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ON THE ESTABLISHMENT OF CORNICULARIA CLAVICORNIS Emerton (ARANEAE) AS A BRITISH SPECIES

by J.R.PARKER.

Introduction. The purpose of this paper is to consider the validity and distribution of Cornicularia clavicornis Emerton as a British species in lieu of Cornicularia karpinskii (O.P.-Cambridge) in the list of British spiders.

The Species. Family: LINYPHIIDAE (Erigoninae)
Genus: Cornicularia A.Menge 1868

Cornicularia karpinskii (O.P.-Cambridge) 1873 was first described from specimens of both sexes taken at Kuttuk on the southern point of Lake Baikal in Siberia 1872, since when records assigned to this species have been made from East Greenland, West Greenland, United States of America, Alaska, Canada (including Ellesmere Island & Newfoundland), Scandinavia, Iceland, Spitzbergen, Faroe Islands, Franz Joseph Land, Novaya Zemlya, Waigatsch Island, Kamchatka, the Swiss Alps and Britain.

Cornicularia clavicornis Emerton 1882 was described from a male specimen from Mt.Washington, New Hampshire, U.S.A., but Crosby & Bishop (1931) considered it to be synonymous with Cornicularia karpinskii(O.P-C.).

Discussion. Schenkel (1931), Braendegaard (1946) and Holm (1958) have observed that the name C.karpinskii (O.P.-C.) covered two forms. In one the two tibial apophyses of the male palp cross each other almost at right angles; in the other they are either nearly parallel or the outer(lateral) apophysis covers the terminal part of the inner(mesial) apophysis. In a recent paper describing species he collected on the West Coast of Greenland, Holm (1967) observes that the latter form is that described by Emerton for Cornicularia clavicornis and found that females associated with this form reveal differences in the shape and size of the epigyne. He figures these differences for the two sexes of both forms, and details a difference in size for both sexes of the two forms declaring that we have, in fact, two closely related but separate species: C.karpinskii (O.P.-C.) and C.clavicornis Emerton.
From information and drawings of a male specimen taken by Mr. A.A.D.la Touche on Helvellyn in Westmorland sent by Mr. G.H.Locket, Holm has referred this specimen to C.clavicornis.

Until then, all specimens taken in Britain have been identified as C.karpinskii (O.P.-C.). The first British male specimen was taken in 1900 at 2,100' on Green Lowther, Lanarkshire, by W.Evans and both sexes were taken shortly afterwards by Dr. Randell Jackson at 2,000' on Helvellyn in Cumberland, all the specimens being identified by O.P.-Cambridge (1902). Since that time, the species has been recorded occasionally by various collectors from high ground in Snowdonia, The Lake District,

The Pennine Range and the Scottish Highlands: Bristowe (1939), Cherrett (1964), Duffey (1963), Parker (1964), Locket & Millidge (1953 and 1958).

A large number of specimens came into my possession through the kindness of Mr. Michael Nelson of the Nature Conservancy. He was using pitfall traps on Moor House National Nature Reserve on the Westmorland Pennines at 1,875' in the year 1964, at which time it was noticed that the tibial apophyses of the male palps did not quite conform with the figures for C.karpinskii given by Locket & Millidge (1953). In reply to my query Mr. Locket agreed with these observations and kindly sent to me the page from his record book in which he had previously noted such differences in specimens sent to him from the same locality by Cherrett (1964). He referred me to Holm's observations of 1958.

In view of Holm's paper (1967) it has become necessary to re-examine the available British material to determine how much of this can be referred to C.clavicornis and/or to C.karpinskii. Mr. Locket has examined all the specimens in his own collection and that of Mr. A.A.D.la Touche as well as Evans' original British male specimen (in the Pickard-Cambridge collection at the Hope Department of Entomology at Oxford). He confirms that these are in fact all C.clavicornis Emerton; substantiated by comparison with the Siberian holotype male of C.karpinskii (Type No. 3620) at Oxford.

The writer has examined some 50 specimens of both sexes taken on Moor House National Nature Reserve and a female specimen collected by Dr. Peter Merrett on Malham Moss in Yorkshire. Mr. Rawdon Goodier of the Nature Conservancy has allowed me to examine a male taken at 2,265' on Cnicht, Moelwyn Mts. Caernarvonshire, and two males taken at 2,000' on Y. Llethr, Rhinog Mts. Merionethshire.
Both Mr. Locket and myself have examined the specimens in the Jackson collection in the British Museum (Nat. Hist.) which includes a female collected by Dr. David Lack with the Cambridge University East Greenland Expedition at Cape Dalton in August 1933, and we find all the above to be C.clavicornis Emerton. Dr. W.S.Bristowe, in private correspondence, informs me that he has collected specimens which he then identified as C.karpinskii taken at 2,800' on Aran Fawddwy in Merionethshire, but unfortunately the collection containing these specimens was lost during the last war. As these might also have been C.clavicornis, it would seem that we do not have any available specimens of C.karpinskii recorded from Britain.
The known distribution of C.karpinskii and C.clavicornis as distinct species, is detailed by Holm (1967) for the Holarctic region.

The figures and description for both sexes in Locket & Millidge (1953) for C.karpinskii clearly refer to C.clavicornis. In the present paper, the apophysis of the male palp is figured in two positions as a further and more decisive identification of this species, which is now added to the British list.

Holm (1967) submits that C.karpinskii and C.clavicornis might each prove to have a different geographical and vertical distribution, the former being restricted to a northern limit of Lat.69°, and at lower altitudes. It is interesting to note from Braendegaard (1946) and Leech (1966), that those records for C.karpinskii which we must now refer to

C.clavicornis extend into the far north to within the Polar Circle, beyond Lat.80°.

Only a few other spiders have been taken beyond this parallel and include:

Dictynidae: Dictyna borealis Pickard-Cambridge

Lycosidae: Pardosa glacialis (Thorell)
Tarentula exasperans Pickard-Cambridge

Thomisidae: Xysticus deichmanni Sorenson

Linyphiidae: Collinsia(Microerigone) spetsbergensis (Thorell)
Collinsia thulensis (Jackson)
Erigone psychrophila Thorell
Typhochraestus latithorax (Strand)
Savignia barbata (Koch)
Minyriolus pampia Chamberlin
Hilaira vexatrix (Pickard-Cambridge)
Meioneta nigripes (Simon)

of which E.psychrophila and M.nigripes are recorded for Britain from Scottish mountain summits.

In his excellent paper on the spiders of Hazen Camp, Ellesmere Island, Northwest Territories, Canada (81°49'N, 71°18'W), Mr. Leech fully describes all the species he found and it is interesting to note that all the Linyphiid species he records occur in habitats of high humidity, below stones in gravelly areas, in deep frost heave cracks in the soil, in depressions abounding with sedges and mosses, and that several overwintering species were observed moving under water in snow slush during the spring melt. The food supply in these habitats consists mainly of flightless insects, Collembola and Acarina (Leech, 1966).

Cornicularia clavicornis EMERTON 1882

DESCRIPTION: LENGTH: ♂♀ 2.5 mm. CARAPACE: Brown to deep brown, with faint darker striae; not pitted. Length of carapace ♂ 0.86 - 1.00 mm., ♀ 0.80 - 1.02 mm. (British specimens) ♂ with small bifid horn. ABDOMEN: Grey to black. STERNUM: Brown to orange-brown, suffused with black at margins. LEGS: Tm I 0.50 - 0.53. Brown to orange-brown. ♂ spines extremely small and fine on tibiae I and II. Fine apical spines on tibiae I and II. EPIGYNE: Fig. 1. Two tongue shaped plates, length 0.15 - 0.17 mm. Compare with fig. 2 for C.karpinskii (both figures after Holm) length 0.18 - 0.19 mm. MALE PALP: Figs. 3, 4 and 5. Compare fig. 3 with fig. 4 for palpal tibia of C.karpinskii (after Holm). It will be seen that figs. 3 and 5 of the tibiae show small black teeth on the lateral edge of the basal part of the arm. These teeth may be distinct, very small or absent for both species. Holm states these are not present on the Greenland specimens of C.karpinskii although they are present on the Siberian type at Oxford. Of the British specimens of C.clavicornis in my collection, 70% have distinct teeth, 13% have very small teeth and 17% are without teeth; therefore these are not suitable criteria for the purpose of identification. All the figures in Locket & Millidge (1953) are for C.clavicornis and not C.karpinskii.

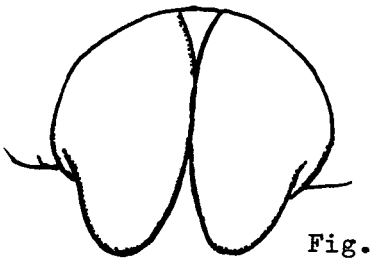

Fig. 1

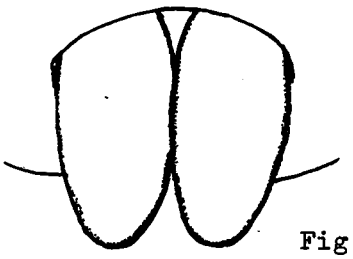

Fig. 2

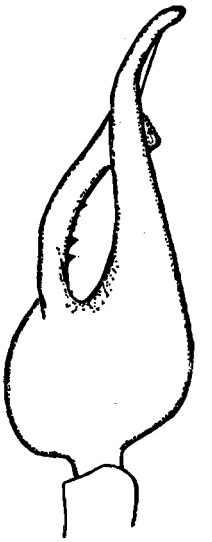

Fig. 3

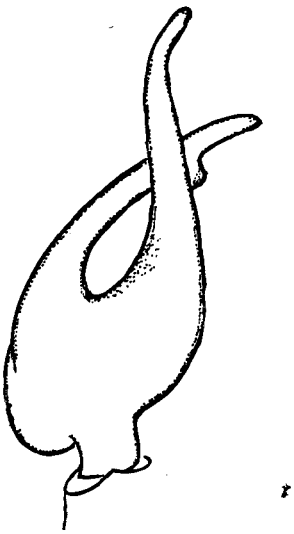

Fig. 4

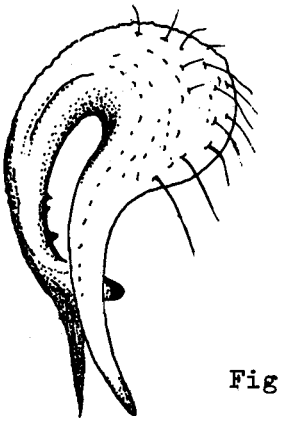

Fig. 5

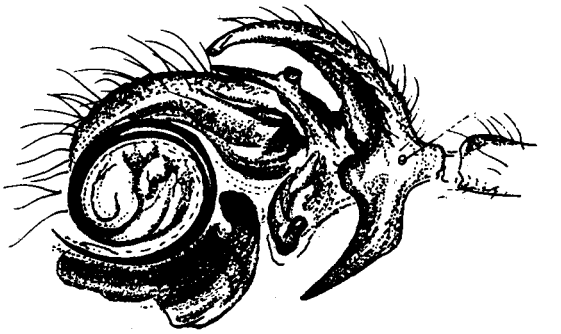

Fig. 6

Cornicularia clavicornis Emerton

Fig. 1 Female epigyne (after Holm).
Fig. 3 Male: Tibia of palp from above (after Holm).
Fig. 5 Male: Tibia of palp from in front.
Fig. 6 Male: Left palp, side view slightly from below.

Cornicularia karpinskii (O.P.-C.)

Fig. 2 Female epigyne (after Holm).
Fig. 4 Male: Tibia of palp from above (after Holm).

ECOLOGY: In Britain the species occurs on high ground, most commonly on a wet Calluna-Eriophorum habitat where Sphagnum is present. The Moor House locality is a Pennine blanket bog of peat on glacial drift. Adults have been taken from March to October, with a peak period between the end of May and the beginning of June. In Arctic regions this peak is a month later. All the specimens from the Moor House habitat were collected by means of pitfall traps, and it is noteworthy that the species was absent in a similar number of pitfall traps concurrently operated on a nearby sheep-grazed stretch of well drained alluvial Festuca-Nardus grassland, where adults of the closely related spider Cornicularia cuspidata (Blackwall) were fairly frequent during the same period.

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ARACHNOLOGISTS OF THE SOUTHWEST

This is the name chosen by a group of professional and amateur arachnologists in southwestern U.S.A. in April 1968. The core of the group consists of about ten to twenty enthusiastic workers in California who live near enough to each other to meet monthly during the collecting season. Some meetings take the form of collecting trips, but often a speaker or discussion leader focuses attention on a particular subject. At one meeting Dr.B.J.Kaston described his black-widow work; at another D. Van Dyke presented his data on *Pardosa sierra* on part of the actual site at which the work was done, a 6,000 ft.-altitude spot in the San Bernardino National Forest. A mimeographed newsletter called AMERICAN ARACHNOLOGY is produced at regular intervals and contains reports on current researches, literature reviews, open letters and short news items. Recent issues have contained a tribute to the late Harriet Exline Frizzell and a bibliography of her published works, also a comprehensive rosta of American arachnologists, giving mailing addresses and current research interests. Dr.Kaston is President of the Society, R.X.Schick Vice-President, M.Thompson the Secretary-Treasurer (Eaton Canyon Nature Study Centre, 1750 N.Altadena Drive, Pasadena, California 91107, U.S.A.) and Dr.C.D.Dondale is editor of the newsletter (Canada Dept. of Agriculture, Research Institute, Box 367, Belleville, Ontario, Canada.). Membership is open to anyone interested in the group's activities. The annual subscription is one dollar.

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