

Notes on Spiders I

by

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Araneus cucurbitinus Clerck and *A. cucurbitinus opistographus* Kulczynski.

In the year 1905 KULCZYNSKI made closer investigations about the small green *Araneus*-species; he gave elaborate and very accurate Latin descriptions and clear figures of the copulatory organs.

According to him we should distinguish three subspecies in *A. cucurbitinus*, described by CLERCK in 1757, viz. *typicus*, *opistographus* and *maderianus*. The question, which subspecies has to be regarded as *typicus* Clerck, is solved by him in this way: if both forms (*typicus* and *opistographus*) occur in Sweden, they have certainly been confused by CLERCK, and it does not matter, which of them we regard as *typicus*. As KULCZYNSKI possessed specimens from Norway, collected by Embrik STRAND and named by him *A. cucurbitinus* Clerck, he considered this subspecies *typicus*, since it is pretty certain that it occurs in Sweden too. The other form, which he knew from Central Europe and Belgium only, he named *opistographus* — this form too occurs in Sweden: cf. TULLGREN, 1952, p. 172. — He possessed but a few specimens of the subspecies *maderianus*, exclusively from Madeira.

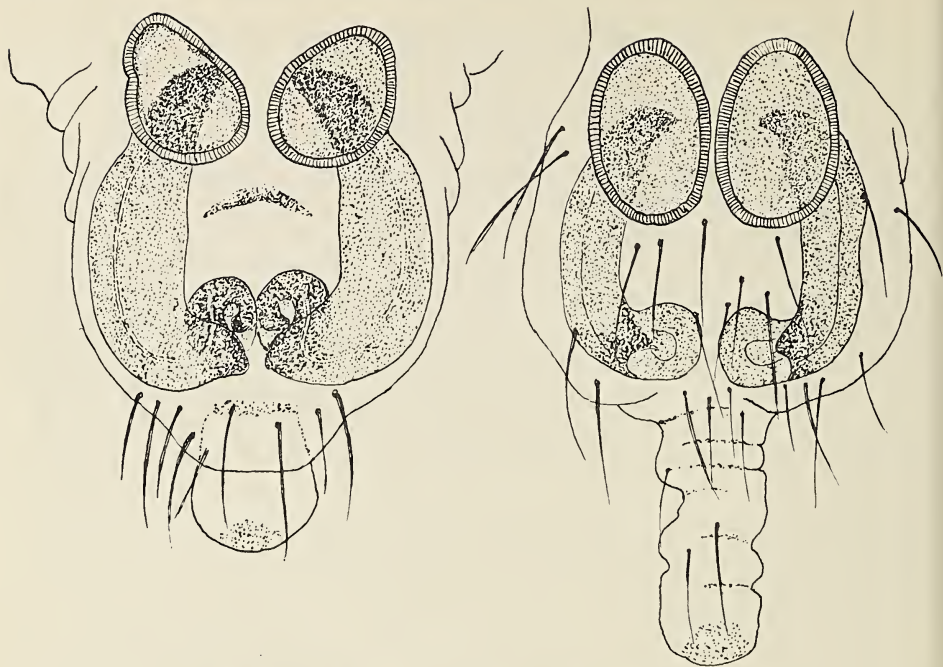
The ♂♂ of *typicus* and *opistographus* can be easily and with certainty discriminated by means of some details of the bulbus genitalis. The clearest distinctive character is the shape of the "retinaculum":

in *typicus* it is strongly and somewhat irregularly curved and it does not attain the cymbium;

in *opistographus* it is feebly and regularly curved and its point is usually covered by the cymbium (cf. descriptions and figures in WIEHLE, 1931, p. 106—108; TULLGREN, 1952, p. 174—175; LOCKET & MILLIDGE, 1953, p. 144—147).

The discrimination of the ♀♀ is not so easy: the epigynes are so strongly alike that even KULCZYNSKI had to admit that sometimes, though seldom, there are specimens of which he could not decide with certainty to which subspecies they belong. The distinctive characters given by him (the shape of the epigyne at the front side and at the back side, the shape of the scapus, the number of the black points at the abdomen) are rather vague, they are not always easily visible, they require material for comparison and some of them are not always constant, as he indicated himself. The same may be said of the figures and the distinctive characters given by WIEHLE, TULLGREN and LOCKET & MILLIDGE; the latter authors suggest the possibility "... that we have to do here with a dimorphic male only" (l.c., p. 145). BERLAND & FAGE (2nd edition of SIMON's treatise) even go so far as to say about the variety *opistographus*: „les caractères qu'il [KULCZYNSKI] en donne sont si légers (parfois même inappréciables) qu'ils paraissent plutôt individuels" (1929, p. 694, note 1).

If the copulatory organ, however, is detached from the body — an easy manipulation in these species —, and for a short time put into a strong solution of caustic potash — preferably in the natural position, i.e. the upper side up —, it can immediately and with certainty be decided to which subspecies the animal belongs.



Left : Vulva of *A. cucurbitinus typicus* Clerck, $\times 100$.
 Right : Vulva of *A. cucurbitinus opistographus* Kulczynski, $\times 100$.

The following distinctive characters then appear (cf. figures):

- 1) In *opistographus* the length of the scapus is much greater than the width (sometimes the scapus is somewhat folded up, it can be stretched out by means of a needle; this fact accounts perhaps for the opinion of KULCZYNSKI that in this form the length of the scapus may be either much or little greater than the width; I found only specimens with a long scapus), the shape is somewhat variable; in *typicus* the length of the scapus is only little greater than the width or equal to it, in this form the scapus cannot be stretched out.
- 2) In *opistographus* the horseshoe-shaped chitinous plate of the vulva is rather narrow and leaves a large margin at the outside; in *typicus* it is large and it nearly attains the margin of the epigyne.
- 3) In *opistographus* there is no dent in the "fovea" (by means of this word KULCZYNSKI indicated the space between the two arms of that plate); in *typicus* there is one.
- 4) In *opistographus* the receptacula seminis are almost perfectly elliptical and they touch each other; in *typicus* they are egg-shaped, somewhat irregular and they do not touch each other.

The accurate details of the receptacula and the chitinous plate in the figures are drawn after microscopic slides prepared with Canada balsam; these details are but faintly visible in fresh dissections, lying in caustic potash or in lactic acid.

KULCZYNSKI would have considered both forms distinct species if he did not possess some specimens from Madeira, which are somewhat intermediate between *typicus* and *opistographus*. He could not distinguish the ♀♀ of this form from

the ♀ ♀ of *opistographus* (with short scapus) — he possessed, however, as he says, only two specimens of this form and they were not preserved faultlessly —. In the ♂ ♂ the "retinaculum" of the bulbus can scarcely be distinguished from that of *opistographus*, some other parts of the bulbus, however, resemble more those of *typicus* — he possessed but two ♂ ♂ of this form —. According to him more accurate investigations would perhaps decide, whether *typicus* and *opistographus* are two distinct species or two varieties only; in possible further investigations I think it necessary that the internal copulatory organs of the ♀ ♀ should be taken into account as well.

It seems that *typicus* and *opistographus* occur in the same places and that they are adult at the same time (cf. SIMON, l.c., p. 694, note 1; WIEHLE, l.c., p. 108; TULLGREN, l.c., p. 170, 172; LOCKET & MILLIDGE, l.c., p. 145; — my own observations too point to this conclusion —). It is possible, however, that differences will appear concerning the ecological conditions preferred by each form and the time at which it attains maturity, if greater accuracy is applied in collecting the specimens.

References

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Late vlinders in 1954. Op 3 October ving mijn vrouw hier in Rotterdam een redelijk gaaf ♀ van *Thymelicus lineola* O., dat nog een paar dagen in leven bleef, maar waarschijnlijk geen eieren legde. Op dezelfde datum vonden we een volwassen rups van *Aglais urticae* L. Op de naburige brandnetels was geen enkel exemplaar te vinden. De rups verpopte een dag later en werd buiten bewaard. Vermoedelijk was het dier bij zijn familie achter geraakt, want op 17 October zag ik op dezelfde vindplaats twee Kleine Vosjes, waarvan er één zo vers was, dat hij net kon vliegen.

Mijn pop kwam pas op 1 November uit, bij een temperatuur van 16° C. De uitgezakte vlinder klom nog dezelfde avond omhoog en bleef sinds die tijd vrijwel bewegingloos zitten.

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Semiothisa clathrata L. Volgens TER HAAR-KEER is de vlinder op hoge, droge gronden, zoals Apeldoorn, niet te verwachten. Volgens LEMPKE, Cat. Ned. Macrolep., p. (814), mijdt de vlinder de droge zandgronden niet geheel, maar ontbreekt daar toch op vele plaatsen. De conclusie is dus, dat *clathrata* niet van droge terreinen houdt. Edoch, in 1954 trof ik de vlinder vrijwel overal om Apeldoorn op zeer droge zandgronden aan. Heeft hij nu zijn tegenzin voor de droogte opgegeven, of hebben de snuffelaars van vroeger hem over het hoofd gezien en zat hij toch hoog en droog?

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Gevraagd: een Zeiss-tekenprisma. Aanbiedingen met prijsopgave aan:

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