

Unusual epigynes of *Pardosa* (Araneae: Lycosidae) - aberration, hybridisation or new species?

Gernot J. BERGTHALER

Institute of Zoology, Faculty of Natural Sciences, Paris-Lodron-University of Salzburg,
Hellbrunner Str. 54, A-5020 Salzburg, Austria.

Key words: Araneae, Lycosidae, *Pardosa*, aberration, hybridisation, new species.

ABSTRACT

Two female specimens of the genus *Pardosa* which cannot be assigned to any known species are described and illustrated. Morphological characters are compared with related European species of the *Pardosa monticola*-group.

INTRODUCTION

While investigating the epigeic spider fauna of a newly planted hedgerow near Schwand im Innkreis, Upper Austria, (Bergthaler 1996a, b), two unknown female specimens of the *Pardosa monticola*-group were captured. Their strangely shaped epigynes may be a result of aberration, hybridisation or they may represent a new species.

MATERIAL AND METHODS

The spiders were captured using 4 % formaline solution and were preserved in 75 % ethyl alcohol. The vulvae were prepared in heated 5 % KOH. The material is deposited in my private collection.

RESULTS

Differences between the two specimens can be found either in the colour pattern of the prosoma or in the proportions of the epigynes.

Both specimens A and B have a carapace 3.1 mm long and 2.3 mm wide. The body length of each specimen is 6.5 mm. The lateral light bands on the carapace are broken three times in specimen A, whereas they are continuous in specimen B. The median light band of carapace is clearly dilated behind the posterior eyes in specimen A only.

The different proportions and the shape of epigynes can be seen in figures 1 and 2. While the epigyne of specimen A is 0.5 mm long and 0.4 mm wide, the one of specimen B is 0.7 mm long and 0.6 mm wide. The posterior part of the epigyne is very similar in both specimens.

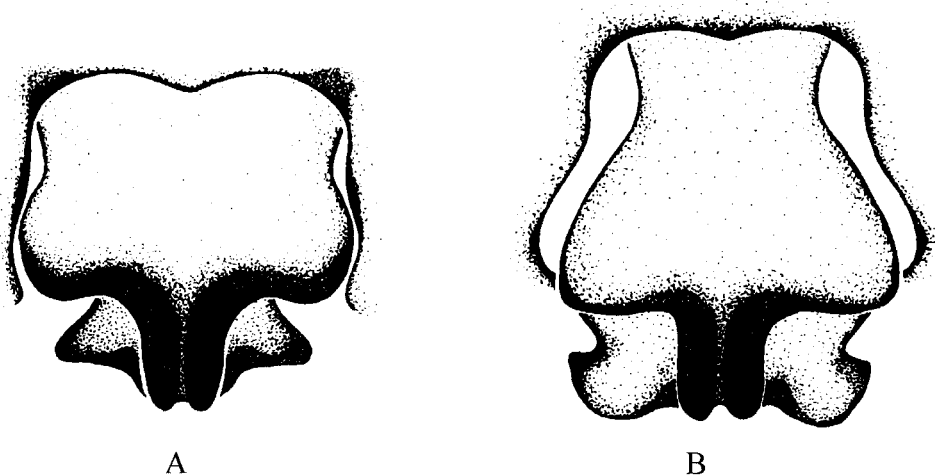


Fig. 1. Epigyne of specimens A and B.

DISCUSSION

Among the species of the genus *Pardosa*, those of the *monticola*-group are distinguished from all the others, but within this group they are morphologically similar (Tongiorgi 1966a). The specimens presented here show, however, significant differences in the shape of their epigynes when compared with other representatives of the group. Since the vulvae look like that of *Pardosa palustris* (Linné, 1758) (Dahl & Dahl 1927: fig. 125, sub *Lycosa tarsalis*; own observations), it can be assumed that these epigynes are aberrations of this species. *P. palustris* shows continuous lateral bands, whereas in *P. agrestis* (Westring, 1861) these can be both continuous or broken (Locket & Millidge 1951; Tongiorgi 1966a, b; Roberts 1985; Heimer & Nentwig 1991). So, are the epigynes aberrations of *P. agrestis*, although or just because the vulvae do not look like the one of this species (Dahl 1908: fig. 70, sub *Lycosa agrestis*; own observations)? It could also be the case of hybridisation, the result of heterospecific mating in wolf spiders, as known to occur between closely related species in captivity (Kronestedt 1994). Since a male with comparable strangely shaped copulatory organs has not been found, the status of the specimens should be cleared after representative material of both sexes is found.

Acknowledgements

Dr. Christian Kropf (Natural History Museum, Bern) provided valuable advice and continuous support. Dr. Torbjörn Kronestedt (Natural History Museum, Stockholm) and Univ.-Doz. Dr. Konrad Thaler (Institute of Zoology, Innsbruck) are acknowledged for their comments on these two unidentified spiders.

REFERENCES

- Bergthaler G. J. 1996a. Die Besiedelung einer neugepflanzten Feldhecke durch epigäische Spinnen (Arachnida: Araneae). Ein ökofaunistischer Beitrag zur Kenntnis von Spinnenzönosen agrarwirtschaftlicher Intensivflächen (Schwand im Innkreis, Bezirk Braunau, Oberösterreich). Diplomarbeit, Naturwissenschaftliche Fakultät der Universität Salzburg, 110 pp.
- Bergthaler G. J. 1996b. Preliminary results on the colonization of a newly planted hedgerow by epigeic spiders (Arachnida: Araneae) under the influence of adjacent cereal fields. *Rev. suisse Zool.*, **vol. hors série**: 61-70.
- Dahl F. 1908. Die Lycosiden oder Wolfspinnen Deutschlands und ihre Stellung im Haushalte der Natur. Nach statistischen Untersuchungen dargestellt. *Nova acta, Abh. der Kaiserl. Leop.-Carol. Deutsch. Akad. Naturf.*, **88**(3): 175-678.
- Dahl F. & Dahl M. 1927. Die Tierwelt Deutschlands und der angrenzenden Meeresteile nach ihren Merkmalen und nach ihrer Lebensweise, 5. Teil - Spinnentiere oder Arachnoidea. II: Lycosidae s. lat. (Wolfspinnen im weiteren Sinne). Verlag Gustav Fischer, Jena, 80 pp.
- Heimer S. & Nentwig W. 1991. Spinnen Mitteleuropas. Ein Bestimmungsbuch. Paul Parey, Berlin & Hamburg, 543 pp.
- Kronstedt T. 1994. A case of heterospecific mating in wolf spiders (Araneae, Lycosidae). *J. Arachnol.*, **22**: 84-86.
- Locket G. H. & Millidge A. F. 1951. British spiders. Volume I (reprinted 1986). Ray Society, London, 310 pp.
- Roberts M. J. 1985. The spiders of Great Britain and Ireland: Volume 1. Harley Books, Colchester, 229 pp.
- Tongiorgi P. 1966a. Wolf spiders of the *Pardosa monticola* group (Araneae: Lycosidae). *Bull. Mus. comp. Zool.*, **134**(9): 335-358.
- Tongiorgi P. 1966b. Wolf spiders of the genus *Pardosa* (Araneae: Lycosidae). *Bull. Mus. comp. Zool.*, **134**(8): 275-334.