GIBBARANEA ULLRICHI (HAHN, 1835) (ARANEAE, ARANEIDAE) IN THE NETHERLANDS

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ABSTRACT
The occurrence of *Gibbaranea ullrichi* (Hahn, 1835) (Araneae, Araneidae) in the Netherlands.
Gibbaranea ullrichi (Hahn, 1835) was recently recorded for the first time for the Netherlands. The genus *Gibbaranea* is diagnosed. A description of the male is given. The distribution in Europe is summarized.

Key words: first country record, *Gibbaranea ullrichi*, Netherlands

INTRODUCTION

In an earlier issue of SPINED I announced the occurrence of *Gibbaranea ullrichi* (Hahn, 1835) in the Netherlands (Van Helsdingen 2010). In the autumn of 1958 a subadult male specimen of this species was collected and, after it had moulted into an adult male after one month, it was provisionally identified as *Araneus bituberculatus* (Walckenaer, 1802) and stored it in my collection under that name. That collection is now part of the collections of the National Museum of Natural History at Leiden, the Netherlands. I came across the specimen recently and checked the identification. The specimen appeared to belong to *Gibbaranea ullrichi* (Hahn, 1835), a close relative of *Gibbaranea bituberculata*, the genus to which *Aranea bituberculata* in the meantime has been transferred.

THE GENUS *GIBBARANEA*

Four species occur in Europe: *Gibbaranea bituberculata* (Walckenaer, 1802), *G. gibbosa* (Walckenaer, 1802), *G. omoeda* (Thorell, 1870), and *G. ullrichi* (Hahn, 1835). Of some of these subspecies have been described, but I neglect these in the present overview. Other species of *Gibbaranea* occur from the macaronesian archipelago to Japan.

Gibbaranea bituberculata and *G. gibbosa* are the more common species within Europe, while *G. omoeda* appears to be much less common. It is found on coniferous trees and possibly prefers the higher branches, which would explain its relative rareness (Simon, 1929: 699). *G. ullrichi* can be classified as rare although it has been recorded from many countries in Europe (see below).

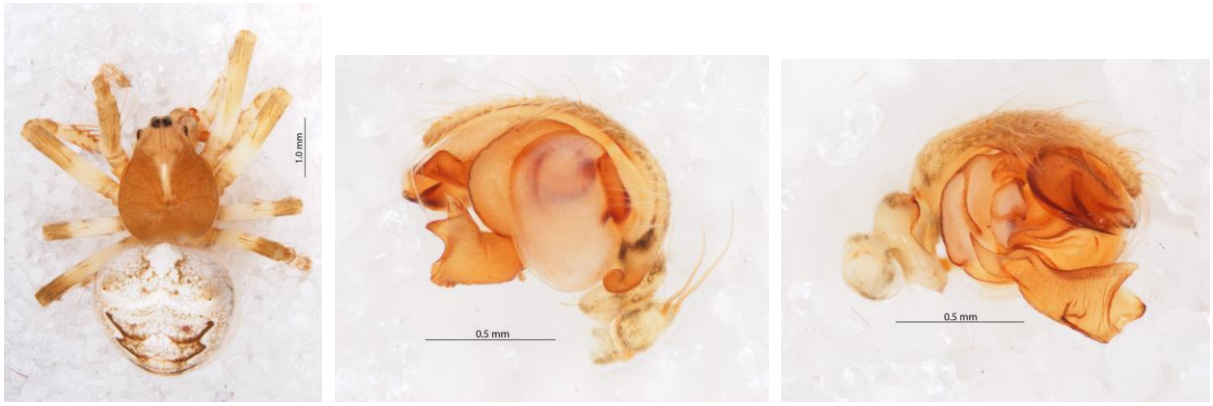
Simon (1929) brought these species together in a species-group within the genus *Araneus*, a very sensible procedure when working in a restricted geographic area. His 14th group of species comprised all the four above-mentioned species (and one subspecies of *A. gibbosus* with an aberrant colour-pattern). Wiehle (1931) followed this subdivision of *Araneus* into species-groups. Archer (1951) formalized this subdivision by erecting the new genus *Gibbaranea*, with *Araneus bituberculata* (Walckenaer, 1802) as type-species and including the three other species mentioned above. Subsequently other species from the Palaearctic region, including the Azores and the Canary Islands, have been added.

In most species of the family Araneidae the male palp is spatially complex in that the different elements are not packed or folded together in forming a knob-shaped palp, as for instance in most Linyphiidae, but are strikingly three-dimensional with elements sticking out and therefore the palpal elements look different when viewed from a slightly different angle. This makes it very difficult to supply illustrations which are easily understood by the user. Likewise the illustrations by other authors are difficult to interpret when only one illustration of the lateral aspect of the male palp is presented.

Gibbaranea Archer, 1951

Diagnosis. - The genus is characterized by the combination of the following characters: presence of one pair of latero-dorsal tubercles on the kite-shaped opisthosoma (dorsal view); a narrow, white transverse dorsal band between the tubercles; the median eyes of the two rows placed in a quadrangle, or in a trapezium which is slightly wider behind than in front; posterior median eyes larger than anterior medians (most distinctly so in the male); all femora with dark, often blackish apical half (or apical third in hind legs); a distinct posterior-apical tooth or hook on coxa I, absent from coxa II; femur I with two rows of ventral spines (in the male); a strong but short ventral spine at the base of all femora (most strongly developed on femur IV); leg II shortest and most heavily spined of all legs; tibia II shorter and slightly thicker than tibia I and bearing in the apical two-thirds two rows of long and

thick ventral to prolateral spines and a row of smaller denticles in between (in the male); gnathocoxae with a basal external tubercle or tooth; patella of male palp with two dorsal spines; tibia of male palp with a ventral prolongation, squarish behind and following the curve of the subtegulum, some setae at the tip; cymbium narrow and sometimes slightly sigmoid in dorsal view; large and prominent median apophysis in the male palp in transverse position, narrow at proximal end and dilated at the tip forming a corrugated surface.



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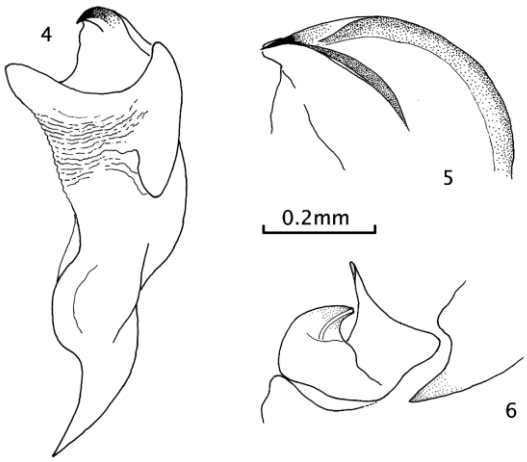
Figs 1-3. *Gibbaranea ullrichi* (Hahn). 1, male, dorsal view; 2, male plap, lateral view; 3, male palp, ventral view. Photo: Jeremy Miller.

***Gibbaranea ullrichi* (Hahn, 1835)** (figs 1-5)
Small, light-colored species with whitish opisthosoma (fig. 1).
Material. - The single male specimen originates from Radio Kootwijk (5.49E, 52.10N) in the province of Gelderland, the Netherlands, was collected on 14.ix.1958, and moulted into an adult male in captivity one month later (14.x.1958). On low vegetation in sandy area.

Description
Male tot L 4.5; prosoma L 2.1, W 1.7, opisthosoma L 2.7, W 2.5; Fe I 2.1, Pa , Ti 2.05, Mt 1.6, Ta 0.92; cymbium L 0.99; median apophysis L 0.812.
Prosoma with narrow lateral wing-like extension; light brown, lightly suffused with grey, cephalic part lighter, a narrow white stripe between fovea and cephalic part. Sternum and chelicerae brown, more heavily suffused with black, but suffusion lacking mesally on the chelicerae. Legs light brown, distinctly annulated with black on all segments; femora distally black (generic character). Leg spination in general as in genus, short tibia II with thick, short spines (generic character) (see fig. xxx); basal prolateral spine on tibia I long (generic character) (L 0.875 mm, Ø of sement at base of spine 0.212 mm). Opisthosoma with dorsal transverse line still discernible but colour



Figs 4-6. *Gibbaranea ullrichi* (Hahn). Male palp. 4, median apophysis, apical-lateral view; 5, tip of terminal apophysis; 6, embolus with conductor.

generally white in front and behind, ventral surface also white, a darker area around spinnerets; dorsal leaf-like figure with blackish margins, filled-in with white and surrounded by white; anterior dorsal humps with a minute black tip.

Male palp (figs 2-5). Cymbium narrow, suffused with grey but with a light transverse band from base of knob-shaped paracymbium to mesal margin. Patella with two long spines (generic character), tibia without spine. The two striking palpal elements are the median apophysis and terminal apophysis. Median apophysis (figs 2, 3) (length 0.81 mm) sticking out laterally with its three-lobed apical part, the lateral lobes clearly separated from and shorter than
median lobe, the latter with a small hook; basal tip slender and pointed. Terminal apophysis (fig. 2, 4) complexly curved or folded with an ectodorsal chitinized rib widening near tip of cymbium and an equally chitinized shale-like mesodorsal part, apical margin undulating and excavated before mesoventral tip which is sharply pointed. A narrow "radix" is situated between the median and the terminal apophyses, originating at the tegulum and distally ending between the basal tip of the median apophysis and the terminal apophysis with an embolus (fig. 5) (with the spermduct ending at the tip of a curved, pyramidal tooth) and a small conductor.

DISTRIBUTION

According to Platnick (2010) *G. ullrichi* occurs in Europe, Russia, and Central Asia. The species is known from many European countries (Van Helsdingen 2010) but seems to lack in Great-Britain and Ireland and in the northern countries (Norway, Sweden, Finland, Denmark), the northern part of Russia, and the Baltic countries and Belarus. It is reported from the Netherlands (this paper), Germany, Switzerland, Austria, the Czech Republic and Slovakia, Poland, Hungary, Croatia, Macedonia, Serbia-Montenegro, Bulgaria, Ukraine, and central and southern European Russia, as well as in Portugal and Italy (Van Helsdingen 2010). The species seems to be common nowhere. One gets the impression that because of its overall rarity the distribution pattern is incomplete and it may turn up some day in other countries such as Spain, Greece and Belarus.

The species inhabits the lower vegetation layer on warm and sunny places (Wiehle, 1931). According to L. Koch (1877: 117) the species occurs on lower vegetation on very dry, sunny and sandy places. This agrees very well with the circumstances at the site where the specimen was found in the Netherlands, an area with heathland and patches of forest on extensive glacial sand deposits in the central part of the country (Veluwe, province of Guelre). Available data for adult specimens fall in the period April to June. The specimen from the Netherlands was collected in the middle of September in the penultimate stage and became adult in mid October, but it was kept indoors which may have sped up its development. Under natural conditions the specimen might have passed the winter in the penultimate stage and moulted for the last time in spring.

COMMENTS

The short original description of *Epeïra Ullrichii* (*Epeira ullrichi*) by Hahn (1835: 66) is based on male and female, while a male specimen is depicted (pl. 68 fig. 159). The illustration shows a light-coloured specimen with annulated legs. The material was apparently collected in the surroundings of Neurenberg where Hahn lived. He describes the habitat as lower shrubs on sunny hills, where the species was not rare and where she constructed a relatively large web. The species is named after "Herrn Ullrich zu Linz", an industrious entomologist! I have not found any personal data about mr Ullrich.

C.L. Koch (1844: 98), when presenting a redescription of *Epeira dromedaria* (Walckenaer), stated that *Epeira ullrichi* Hahn was but a young male of *E. dromedaria* ("*Epeira Ulrichii* Hahn II. P. 66, fig. 159. Ist ganz gewiss das junge, noch nicht ausgebildete Männchen."). I do not agree.

Simon (1874: 64) officially synonymized *Epeira dromedaria* C.L. Koch with *Epeira ullrichi* and is the first one to present a more detailed description of both sexes, be it without any illustrations. He does not mention any details on habitat or mating period.

Chyzer & Kulczynski (1891: 129) do not present any characters and only depict the tip of the median apophysis of the male palp (pl. 5 fig. 4). They mention a number of localities where the species has been found in Hungary (then the Hungarian part of the Austrian-Hungarian dual monarchy). In subsequent years Kulczyński (1909: 676; 1911: 61) suggested the most useful characters to distinguish between *Epeira dromedaria* (= *G. bituberculata*) and *Araneus ullrichi* (= *Gibbaranea ullrichi*). [1]

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[1] Obviously Wladyslaw Kulczyński in his 1909 paper under the heading *Araneus ullrichi* (Hahn) erroneously referred to his figure 19, which is not in accordance with the explanations of the illustrations on plate 26; figs 19 and 22 in fact illustrate *bituberculatus* while fig. 20 shows the tip of the male palp of *ullrichi* (and does not refer to *Xysticus alpicola* as suggested on p. 679 under the heading of that species).

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BOEKBESPREKING

De Nederlandse Biodiversiteit. J. Noordijk, R.M.J.C. Kleukers, E.J. van Nieukerken & A.J. van Loon (red.), Nederlandse Fauna 10 (2010), 512 pagina's, gebonden, talrijke illustraties. Uitgegeven door EIS-Nederland, NCBNaturalis en KNNV. ISBN 978-90-5011-351-9.

Een nogal veelomvattende en moeilijk grijpbare titel, vooral omdat de definitie van biodiversiteit niet eenduidig is vastgesteld. Het boek werd samengesteld als bijdrage aan het Biodiversiteitsjaar 2010.

Het is een vervolg op het boek uit 1995 met de titel Biodiversiteit in Nederland, dat toen in 208 pagina's de kennis van zaken van dat ogenblik veel compacter en minder rijk geïllustreerd vastlegde. Sindsdien is er veel voortgang geboekt doordat de kennis over de samenstelling van onze flora, fauna en andere organismen flink is toegenomen. In Nederland is de registratie van veel groepen uitstekend in handen van de PGO's (Particuliere Gegevensbeherende Organisatie) – zoals EIS-Nederland – waarin beroepsmatig en niet-beroepsmatig werkende floristen en faunisten zijn verenigd. Samen vormen zij een stevig netwerk dat verworven kennis over verspreiding en biologie vastlegt en voor de belangen van de Natuur van Nederland opkomt.

Niet de individuele soorten worden behandeld – dat zou binnen een boek van deze omvang niet mogelijk zijn – maar de groep waartoe zij behoren. Dus Vogels (een klasse) en Spinnen (orde), maar soms worden opeens families behandeld, zoals Langpootmuggen (Tipulidae, een familie) en Zweefvliegen (Syrphidae, familie). Op verschillend niveau ingeschaalde groepen worden op een zelfde manier behandeld. Dat maakt het boek wat onevenwichtig. Per behandelde groep wordt wel dezelfde opzet gebruikt en worden steeds hoofdstukjes gewijd aan Cyclus, Ecologie, Diversiteit, Voorkomen en Determinatie (verwijzing naar bruikbare literatuur).

De samenstellers melden dat er 47.800 soorten eencelligen, planten, schimmels en dieren (exoten uitgezonderd) in ons land voorkomen. Bij benadering, want nog lang niet alles is bekend. Men verwacht dat het aantal misschien wel tot 60.000 kan oplopen. Voor een heleboel groepen zijn er in ons land geen specialisten te vinden, wordt er niet of nauwelijks geïnventariseerd en ontbreken daardoor recente gegevens.

Gebruikers van het boek kunnen nog eens zien wat er over "hun" groep werd geschreven of hun algemene kennis verbreden door over andere groepen te lezen. Voor iedereen van belang zijn de algemene hoofdstukken over "Biodiversiteit en Classificatie", waarin overzichtelijke stambomen voor alle groepen van organismen worden gegeven. Samen met de behandeling van de groepen vormt dit een zeer gedegen handboek. Andere hoofdstukken zijn meer concluderend of beschouwend, zoals "Patronen in de Nederlandse Biodiversiteit", "Het Nederlandse Biodiversiteitsbeleid", en "Biodiversiteit en de Terreinbeherende Organisaties". Voor wie van getallen houdt is het samenvattende hoofdstuk "De Nederlandse Biodiversiteit bestaat uit Wormen en Insecten" zeer leerzaam en het opslaan waard. "Veranderingen in de Nederlandse Biodiversiteit" laat de trends zien die aan de hand van alle beschikbare gegevens kan worden vastgesteld. Zeer verhelderend is ook de kaart waarop de verspreidingspatronen van alle nu in ons land bekende soorten planten en dieren zijn bijeengebracht, waaruit duidelijk blijkt dat de grootste biodiversiteit te vinden is binnen de ecologische hoofdstructuur, voor zover die nu is gerealiseerd. Een goede ondersteuning voor dat beleid. Volhouden en afmaken.

Wie het boek aanschaft zal daar zeker geen spijt van krijgen.

PJvH