

Fauna regarded as domestic pests in the Maltese Islands (4)

The Bed Bugs

By Arnold Sciberras

Instead of going to bed after a long day to get a goodnight sleep and well deserved rest, this period off can easily turn into an itching nightmare if accompanying you in bed is the creature this article is dedicated to.

Bedbugs are small, elusive, and parasitic organisms all belonging to a family of insects called Cimicidae. They live strictly by feeding on the blood of humans and other warm-blooded animals (such as other mammals and birds). The name 'bed bug' is derived from the insect's preferred habitat, infesting houses and especially beds or other common areas where people may sleep. These insects may also be found on carpets and other areas where host is present. Bedbugs, though not strictly nocturnal, are mainly active at night and are capable of feeding on their hosts without being noticed. The number of species of bedbugs has been estimated to be anywhere between 75 and 108. Most species only feed on humans when other prey is unavailable. In Malta the species number is yet unknown but the most cosmopolitan species are presumed present. The only species till now recorded locally is *Cimex lectularius*. The latter locally is mostly found in hotels but recently populations have exploded and several cases were reported from private homes. Bedbugs are true insects and not arachnids, unlike other pests such as dust mites and ticks.

Adult bedbugs are reddish-brown, flattened, oval, and wingless. Bedbugs have microscopic hairs that give them a banded appearance. A common misconception is that they are not visible to the naked eye. Adults grow to 4–5 mm in length and 1.5–3 mm in width. They do not move quickly enough to escape the attention of an observer. Newly hatched nymphs are translucent, lighter in color and become browner as they moult and reach maturity. They use pheromones and kairomones to communicate regarding nesting locations, attacks, and reproduction.

The life span of bedbugs varies by species and is also dependent on feeding. Bedbugs are bloodsucking insects. They are normally out at night just before dawn, with a peak feeding period of about an hour before sunrise. Bedbugs may attempt to feed at other times if given the opportunity and have been observed feeding during all periods of the day. They reach their host by walking, or sometimes climb the walls to the ceiling and drop down on feeling a heat wave. Bedbugs are attracted to their hosts by warmth and the presence of carbon dioxide. The bug pierces the skin of its host with two hollow feeding tubes. With one tube it injects its saliva, which contains anticoagulants (so blood will not clot) and anesthetics (so you don't feel them), while with the other it withdraws the blood of its host. After feeding for about five minutes, the bug returns to its hiding place. The bites cannot usually be felt until some minutes or hours later, as a dermatological reaction to the injected agents, and the first indication of a bite usually comes

from the desire to scratch the bite site. Due to their natural aversion for sunlight, bedbugs come out at night.



All bedbugs mate via a very cruel like process called traumatic insemination. Instead of inserting their genitalia into the female's reproductive tract as is typical in copulation, males instead pierce females with hypodermic genitalia and ejaculate into the body cavity

Although bedbugs can live for a year or eighteen months without feeding, (1 species purportedly up to three years) they normally try to feed every five to ten days. Bedbugs that undergo dormancy due to lack of food often live longer than a year, while well-fed specimens typically live six to nine months.

Bedbugs travel easily and quickly along pipes and boards, and their bodies are very flat, which allows them to hide in tiny crevices. In the daytime, they tend to stay out of the light, preferring to remain hidden in such places as mattress seams, mattress interiors, bed frames, nearby furniture, carpeting, between the pages of books, baseboards, inner walls, tiny wood holes, and/or room clutter. Bedbugs can be found solitarily, but will more often congregate in groups once established. They tend not to travel further than 30 meters from their host to feed and will usually remain close to their blood supply in the same bedroom or living quarters where people sleep.

Exact nesting locations of a typical infestation can vary greatly as bedbugs will often attempt to hide themselves within a wide range of tiny areas or spaces, within cracks and crevices, or simply in darker locations where they are out of plain sight. Such hiding spots may not always be immediately obvious to an inexperienced searcher – although bedbugs will indeed be much easier to find and locate once an infestation has become concentrated. A standard mattress, however, is most likely to house bedbugs along the sewn piping material running along the outer edges on both the top and bottom sides of the mattress. Bedbugs may also quietly nest themselves under the cover of various materials and lie completely still for long periods making detection even more difficult.

The potential places where a typical bedbug may choose to hide are numerous. It is, however, very common for bedbugs to nest in whatever furniture it is that a person sleeps and naps on— which is not at all limited to beds, but also includes upholstered chairs, loveseats, sofas, plush furniture, futons, etc., as well as other non-traditional beds such as camping cots, floor pads, hide-a-beds, bean bags, cradles, etc. Bedbugs will attempt to nest in any of these sleeping structures if given the opportunity and will take cover in nearby areas as well (sleeping directly on the floor, for example, may cause them to feed but then nest in the nearby carpeting and furniture). Bedbugs tend to want to hide as close as possible to where they feed. If a person sleeps on a couch in a room where bedbugs are present, for example, then it could be generally expected that the bedbugs in the given room would quickly find their way onto the sofa as well as onto the sleeping person where they may then feed (i.e. unless the couch had been effectively segregated or isolated beforehand to prevent bedbugs from crawling onto it). Then, upon the sleeping host providing a blood meal, it could be expected that the engorged bedbugs will attempt to make the couch itself their nesting location; with the bugs congregating under the sofa, in the seams and folds of the fabric, in the crevices, in the creases atop and behind the headrest, amongst the armrests, in the cushions, in the wooden assembly, etc. Usually bedbugs do not wander too far from their meal. And this process of searching out a host, honing in to feed, then hiding in immediate and nearby crevices can take place over the course of a single night and, in such a manner, a couch or an upholstered chair may become heavily infested with bedbugs within a very short time.

Reactions to bedbug bites may appear indistinguishable from mosquito bites although they tend to last for longer periods. Bites may not become immediately visible and can take up to nine days to appear. Bedbug bites tend not to have a red dot in the center such as is characteristic of flea bites. A trait shared with flea bites is tendency towards the pattern of sequential bites often aligned in rows of three. This may be caused by the bedbug being disturbed while eating and relocating half an inch or so further along the skin before resuming feeding. Alternatively, the arrangement of bites may be caused by the bedbug repeatedly searching for a blood vein.

To be cited as : SCIBERRAS, A. (2013) Fauna regarded as domestic pests in the Maltese islands (4) – The Bed Bugs.

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