

A remarkable strategy for winter survival in adult *Trochosa ruricola* (De Geer, 1778) (Araneae, Lycosidae).

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Introduction

Some adult lycosid spiders may construct silk hibernacula or winter retreats. One such hibernaculum was discovered under the bark of a dead willow tree close to river level in the River Avon valley during February 2018.

Discussion

Apart from web-making, spiders utilise silk in a variety of ways, e.g., for ballooning, wrapping, constructing egg-cocoons and trap doors. An example of the lycosid spider *Trochosa ruricola* (De Geer, 1778) was found inside a silken cell under the bark of a Crack Willow *Salix fragilis* L. at Birlingham, Worcestershire (SO94 12 m. O.D.) on 11 February 2018. It had already survived inundation from seasonal flooding. Rather like beetles that construct water-repellent air cells in wood or on the ground it is presumed that the coarse strong silk mesh was able to maintain an air-reservoir inside it that resisted the ingress of water and formed a secure winter retreat.



01. *Trochosa ruricola* in originally closed silken winter cell encapsulated in fluvial silt and detritus. Birlingham, Worcestershire, 11 February 2018.

More significantly however it was observed that when flood water first passed over the cell during February 2018 it distributed fine silt all over the surface of the silk and apparently sealed it. This was retained by adhesion along with various other detritus and some floral bracts of willow (01) ultimately creating an impervious silt-covered capsule which would, coupled with the protection offered by the dead bark of the tree, have provided a secure highly cryptic hibernaculum.

Conclusion

This observation represents an unusually fine-tuned and almost perfect example of linkage between the behaviour of an invertebrate and environmental processes, the two interacting independently to ensure the survival of a species living in an environment subject to unpredictable fluctuation.