

Redescription and distribution of *Phlegra hentzi* (Marx, 1890) comb. n. (Araneae, Salticidae)

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Summary

Phlegra hentzi (Marx, 1890) comb. n. is removed from the synonymy of *P. fasciata* (Hahn, 1826) and redescribed on the basis of both old and newly collected material from North America. An up-to-date map of its distribution is also provided.

Introduction

For a long time, most researchers have treated *Phlegra leopardus* (Hentz, 1846) as a junior synonym of *Phlegra fasciata* (Hahn, 1826), although this synonymy is obviously incorrect. Hentz (1846) described a new species, *Attus leopardus*, from USA (Alabama), but this specific name turned out to be a junior primary homonym of *Attus leopardus* Walckenaer, 1837 [= *Pelegrina proterva* (Walckenaer, 1837); see Prószyński (1990)]. This fact was first indicated by Marx (1890), who correctly proposed a new replacement name for this taxon, *Attus hentzi*. However, subsequent authors (Emerton, 1891; Peckham & Peckham, 1909; Banks, 1910) did not accept this proposal and continued to use the invalid name *Phlegra leopardus*. Later, without any argumentation, Chickering (1944) and subsequent authors (Chamberlin & Ivie, 1944; Kaston, 1948, etc.) began to interpret the North American species as *Phlegra fasciata*, ignoring the fact that although Emerton (1875) first regarded *P. leopardus* and *P. fasciata* as the same species, he had later (Emerton, 1891) changed his opinion and treated *P. leopardus* as a valid species (see Bonnet, 1958: 3594, footnote). This taxonomic case has never been thoroughly studied and therefore the name *Phlegra fasciata* has been erroneously assigned to the species occurring in the USA (see Richman & Cutler, 1978), while the name *Attus hentzi* has been either omitted (see Prószyński, 1990), or has been included in the synonymy list of *Phlegra fasciata* in most modern catalogues (see Roewer, 1955; Platnick, 2000, etc.).

Thus, the purpose of the present work is to revalidate, including a new combination, and redescribe *Phlegra hentzi*, the North American salticid species so far confused with the Palaearctic *Phlegra fasciata*.

Specimens for this study were borrowed from or distributed among the following museums: AMNH=

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American Museum of Natural History, New York, USA (Dr N. I. Platnick); CNC=Canadian National Collection, Ottawa, Canada (Dr C. D. Dondale); MCZ=Museum of Comparative Zoology, Harvard University, Cambridge, USA (Mrs L. Leibensperger and Dr G. Giribet); MMUM=Manchester Museum, University of Manchester, Manchester, UK; and ZMTU=Zoological Museum, University of Turku, Finland.

The sequence of leg segment measurements is as follows: femur+patella+tibia+metatarsus+tarsus. The following abbreviations are used in the text and in the table: AME=anterior median eyes, ap=apical, d=dorsal, Fm=femur, Mt=metatarsus, PLE=posterior lateral eyes, pr=prolateral, Pt=patella, rt=retrolateral, Tb=tibia, v=ventral. For the leg spination the system adopted is that used by Ono (1988). All measurements are in mm.

Phlegra hentzi (Marx, 1890) comb. n. (Figs. 1–2, 4–7, Map 1)

Attus leopardus Hentz, 1846: 359–360, pl. 21, fig. 21 (♀ holotype considered lost, not examined; name preoccupied); type locality: USA, Alabama.

Aelurops fasciatus: Emerton, 1875: 130 (synonymised *Attus leopardus* Hentz, 1846 with *Attus fasciatus* Hahn, 1826).

Attus hentzi Marx, 1890: 578 (replacement name for *A. leopardus* Hentz).

Phlegra leopardus: Emerton, 1891: 242, pl. 21, fig. 1a–d (♂♀); Peckham & Peckham, 1909: 521, pl. 42, fig. 6 (♀); Banks, 1910: 69.

Phlegra fasciata: Chickering, 1944: 203, figs. 122–125 (♂♀); Chamberlin & Ivie, 1944: 213 (♂); Kaston, 1948: 460–461, pl. 90, figs. 1669–1674 (♂♀); Roewer, 1955: 1140–1141; Bonnet, 1958: 3594–3596; Richman & Cutler, 1978: 97, 103; Kaston, 1981: 460–461, pl. 90, figs. 1669–1674 (♂♀); Cutler, 1988: 424; Platnick, 1989: 613; 1993: 799; 1998: 924; Guarisco *et al.*, 2001: 8.

Diagnosis: The species has for a long time been confused with *Phlegra fasciata*, but males can be readily separated from it by the stronger (more massive) embolus (cf. Figs. 4 and 10), the pointed and curved tibial apophysis (rather than bilobate as in *fasciata*: cf. Figs. 2 and 3), and by the clypeus being densely covered with light/turquoise blue scales (cf. Figs. 7 and 8). Females of *P. hentzi* can be easily distinguished by the clearly bilobate epigyne overhanging the epigastric furrow (cf. Figs. 5 and 9), and by the different arrangement of the spermathecal loops (cf. Fig. 6 and Logunov, 1996: fig. 25).

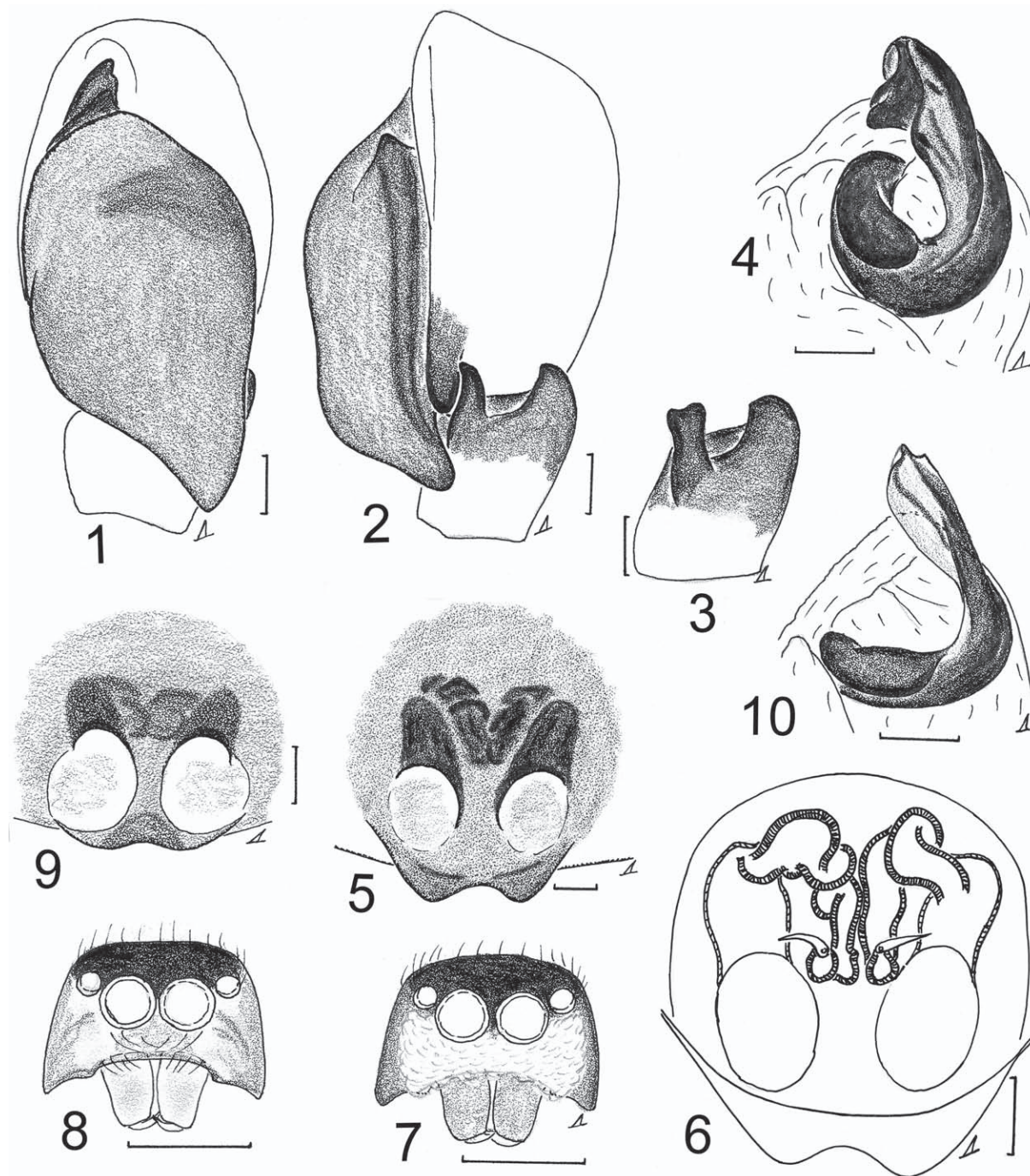
Distribution: Mainly eastern half of North America, approximately to the east of 100°W (Map 1).

Description: *Male* (Texas: Raven Ranch): Carapace 2.88 long, 1.95 wide, 1.05 high at PLE. Ocular area 0.95 long, 1.39 wide anteriorly, 1.40 wide posteriorly. Diameter of AME 0.38. Abdomen 2.45 long, 1.70 wide. Cheliceral length 0.63. Clypeal height 0.28. Length of leg segments: I 1.30+0.75+0.83+0.61+0.53; II 1.28+0.73+0.73+0.58+0.50; III 1.54+0.70+0.79+0.99+0.60; IV 1.58+0.71+1.08+1.25+0.70. Leg spination: I: Fm d 0-1-1-4; Pt pr 0-1-0; Tb pr 1-1, v 2-2-2ap; Mt v 2-2ap. II: Fm d 0-1-1-4; Pt pr 0-1-0; Tb pr 1-1, v 1-1-2ap; Mt pr 1-1, v 2-2ap. III: Fm d 1-3-5; Pt pr and rt 0-1-0; Tb d 1-0, pr 2-2, rt 1-1-1, v 1-1ap; Mt d 1-1-0, pr and rt 1-2ap,

v 2-2ap. IV: Fm d 1-1-4; Pt pr and rt 0-1-0; Tb d 1-0, pr 1-1-1-1, rt 1-1-1, v 2ap; Mt d 1-1-0, pr 2-1-2ap, rt 1-1-2ap, v 2ap. Carapace brown, covered with black, elongate appressed scales; with two longitudinal white stripes of scales originating behind PLE. Eye field black, covered with golden, elongate appressed scales. Clypeus (Fig. 7) densely covered with light blue scales (turquoise blue in living specimens; see Richman, 1982: sub *P. fasciata*). Sternum, maxillae, labium and chelicerae brownish yellow. Abdomen: dorsum dark grey-brown, with three longitudinal white stripes of scales and well developed scutum covering two-thirds of dorsum; venter yellow. Book-lung covers yellow-brown. Spinneretes

yellow. All legs yellow-brown. Palps brown, but femora black anteriorly and cymbium yellowish. Palpal structure as in Figs. 1, 2, 4.

Female (Texas: Raven Ranch): Carapace 3.35 long, 2.18 wide, 1.25 high at PLE. Ocular area 1.13 long, 1.63 wide anteriorly, 1.60 wide posteriorly. Diameter of AME 0.45. Abdomen 3.25 long, 2.00 wide. Cheliceral length 0.85. Clypeal height 0.28. Length of leg segments: I 1.53+0.85+0.88+0.60+0.45; II 1.46+0.73+0.78+0.60+0.50; III 1.75+0.90+0.83+1.05+0.61; IV 2.03+0.98+1.39+1.63+0.70. Leg spination: I: Fm d 1-1-3; Tb v 2-2-2ap; Mt v 2-2ap. II: Fm d 1-1-3; Tb pr 1-1, v 1-1-2ap; Mt v 2-2ap. III: Fm d 1-1-4; Pt pr and rt 0-1-0;



Figs. 1–10: 1–2, 4–7 *Phlegra hentzi* (Marx, 1890). 1 Male palp, ventral view; 2 Ditto, retrolateral view; 4 Embolus, dorsal view; 5 Epigyne, ventral view; 6 Spermathecae, dorsal view; 7 Male face. 3, 8–10 *P. fasciata* (Hahn, 1826). 3 Tibial apophysis of male palp, retrolateral view; 8 Male face; 9 Epigyne, ventral view; 10 Embolus, dorsal view. Scale lines=0.1 mm (1–7, 9–10), 1.0 mm (7, 8).

Tb d 1-0, pr and rt 1-1-1, v 2ap; Mt d 1-1-0, pr and rt 1-2ap, v 2-2ap. IV: Fm d 1-1-2; Pt pr and rt 0-1-0; Tb d 1-0, pr and rt 1-1-1, v 1-lap; Mt d 1-1-0, pr, rt and v 1-1-2ap. Coloration as in male, but clypeus brown, lacking dense coverage of hairs, but with crescent-shaped patches of bluish scales immediately beneath AME, and palps brownish yellow, with dark brown rings. Dorsum lacking scutum. Epigyne and spermathecae as in Figs. 5, 6.

Material examined: USA: *Alabama:* 1♂ (MCZ), no exact locality, N. Banks coll. *Arkansas:* 1♂ (MCZ), Washington Co., Cove Cr. Valley, 15 mi. S of Prairie Grove, Boston Mts, 1,000 ft a.s.l., 1957, M. Hite; 2♂ (MCZ), Arkansas, Berryville, 22 April 1939, C. Wilton; 1♀ (AMNH), Hope (33°39'N, 93°35'W), date and coll. ? *California:* 1♀ (AMNH), Ventura Co., Chuchupate campground, 3.5 mi. S of Lake of the Woods (c. 34°40'N, 119°10'W), 6,200 ft a.s.l., 5 May 1980, C. E. Griswold. *Florida:* 2♀ (AMNH), Highlands Co., Archbold Biol. Stn, 8 mi. S of Lake Placid (27°11'N, 81°21'W), pine/oak scrub, 26–28 June 1978, C. E. Griswold; 1♂ (AMNH), Ocala Nat Forest, 10 mi. E of Lynne (29°11'N, 82°08'W), pine/oak scrub, 25 June 1978, C. E. Griswold. *Georgia:* 1♀ (MCZ), Jasper, 26 July 1903, J. H. Emerton coll. *Indiana:* 2♂ (MCZ), New Harmony (38°08'N, 87°56'W), N. Banks coll. *Iowa:* 1♀ (MCZ), Winnesiek Co., 1 mi. N of Decorah, limestone quarry in ravine, 31 May 1960, H. Levi. *Kansas:* 1♀ (MCZ), Manhattan (39°10'N, 96°40'W), 25 May (year ?), N. Banks; 1♀ (MCZ), same locality, date ?, Scheffer (Peckham coll.). *Massachusetts:* 1♀ (MCZ), Tyngsboro (42°40'N, 71°25'W), 24 May 1912, J. H. Emerton coll.; 1♂ (MCZ), Blue Hills (42°14'N, 71°06'W), 18 June 1915, J. H. Emerton coll.; 1♂ (MCZ), Sharon (42°08'N, 71°11'W), on ground in dry oak, 1 June 1919, J. H. Emerton coll.; 1♂ (MCZ), same locality, 12 June 1925, J. H. Emerton coll.; 1♀ (MCZ), Hampden Co., c. 5 mi. N of Holyoke (c. 42°14'N, 72°37'W), Mt. Tom (42°17'N, 72°37'W), 4 July 1873, J. H. Emerton coll. *Michigan:* 1♂ (MCZ), Calhoun Co., probably Albion (42°15'N, 84°45'W), date ?, A. M. Chickering; 1♂ (MCZ), Stony Lake

(Mason Co., *sensu* Chickering, 1944), July 1930, A. M. Chickering. *Missouri:* 3♀ (CNC), E of Ashlano, dry pine wood (under rocks), 23 June 1982, N. F. Cutler, R. C. Powder & R. G. Bennett; 1♀ (AMNH), 6 mi. NE of Stanton (38°12'N, 91°01'W), 8 July 1966, J. & W. Ivie. *New Jersey:* 2♂ 2♀ (AMNH), Lamberville (40°22'N, 74°56'W), May 1953, W. Ivie; 1♀ (AMNH), same locality, June 1953, W. Ivie. *Ohio:* 1♀ (AMNH), Sugar Grove (39°37'N, 82°33'W), June 1935, W. Ivie & W. M. Barrows. *Oklahoma:* 2♀ (AMNH), Comanche Co., Wichita Mts, 16 June 1979, N. Platnick. *Pennsylvania:* 1♀ (AMNH), 1 mi. S of Dunbar, Genter-furnace, hilltop above, 25 June 1937, G. Greenwood. *South Dakota:* 2 juv. (CNC), Badlands Nat. Park, Jackson Co., near Cedar Pass (43°42'N, 101°38'W), 23 June 1982, R. G. Bennett. *Tennessee:* 1♂ (MCZ), Robertson Co., Glenraven, June–July 1904, W. H. Fox; 1♀ (AMNH), 3 mi. SW of Gatlingburg (35°25'N, 83°20'W), 14 October 1965, J. & W. Ivie. *Texas:* 2♂ (MCZ), Austin (c. 30°20'N, 97°45'W), date ?, W. & E. Peckham coll.; 1♂ (AMNH), Texas, Bell Co., 3 mi. S of Belton Rt. 81, 28 December 1941, coll. ?; 1♀ (AMNH), Kerr Co., Raven Ranch (30°04'N, 99°21'W), August 1939, D. Mulaik; 1♂ 1♀ (AMNH), same locality, June 1941, D. Mulaik; 1♀ (AMNH), 7 mi. E of Burnet, 2 October 1950, W. J. Gertsch. *Virginia:* 1♀ (AMNH), Clifton Forge, Alleghany Co. (37°49'N, 79°51'W), sweeping grassy field, 2 June 1950, R. L. Hoffman. *West Virginia:* 2♂ (MCZ), Preston Co., West Virginia University Forest, Chestnut Ridge (39°26'N, 79°41'W), mixed oak-hardwood, pitfall traps, 14 May 1991, D. T. Jennings; 3♂ (AMNH), same locality, 8 May–10 July 1990, D. T. Jennings. *Wisconsin:* 1♀ (MCZ), Madison (43°05'N, 89°25'W), under stone in shore-wood quarry, 29 May 1955, H. Levi; 1♂ (MCZ), no exact locality, ex. G. W. L., N. Banks coll. In addition, the species was mentioned from Ontario, Canada (CNC files; no detailed data).

Comparative material: *Phlegra fasciata* (Hahn, 1826): FINLAND: 2♂ (ZMTU), Nauvo, Lökhholm, 1969–1970, P. T. Lehtinen; 1♀ (ZMTU), Dragsfjärd, Purunpää, 20 July 1971, P. T. Lehtinen; 1♂ (ZMTU), Korppoo, Rumar, sandy site, 11 July 1974, P. T. Lehtinen. IRAN: 1♂ (MMUM), Mazandaran Prov., Nashtarood-Khoshkadaran (36°45'N, 51°02'E), 9–10 June 2000, Y. M. Marusik. INDIA: 3♂ 3♀ (MMUM), Himachal Pradesh, Sissu village (32°28'N, 77°07'E), 3,150–3,500 m a.s.l., 8–10 June 1999, Y. M. Marusik.

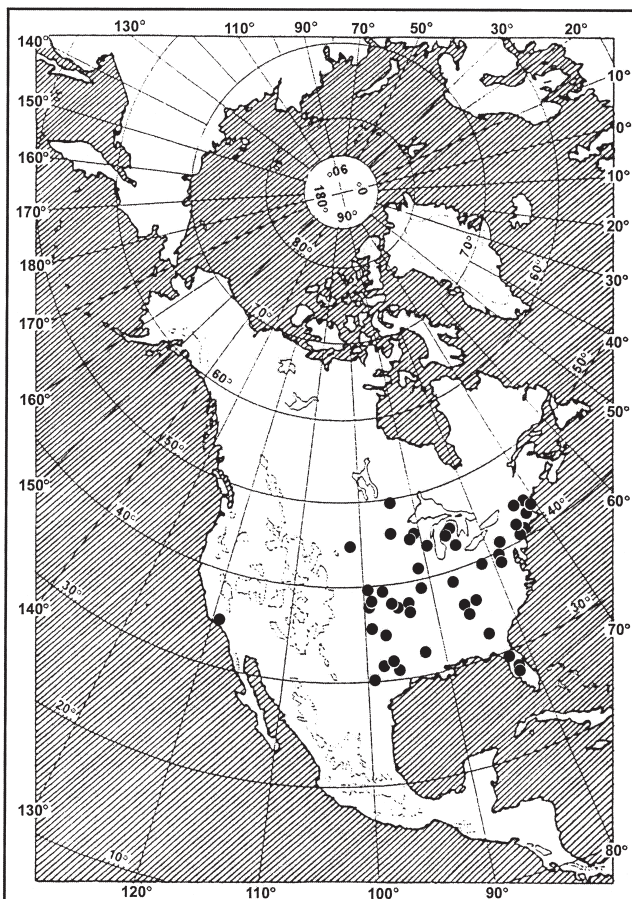
For other studied material of *P. fasciata* see Logunov (1996).

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Map 1: Distribution of *Phlegra hentzi* (Marx, 1890) in North America.

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Taxonomic notes on some Norwegian linyphiid spiders described by E. Strand (Araneae: Linyphiidae)

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Summary

Five linyphiid species described by E. Strand from Norwegian material have not been found since their original description. Types are lost and probably destroyed. The species are critically reviewed, and based on the original descriptions and comparison with valid species the following synonyms or taxonomic decisions have been established: *Ceratinella oculatissima* Strand, 1901 = *C. wideri* (Thorell, 1871), *Cnephalocotes dentiger* Strand, 1902 = *Silometopus reussi* (Thorell, 1871), *Cnephalocotes ophthalmicus* Strand, 1901 = *Silometopus ambiguus* (O. P.-Cambridge, 1905), *Pseudogonatium fuscomarginatum* Strand, 1901 = *Zornella cultrigera* (L. Koch, 1879), while *Metopobactrus triangulatus* Strand, 1902 is a nomen dubium. The senior synonym *Cnephalocotes ophthalmicus* is suppressed because of lack of usage.

Introduction

Embrik Strand (1876–1953) described a large number of spiders in the early part of the 1900s based on material collected in both northern and southern

Norway. Since then the majority of these species have been synonymised with previously described species (e.g. Tambs-Lyche, 1942; Tullgren, 1942; Holm, 1944); however, five linyphiids remain in the World Spider Catalog (Platnick, 2001). These species, described from north Norway (Strand, 1901) and western parts of south Norway (Strand, 1902), pose taxonomic problems because there are no or only a few old records published since the original descriptions and the validity of the species has not been tested with the methods of modern taxonomy. It is therefore highly likely that they are synonyms of previously described species. These five species are discussed in this paper.

Material and methods

The types of all the following species are lost. A letter to Å. Holm dated 3 November 1942, written by the then curator at the Zoological Museum, Oslo, L. R. Natvig, clearly states that the type material of three species (*Ceratinella oculatissima*, *Cnephalocotes ophthalmicus* and *Pseudogonatium fuscomarginatum*) was not present in the Museum's collection. The whereabouts of the types of the remaining two species (*Cnephalocotes dentiger* and *Metopobactrus triangulatus*) are unknown, but they are not in Oslo. It is possible that all the types were deposited by Strand in Riga, in which case they would have been destroyed during WWII. It is more probable, however, that they were lost before Strand's departure from Norway, as the types of the other species

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