

## **POSSIBLE FIRST EVIDENCE THAT SLOW WORMS (*ANGUIS FRAGILIS* LINNAEUS, 1758) FEED ON ANT COLONIES**

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### **Abstract**

A slow worm *Anguis fragilis* Linnaeus, 1758 was discovered eating an ant larva. In the Burren, Ireland, these lizards often lying partly or wholly buried in the perfectly churned soil that the ants conveniently manufacture under shelters. This behaviour may provide an opportunity to feed on ant larvae in the colonies.

**Key words:** *Anguis fragilis*, slow worm, Ireland, Burren, diet, ant larva, Formicidae.

### **Introduction**

There is a population of slow worms, the legless lizard, *Anguis fragilis* Linnaeus, 1758 (Squamata: Anguinae), in the glacial karst landscaped Burren region of Counties Clare and Galway in the west of Ireland (Parry, 2020). My search for this species began in September 2015 with my first live discovery. In 2022, it is still continuing some 1,870 encounters later. Being cold blooded, lizards require the heat of the sun to warm their bodies but rather than bask directly in the sun as is the usual habit of lizards, slow worms prefer to lie beneath sun-warmed objects such as flat rocks, pieces of wood, decomposing vegetation and debris discarded by humans. This preference by slow worms makes possible the use of artificial cover objects (ACOs). These covers can then be positioned in suitable locations to encourage their use instead of their natural equivalents.

When discovered by slow worms the covers, which commonly consist of corrugated tin, hardboard, carpet, and roofing felt (Riddell,1996), are used as natural objects for thermoregulation, rest, and safety.

The diet of the slow worm consists of a variety of invertebrates with a particular preference for the Netted Slug (*Deroceras reticulatum* (O. F. Müller 1774)) (Inns, 2009) and on several occasions, upon lifting a cover I have discovered a slow worm in the process of consuming a slug (Plate 1).

### **Slow worms feeding on ants (Hymenoptera: Formicidae)**

The relationship between slow worms and ants is well established as both species seek out the same environment and conditions to exist and artificial covers placed to encourage use by

slow worms, are an equally convenient alternative for both species. Within a very short time, often just hours, an item placed to encourage slow worm use is likely to show the initial signs of ant infestation, the beginning of a colony that may exist there for some years. Should the cover be appropriately placed close to a dry-stone wall or hedgerow for example and positioned to receive some sunshine, the ants may soon be joined by slow worms that will initially lie apparently peacefully often amidst a roiling mass of ant activity.

The slow worm being semi-fossorial benefits from this association not only by lying partly or wholly buried in the perfectly churned soil that the ants conveniently manufacture but also by retreating into this tilth at a sign of danger. Known to normally hibernate underground (Inns, 2009), it is likely that some slow worms hibernate within this tunnelled, soft earth. A known female that has been found beneath the same tin sheet over seven successive years is often discovered in late February or early March almost totally immersed in the ant worked soil. Juveniles born in late summer and recognisable by their head markings, that spent their time in the honeycomb of ant workings and runnels until hibernation, are often the first to re-appear there in early spring having most likely overwintered there.

Knowing that slow worms eat a variety of invertebrates raises the question of whether they feed on the constituents of the colony. Despite cohabitation, the published opinion is that the inclusion of ants in a slow worm's diet is unknown but unlikely. Frazer (1983) 'Ants are apparently not eaten despite the presence of slow-worms in their nests'. Smith (1951) 'Ants have not been recorded as forming part of a Slow-worm's diet although on many occasions Slow-worms have been found in ant's nests'. Beebee and Griffiths (2000) appeared unsure 'Slow-worms are often found lying within ant's nests but it is unlikely that these insects form a major component of the diet'. Street (1979) 'Although found in ants' nests it does not appear to feed on them'

Ants are capable of biting and acid attack neither of which would affect the hard outer body of the slow worm but may make the consumption of an adult ant unpleasant. Street (1979) 'Occasionally it may be found in anthills, being well protected by its tough skin and the underlying bony plates. It appears to be the only vertebrate capable of surviving such conditions.' However, upon lifting a corrugated tin cover, a photograph of a slow worm lying in a nest of *Formica* sp. may cast an element of doubt on this assumption. (Plate 2). Unnoticed by the author until the downloading and examination of the image, it appeared that the slow worm was possibly consuming an ant larva.

## **Discussion**

Gibson (2022) states that ant larva are not completely inactive; they are capable of movement. Some species of ant larvae have been shown to sway to attract the attention of

passing workers in a behaviour that has been described as begging.

By contrast, ant eggs are static and as such would not attract a slow worm which require movement of their prey to induce a strike, but the nutritious larva, with their slight wriggling or swaying action would surely be acceptable. It may be a coincidence that the larva just happened to be so positioned though for such an immobile being how did it arrive in that position? The larva is clearly in or near the slow worm's mouth and on top of its body. According to available literature, ant larvae do not walk, climb, or jump. Perhaps a conclusion can only be reached by the examination of stomach contents.

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**PLATE 1.** Slow worm eating a slug. Burren, Ireland, 21 April 2019. Photograph: Nick Parry.



**PLATE 2.** Slow worm eating an ant larva. Burren, Ireland, 16 June 2022. Below, detail from the main photograph. Photograph: Nick Parry.