

The Gall-flies (Cynipidae) of Iceland. A Revision.

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Some time ago I received from the Zoological Museum, Copenhagen, a small collection of Cynipidae from Iceland, some of them dried, others preserved in alcohol. Since this material gave rise to doubt as to the correctness of earlier determinations of gall-flies, I subjected all the Icelandic finds of the family to a revision, the results of which will be given below.

The earliest known *Cynipidae* from Iceland were those collected by Dr. O. Staudinger in 1856, namely two species treated by J. Fr. Ruthe in Stett. Ent. Zeitschr. 1859, p. 310, under the name of *Xystus obscuratus* Hart. and *Eucoila simulatrix* Ruthe. On his journeys to Iceland in 1926 and 1929, Dr. Carl H. Lindroth collected the cynipid material worked up by Wolter Hellén in 1931 (2) and comprising 13 species. The two species found by Staudinger are also represented in this material, one under the name of *Alloxysta Ruthei* nov. sp. Hellén (*Xystus obscuratus* Ruthe nec Hart.), the other under the name given it by Ruthe, *Eucoila simulatrix* Ruthe.

These 13 species are: *Alloxysta macrophadna* Hart., *A. Ruthei* nov. sp. Hellén, *A. islandica* nov. sp. Hellén, *A. marshalliana* Kieff., *A. brachyptera* Hart., *Eucoila cubitalis* Hart., *E. ciliaris* Zett., *E. rufipes* C. G. Thoms., *E. simulatrix* Ruthe, *E. diaphana* Hart., *Kleidotoma tetratoma*

C. G. Thoms., *Lonchidia clavicornis* C. G. Thoms., and *Xyalaspis subulifera* C. G. Thoms.

Through the courtesy of fil. lic. Hans Lohmander, the head of the entomological section of the Museum of Natural History, Gothenburg, I had the opportunity to examine Lindroth's material. During my examination I found that some names had to be altered. Thus according to my view *Alloxysta Ruthei* is synonymous with *Allotria fuscipes* C. G. Thoms., while *Eucoila ciliaris* Zett., judging by the only specimen in the collection, belongs to the same species as the specimens identified as *E. diaphana* Hart., *Kleidotoma tetratoma* C. G. Thoms. = *K. pentatoma* C. G. Thoms., and *Xyalaspis subulifera* C. G. Thoms. = *Aegilips (Xyalaspis) rugicollis* H. Reinh. As regards *Alloxysta islandica*, erected on the basis of one single specimen, I only venture to say that I did not succeed in identifying it with certainty with any other described species of *Alloxysta*, although I think it quite possible that this, too, should be referred, as a variety, to *A. fuscipes*. However, this question can only be settled on the basis of a richer material. As pointed out by Hellén, *Eucoila simulatrix* is well characterised by the length ratio of antennal joints 3, 4, and 5, and it would seem difficult to identify it with any other *Eucoila* species described.

In the material from the Zoological Museum, Copenhagen, dealt with here, the following species are represented: *Alloxysta macrophadna* Hart., *A. fuscipes* C. G. Thoms., *A. marshalliana* Kieff., *Eucoila cubitalis* Hart., *E. rufipes* C. G. Thoms., *Kleidotoma pentatoma* C. G. Thoms., *Lonchidia clavicornis* C. G. Thoms., and *Aegilips (Xyalaspis) rugicollis* H. Reinh. Thus the material contains no species new to the fauna of the island.

Hence, as far as is known so far, the cynipid fauna of Iceland comprises the following 12 species: *Alloxysta macrophadna* Hart., *A. fuscipes* C. G. Thoms. (*Xystus ob-*

scuratus Ruthe nec Hart., *A. Ruthei* Hellén), *A. islandica* Hellén, *A. marshalliana* Kieff., *A. brachyptera* Hart., *Eucoila cubitalis* Hart., *E. rufipes* C. G. Thoms., *E. simulatrix* Ruthe, *E. diaphana* Hart., *Kleidotoma pentatoma* C. G. Thoms. (*tetratoma* Hellén nec C. G. Thoms.), *Lonchidia clavicornis* C. G. Thoms., *Aegilips (Xyalaspis) rugicollis* H. Reinh. (*subulifera* Hellén nec C. G. Thoms.).

Aegilips F. Walker.

Ae. (Xyalaspis) rugicollis H. Reinh. (*subulifera* Hellén nec C. G. Thoms.). A ♀ Egilsstaðir, East Iceland, $\frac{4}{8}$ 1931, swept in grass. Marie Jørgensen.

For the determination of this specimen I used Kieffer's description in "Cynipidae" (3), with which it agrees very well. In the specimen here treated the transverse striation of the mesonotum mentioned by Kieffer ("Mesonotum schwach quengerunzelt") is limited to the posterior third in front of the scutellum, while in the two specimens in Lindroth's collection from Iceland, labeled by Hellén *Xyalaspis subulifera* C. G. Thoms., a fainter striation is visible also anteriorly at the parapsidal furrows. However, the sculpture of the species of this genus, as of the species of the closely related genus *Anacharis* Dalm., varies rather considerably. In *Aegilips subulifera* C. G. Thoms., with which species I was able to make comparisons, having the opportunity to examine the very type specimen in the museum at Lund (with Dahlbom's locality label Lummelunda $\frac{31}{7}$ 1841), the mesonotum is throughout densely, irregularly transversely furrowed. Further, the scutellum in *subulifera*, according to the description as well as to the type specimen, is protruded into a long, almost uniformly broad tip, whose extreme distal part is somewhat downward bent, while in *rugicollis* the scutellum, according to Icelandic specimens and my numerous own specimens from Sweden, is evenly conically pointed.

The species *Ae. rugicollis* is recorded by Kieffer from Germany, and its subspecies, *subsessilis* Kieff., from France.

Lonchidia C. G. Thoms.

L. clavicornis C. G. Thoms. A ♀ Hvíteyrar, Skagafjörður. Grassland ¹⁹/₈ 1932. S. L. Tuxen.

Besides from Sweden, this species is recorded by Kieffer from England and by Hellén from Finland. It is not uncommon in the region of Örebro, Sweden.

Eucoila Westw.

E. rufipes C. G. Thoms. A ♀ Grindavík, Aug. 1931. 4 ♀♀ Seltjarnarnes near Reykjavík, July 1931. G. Gígja.

I have examined several specimens of this species in Thomson's own collection, and the specimens from Iceland agree entirely with these. It was only included in Kieffer's "Cynipidae" on the basis of Thomson's record of it from Lund in Scania, and apart from the specimens just mentioned, I have only seen the specimens collected by Lindroth in Iceland. Hellén records the species from Finland and the Kola Peninsula.

E. cubitalis Hart. A ♀ Húsavík ¹³/₇ 1933. Swept on the homefield. S. Heding. 4 ♀♀ Varmahlíð, Skagafjörður, July 1937. G. Gígja.

Apart from the above-mentioned ones, I have only seen specimens of this species from Iceland in Lindroth's collection. They all agree well with the description by Kieffer in "Cynipidae", where the species is recorded from England, Germany, and Austria. Hellén also records it from Finland and the Kola Peninsula.

Kleidotoma Westw.

K. pentatoma C. G. Thoms. (*tetratoma* Hellén nec C. G. Thoms.). A ♀ Reykjavík ²⁵/₆ 1929. Sv. G. Larsson. 9 ♀♀ Morsárdalur, Öraefi, Aug. 1932. G. Gígja.

This is the same species as was recorded by Hellén

(2) as *K. tetratoma* C. G. Thoms.; I ascertained this by examination of the specimens from Iceland in Lindroth's collections. Since, thus, a confusion of these two species erected by Thomson has taken place, it seems of importance to try to find out on what points they differ, and for this purpose I borrowed from the museum at Lund, through the courtesy of Dr. Kjell Ander, type specimens of ♀♀ of both species of Thomson's collections. The specimen of *K. tetratoma* has green rectangular label, and since this indicates the locality Skåne (Scania), and Thomson states that *tetratoma* was found in the vicinity of Lund, the specimen may be regarded as a lectotype. The specimen of *K. pentatoma* has a label on which is written in ink "Ld.", and as Thomson states that this species was found "at Råby near Lund", we may regard the specimen as the lectotype of *K. pentatoma*.

On studying these type specimens, it appears that the decisive difference between the two species is the shape of the antennal club, and this is also evident from the descriptions of them (4). *K. tetratoma* is referred by Thomson to sub-group 4: "Clava antennarum in femina 4-articulata", while *K. pentatoma* belongs to sub-group 3: "Clava antennarum in femina 5-articulata". As regards the type specimen of *K. tetratoma*, there can be no doubt that the antennal club is distinctly 4-articulate. As to the type specimen of *K. pentatoma*, there may be some doubt about the joints of the antennal club, the 9th joint being markedly narrower and shorter than the following ones. But that it is Thomson's *K. pentatoma* which the type specimen represents, appears from the fact that in the diagnosis Thomson says precisely about the club: "clava sub-5-articulata". This species will be further dealt with below.

According to the diagnosis and the type specimen there can, as stated above, be no doubt as to the dis-

similarity of *K. tetratoma* to *K. pentatoma*. According to the diagnosis the club of *K. tetratoma* should be "abrupto-4-articulata", and in the type specimen the 9th joint, also, though somewhat broader than the 8th, is so decidedly narrower and shorter than the 10th that the club

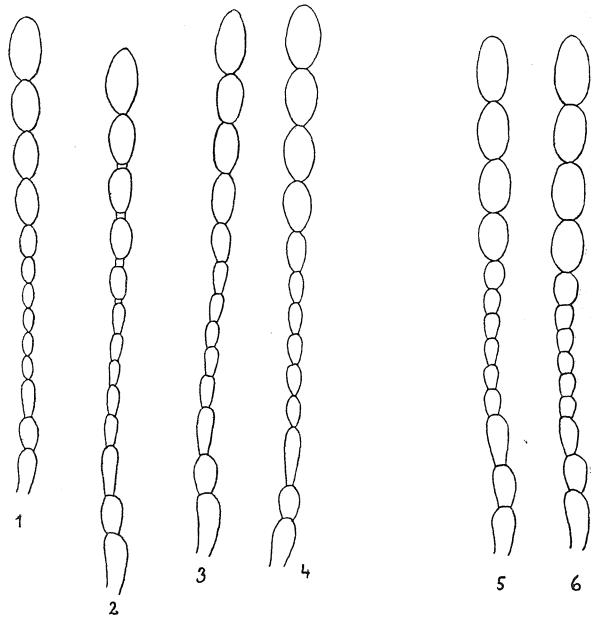


Fig. 1—6. Female antenna of: 1 *Kleidotoma pentatoma* C. G. Thoms., type specimen from Lund, 2—4 specimens from Iceland. — 5 *Kleidotoma tetratoma* C. G. Thoms., type specimen from Lund, 6 specimen from Örebro, Sweden. 186 times' magnification.

Th. Palm del.

can be said to be strongly marked off, in contrast to *K. pentatoma*, in which the 9th joint may be designated as transitional, so it is almost a matter of taste whether the club should be termed 4-articulate or 5-articulate. On the whole the antennal joints in *K. pentatoma*, reckoned from the 3rd one, are distinctly more elongate and proportionally narrower than in *K. tetratoma*.

The above-mentioned points of difference will appear with full distinctness from the drawings. The aforementioned type specimens of *K. tetratoma* and *K. pentatoma* have been used as a basis, but since especially the antennae of the females of the latter species show great variation, a variation which may be supposed to be due in some degree to different maturity of the various specimens, but also to the different appearance of the antennae at different aspects, I selected for the drawings such specimens as differed so much in the said respect that a series ranging from one extreme to the other was obtained (1, 2, 3, 4).

The antennae of *K. tetratoma* vary, also, but to a much less extent than those of *K. pentatoma*. To illustrate this, the antennae of a specimen from the Örebro district were drawn in addition to those of the type specimen (5, 6). (In the drawings all the antennae are seen directly from above).

As already mentioned, Thomson found both species at Lund, Scania, and I have specimens of *K. tetratoma* from the Örebro region and Karesuando in Lappland, and of *K. pentatoma* from the Örebro region.

Alloxysta Först.

A. (s. str.) macrohadna Hart. sensu C. G. Thoms. A ♀ Mælifellsá, Skagafjörður, ¹³/₇ 1933. On a willow branch. S. L. Tuxen leg. 2 ♀♀ Goðdalir, Skagafjörður, ²⁰/₇ 1933. Taken in grass. S. L. Tuxen.

In his diagnosis of *Allotria macrohadna* Hart. (3, p. 254) as well as in the synopsis (3, p. 251 and 252), Kieffer points out that the radial cell of this species is open also "ein wenig am Proximalende". This is not the case in the specimens from Iceland treated here nor in Swedish specimens of the species, but the proximal section in this as in most of the other species of the genus extends right out to the anterior edge. This latter seems also to agree

with Thomson's view, for in his description (4) of *A. macrophadna* he refers this species to the group which has "cellula radiali aperta", without mentioning at all that this should have reference to anything but to the anterior edge. A specimen in his collection examined by me agrees in this respect entirely with my own specimens from various localities in Sweden and with the Icelandic specimens. Kieffer's statement cannot be derived, either, from Hartig's original description (1, p. 352), for in this, which is very brief, it is only said as follows about the radial cell: "Area radialis aperta, latitudine duplo longior."

Of *A. macrophadna* I have seen specimens from Scania, Närke, and Hälsingland in Sweden. Kieffer records it from Sweden, England, Germany, and Austria, and Hellén reports it from Finland and the Kola Peninsula.

A. (s. str.) fuscipes C. G. Thoms. (*Ruthei* Hellén). A ♀ Þingvallavatn, Aug. 1938. G. Gígja. 3 ♂♂ Vaglaskógur ³¹/₇ 1929. From birch. Sv. G. Larsson. A ♂ on the road from Reykjavík to the hospital ²⁵/₆ 1929. At the bank of a brook. Sv. G. Larsson. A ♂ from the forest south of Skinnastaðir between Húsavík and Vopnafjörður ¹⁰/₈ 1929. Collected in old fallen humid leaves. Sv. G. Larsson. A ♀ Goðdalir, Skagafjörður, ²²/₈ 1932. S. L. Tuxen.

On erecting *A. Ruthei* (2, p. 4—5), Hellén compared it with *A. fuscipes* C. G. Thoms., and states that it differs from Thomson's species "durch das viel längere 3., das nicht quere vorletzte Fühlerglied, längere Radialzelle und hellere Beine". I have, however, compared specimens from Iceland, i. a. the type specimen of *A. Ruthei*, in Lindroth's collection, which agrees with the present Icelandic material, with one of Thomson's specimens of *A. fuscipes* from Råby near Lund (locality of the species according to Thomson, 4 p. 410), and found that the specimens from Iceland agree on all points with this specimen of Thomson. In his description Thom-

son uses the adverb "vix" ("antennis -- articulis -- 3:0 2:0 vix longiore") and "fere" ("antennis -- articulis -- penultimo fere transverso"), thus indicating relative characters, which might give rise to mistakes if the type specimen was not accessible. It would be a decisive character if the last antennal joint but one in the one case (*fuscipes*) was transversal, in the other case (*Ruthei*) not transversal, but in his description of *A. fuscipes* Thomson does not say that this joint is transversal, but in front of this word he has the adverb "fere", which indicates some tensibility. In the type specimen as well as in the specimens from Iceland and the Örebro region this joint is not transversal, but, though inconsiderable, even longer than broad.

I have *A. fuscipes* in one specimen from Hälsingland in Sweden. Kieffer records it only from Sweden, after Thomson.

A. (Nephycta) marshalliana Kieff. 2 ♂♂ at Bakka-kotslaug, Skagafjörður, 7/8 1933. Swept on the vegetation of the bank. S. L. Tuxen. A ♂ Vik, Mýrdalur, July 1936. G. Gígja.

I agree entirely with the view held by Hellén (2 p. 3) that as regards species with shortened wings, in this case *A. marshalliana*, it is not justifiable to erect new genera; I follow Hellén, Cameron, and Thomson, who employ the old generic names for these species.

Kieffer only knows *K. marshalliana* from England.

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