, mentioned above.

Apocrypta minima Risbec (1951a) could well come from this sample, as well as:

Apocrypta bambeyi (*Apocryptophagus b.* Risbec, 1951a: partly "ex figues de *Ficus gnaphalocarpa*").

DAKAR, SENEGAL.

Several species were recorded from Dakar (obtenus de ("des", "ex") fruits de *Ficus* sp., J. Cadenat). While some of these probably are symbionts of *Agaon paradoxum* Dalman (by Risbec only recorded from light catches), one of the unpublished samples with *Sycophaga* males show that some *Sycomor* fig was also collected.

IV. *Philosycus monstruosus* (*Sycobiella monstruosa* Grandi; Risbec, 1951a), and

Otitesella cadenati (*Colotrechnus* c. Risbec, 1951a) may have come from an *Agaon* sample.

V. The provenance of two species of *Sycoscapter*, viz.

Sycoscapter cadenati, ♀ (*Goniogaster* c. Risbec, 1951a), and

Sycoscapter senegalensis (*Sycoryctes* s. Risbec, 1951a) is not clear. The ♂ of *Goniogaster cadenati* may belong to *Sycoryctes*.

VI. The *Sycophagini* males (*Sycophaga silvestrii* ♂, not published by Risbec) probably are from a *Ceratosolen* sample.

ABENGOUROU, IVORY COAST.

VII. *Ceratosolen flabellatus* Grandi (*C. dagatiguyi* Risbec, 1951b: issus de fruits de *Ficus* sp., F. Dagatiguy). Probable symbionts are:

Sycoscapteridea spec., ♀, and ? *Sycoscapter* spec. ♂ (*Goniogaster cadenati*; Risbec, 1951b: "Abengourou, Fanny Dagatiguy").

Sycoryctes dagatiguyi (*Apocryptophagus* d. Risbec, 1951a: obtenu des fruits de *Ficus* sp., F. Dagatiguy).

Sycoscapter niger, ♀ (*Idarnes* (*Koebelea*) *nigra* Risbec, 1951b: exemplaires récoltés dans les fruits de *Ficus* sp. (espèce voisine de *gnaphalocarpa*), F. Dagatiguy). Risbec's figure of the ♂ looks like a species of *Apocrypta*; it should be compared with *A. guineensis* Grandi.

MADAGASCAR.

Ceratosolen namorokensis Risbec (1956) was recorded from Namoroka, ix.1952, R. Paulian; Bekily, iii.1930, trouvées dans les figues (petite espèce), A. Seyrig; and Bekily, iii.1952¹⁾, des figues (grande espèce), A. Seyrig. My identification of the species is based on the specimen from Namoroka only.

In his records of *Otitesella africana*, which actually may refer to several

1) 1930?

species of Sycophagini, Risbec indicated that the *Ficus* with large fruits would belong to a distinct species. Risbec's *Ceratosolen namorokensis*, then, may consist of at least two different species of *Ceratosolen*, which are listed below with their probable symbionts²).

VIII. *Ceratosolen* spec. (Bekily, iii.1930, trouvées dans les figues (petite espèce), A. Seyrig).

Sycophagini (*Otitella africana* Grandi; Risbec, 1956: Bekily, iii.1930, des fruits (petite espèce) d'une figuier indéterminé).

IX. *Ceratosolen* spec. (Bekily, iii.1952¹), des figues (grande espèce), A. Seyrig).

Apocrypta spec. (*Apocryptophagus bambeyi*; Risbec, 1956: Bekily, iii.1930, obtenues de la grande espèce de figues, A. Seyrig).

Sycophagini (*Otitella africana* Grandi; Risbec, 1956: Bekily, iii.1930, provenant des fruits (grande figues), A. Seyrig).

X. Females of *Sycophaga depressa* Risbec (1956) were recorded from several localities, including Bekily (iii.1930, A. Seyrig). They may belong to either of the samples mentioned above.

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2) Three species of *Ceratosolen* were described from Madagascar and neighbouring islands, viz. *C. coecus* (Coquerel), *C. emmeresi* Grandi, and *C. namorokensis* Risbec. Sycophaginae from this region are: *Apocrypta paradoxa* Coquerel, *Sycophaga perplexa* (Coquerel), *Sycophaga depressa* Risbec, *Apocryptophagus explorator* (Coquerel) (probably, tribe Sycoryctini), and *Sycosapter tananarivensis* (Risbec).

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