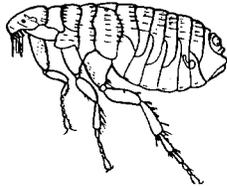
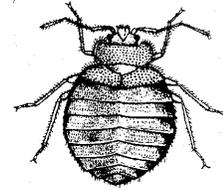


Unseen Biting Bugs

by Walter Reeves, The Georgia Gardener



Flea



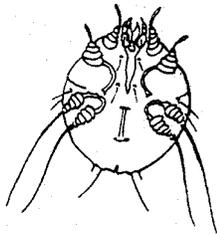
Bed Bug



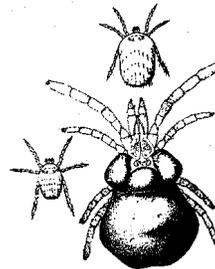
Blackfly



Biting Midge



Human Itch Mite

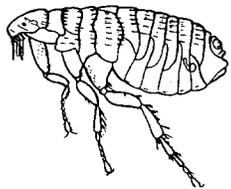


Chigger Mites

Unseen biting bugs can be one of the most frustrating irritations for citizens and medical professionals. When a sharp stinging sensation on the skin occurs, an insect is suspected. When red bumps appear, one might become convinced that only an insect could cause this problem. In fact, often both the stinging sensation and the skin reaction can be caused by other things. Insects are not always the cause of this problem.

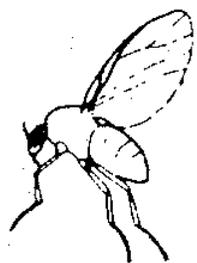
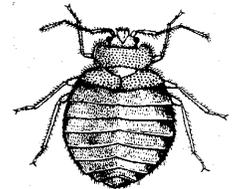
If the cause of the "bite" can't be seen, it is difficult for anyone other than an experienced doctor or dermatologist to find the real cause of the skin irritation. It is always best to consult a medical professional before using pesticides to kill suspected insects. There may be no insects present at all; pesticides may make the skin irritation worse!

Following is a list of some of the insects that might cause skin irritation:



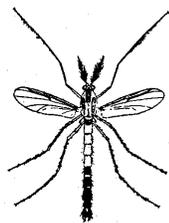
FLEAS are usually associated with cats or dogs in the house. Absence of the animals, such as when on vacation, will often cause an upsurge of a hungry population waiting to greet the home owner on his return. Fleas may be especially plentiful around areas when the animal has commonly rested - as on rugs or upholstery. They most often bite around the legs and ankles. The bites are immediately felt, but tend to become increasingly irritating and sore for up to a week. A small red spot usually appears at the bite site surrounded by a red halo with little swelling.

BED BUGS are oval, flat, rusty-red and about 1/5 inch long. They feed only at night and are found most commonly in the cracks and crevices of the bed and in seams and tufts of the mattress. Blood spots on the sheets are common. The bite is painful and produces a lump or swelling, but with no red spot or other distinguishing characteristics such as produced by the bites of fleas or fire ants. Bedbugs have a distinctive odor and are usually associated with poor sanitation. Today, bedbugs are not commonly found in the U.S.. However, they can be introduced into the "best" of households by importing furniture and other items from areas where bed bugs are more common - such as Mexico or other Latin American countries. Travelers to these countries may bring bed bugs back with the luggage.



BLACKFLIES of both sexes feed mostly on the nectar of flowers. Females may also suck blood. They tend to bite where clothing fits snugly against the body, therefore they often leave a ring of bites just above or below the belt line. The site of the bite is typically a small, red, central spot, surrounded by a slightly reddened, swollen area. The bites become increasingly itchy, swollen and irritated for several days. For its size it's a painful biter.

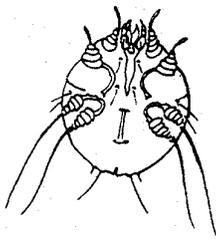
Black flies are tiny, heavy set, humpbacked gnats. The immature forms attach to rocks and vegetation in swiftly flowing streams. Clean water and high oxygen are requirements. It is for this reason they are common in hilly or mountainous areas. Unlike mosquitoes and biting midges, they are strictly outdoor pests and they bite during the day.



BITING MIDGES, "NO-SEE-'UMS" are very tiny gnats that feed on warm blooded animals and man. Some species are small enough to pass through ordinary window screens. They usually feed at night. Biting midges are often a problem in coastal or mountainous areas. They are vicious biters whose bite often causes severe pain. Welts and lesions may persist for days.

MITES

Most complaints of biting "insects" that cannot be seen usually are caused by mites. Mites have a saliva that is an irritant and often causes a weal or reddened swelling. Scratching can break the bump and cause an infection - masking the original cause. After a period of infestation, some individuals can become sensitized and will develop a skin irritation when later exposed to only a few of the same living or dead mites. These are often difficult to see without a magnifying lens, and can come from a variety of sources.



Human itch mite is a parasitic mite that lives in and on the skin of man. There are other varieties that parasitize other mammals and birds. A temporary infestation may sometimes occur in man with mange mites from other sources, such as a dog mange mites.

This mite causes intense itching. This usually begins about a month after the initial invasion. The delay is apparently due to the time required for the host to develop sensitization to the parasite. A rash (called scabies) develops over much of the body, and does not necessarily coincide with the location of the mites. A few mites between the fingers can cause a generalized rash over the body. The female itch mite mates on the skin surface with a male, then burrows into the skin where she deposits her eggs. The most common sites for tunneling are where there are skin folds, such as the hands (between the fingers) or wrists, elbows, back of the knees, feet and ankles, under breasts of females, and in the genital region. The female lives from 2-6 weeks and dies in the burrow. The burrow may be 1/2 to 3/4 inch long, and appears as a fine, wavy, dark line. After hatching the larval mites migrate to the skin surface and live there until they become adults. Following mating, females burrow into the skin to renew the cycle.

Regular bathing with soap and water will remove many of the surface living mites. Most mites die within 24 hours when off their host. Mites become most active at night from the warmth in the bed; intense itching results - with loss of sleep. Transmission is usually through intimate personal contact, usually sleeping in bed with an infested person resulting in the transfer of an adult fertilized female mite from one individual to another. People are more likely to become infested when living in crowded quarters, such as slums or jails and where regular bathing is restricted.

Treatment for mites should be under the direction of a physician. Failure can result due to incomplete treatment, or not treating others who are infested or who have not yet shown the symptoms of an infestation. Secondary infection from scratching is not uncommon, and may mask the original cause. Even after successful treatment, itching may continue for several weeks in some individuals due to dead mites and eggs in the skin. Once an individual has been sensitized following the initial infestation, a later invasion may give allergic reaction with intense itching, redness and rash over much of the body even though there may be only a few mites present.

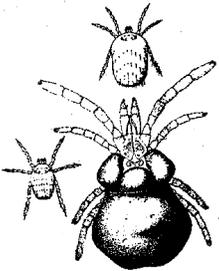
Rodent or bird mites - The presence of rats, mice or birds may suggest various species of mites that will bite man - especially if control efforts have removed the normal host and the mites are wandering in search of a new host.

The **tropical rat mite** is the most common mite reported causing "unknown bites". It is normally a pest of rats, mice and hamsters. Both the nymphs and adults of the tropical rat mite need blood meals to complete their life cycle. They usually feed at night and live in cracks or dark places until the next meal. They often hide near a source of heat - such as hot water pipes and stoves. Bites can't be distinguished from flea bites (red spots on the skin) and sometimes are mistaken for scabies. Attacks may occur around industrial areas - especially following rat control. There is a sharp itching pain at the time of attack. Some people are very sensitive and may get a severe dermatitis. Scratching may cause secondary infections.

Chicken mites are a pest of chickens, English sparrows, starlings, pigeons and other birds. Where nests are near dwellings the mites may enter through windows and other openings to attack man. The bite of this mite causes painful skin irritation. The adults can live without a blood meal for 4 to 5 months. The mite is often associated with people working with poultry.

The **straw itch mite** is actually beneficial since it normally sucks the juices of various larval grain and cereal insects. The mites will attack and bite man, causing a small blister surrounded by a red area that may be up to two inches or more in diameter. Working with or sleeping on straw, hay or grain is a common way to pick them up. It is also associated with beans, peas, cowpeas, cottonseed and other materials infested with insect larvae that these mites attack. There is a prickling sensation at the time of the bite, but skin irritation and itching is delayed for 10-28 hours.

Chigger mites are a reddish mite that only feeds on man and other animals in the larval stage. They are particularly abundant in areas where wild birds and rodents are found - as in berry patches and tall grass. The red mites may crawl around the skin surface for some hours after the initial contact before feeding. Intense itching occurs 3-6 hours after exposure and can last a week or longer. The dermatitis consists of blisters and wheals (raised red areas). They seem to prefer skin sites where the clothing is restrictive - such as the waist or ankles. Most people have been exposed to the chigger mite frequently enough to recognize the cause of this dermatitis. The mites suck juices (not blood) from the skin and then drop off. They do not burrow into the skin as many believe. A soapy bath after exposure can remove many that have not yet fed. They are usually already gone when the itching begins.



Clover mites don't bite, but these rather large red mites can migrate into homes, especially in the fall, in large numbers when they are looking for shelter, and again in the spring when they attempt to leave and return to the outside. They can crawl on individuals and induce itching and possible complaints of "biting". These mites are usually easily identified due to their size, red color, and appearance in large numbers through windows, doors and other openings in the building.

Newly established lawns that have been heavily fertilized and lawns that come up to the edge of the building are commonly associated with clover mite invasions. As the lawns age (and usually get less fertilizer) and ornamental plants replace turf along a building the clover mite problem usually declines.

Stored products mites Many different species of mites can infest grain, flour, meal, dried meat, hams, dried

fruit, cheese, dried insects and similar products. Millions of these mites may develop in a few weeks. This is usually associated with a high moisture content and temperature of the product. Individuals handling these products can get skin reactions (contact allergy or bites). These mites are sometimes known by the occupation that handles the product, such as "grocers' itch" from those who handle cheese, or "bakers' itch" from grain.

Animal hair used in the stuffing of upholstery can be a source of mites. Antique chairs were sometimes stuffed with horse hair.

Collection Methods

Several methods can be used to attempt to collect and identify "unseen" biting insects or mites.

- a. A **cotton swab** dipped in rubbing alcohol can be brushed over the skin when a "bite" occurs, or over a hard surface where mites or insects are seen. The swab is then swished around inside a small bottle of alcohol. This should be done a number of times to increase the chance of picking up the pest. If large surfaces are involved, a small paint brush can be used instead of a cotton swab.
- b. A **vacuum cleaner** with a new (empty) bag can be used to vacuum floors, furniture and other surfaces where the pest is suspected to occur. The vacuum bag should be sealed in a plastic bag and delivered early in the week to the county agent's office. It is essential that it be sent to the entomology specialist as soon as possible since any arthropods must still be alive to be separated out of the debris.
- c. **Sticky traps**, such as used to trap cockroaches, can be placed around an area to collect crawling insects.
- d. **Scotch tape** is often used but is **not recommended**. Small arthropods are difficult to see through the gum and tape. Movement of specimens for identification is often difficult without risk of breaking up the specimen.

USE OF PESTICIDES

If one suspects that an insect is causing a skin irritation, an first reaction might be to spray the room or area with insecticide.

The use of an insect poison before the insect has been positively identified is not recommended.

Tiny insects or mites are difficult to kill with insecticides, because they are so small. They must be identified first, so one can determine if your symptoms are caused by an insect or by something else. Exposing the skin to pesticide may result in irritation - which may complicate finding the real cause of the symptoms.

Things That Mimic Insect Bites

Sometimes there are complaints of insect "bites" which cause a skin reaction, but the reaction is actually caused by physiological factors (being too warm or dry), physical phenomena (static electricity), psychological state (stress - anger or anxiety), or disease.

The Extension Service has the expertise to assist with the identification of insects and mites. The information we provide may also help eliminate these creatures as the source of a particular problem. If no insects or mites are found, the expertise of a medical doctor is needed. The following is given only to make you aware of the general diversity of the problem.

One author has listed 10 common causes of itching which were not related to living insects or mites.

1. Itching may appear as a common component of a generalized allergic reaction.
2. Parasitic infestations (such as pinworms causing itching around the anus)
3. Pregnancy (itching is fairly common in the last trimester of pregnancy)
4. Liver disease
5. Kidney disease
6. Diabetes
7. Thyroid disorders
8. Malignancy (itching is associated with some disorders)
9. Neurologic disorders
10. Drugs and interactions between drugs

Industrial pollution from some manufacturing process can cause a skin reaction and itching that is blamed on insects.

It is not uncommon for a group of people in a commercial or government establishment to complain of "paper mites" or "cable mites", but after investigation none can be found. The usual pattern is that much insecticide, ointments, bathing and cleaning has been applied, but with no lasting benefit. The complaint of itching or bites is sometimes found to be rooted in anger or frustration with the administration, boredom of work, or an uncomfortable working environment. One individual can trigger others to make complaints about "bites".

Case history #1: Painting a work area to make it more attractive and installing fans for cooling eliminated the 'biting' complaints in one office.

Case history #2: The discovery that the punched paper in a key punch operation was being blown by fans onto the legs of women workers was the cause of 'bites' on their legs. Reorienting the fans solved the problem.

Case history #3: A woman complained of bites from very small bugs, but none could be found. She was asked to swab the areas affected and save the swabs. Pollen grains from Bermuda grass were found in 30 percent of the swabs. When Bermudagrass pollen was placed on her skin it reacted. She had an allergy to the pollen.

Case history #4: Following rat control in a warehouse, mites attached personnel working there. Following fumigation two workers continued to complain of bites, but no mites could be found. They were asked to swab the affected areas. Fragments of the tropical rat mite were recovered. It was found they had been sensitized by the original infestation, and the mite particles caused a skin itch.

Delusions of Insect Bites

This term has been used to describe a person who has an emotional disorder with the unwarranted belief that live organisms, such as mites or insects, are present on or in their body. One author described it as "as false belief that cannot be corrected by reason, it is logically founded but cannot be corrected by argument or persuasion or even evidence of the patient's own senses".

The initial contact with such a person may give insight into the problem, especially if they report the bugs appear and disappear while being watched, enter the skin and reappear, change colors, come out of items such as toothpaste, Vaseline, cosmetics or even insulation. Another common characteristic reported is the person's excessive preoccupation with cleanliness. Some will spend their entire time cleaning, scrubbing and sterilizing their home. They may replace carpet and furniture in attempts to be rid of an "infestation". Some may be forced to leave their home for new quarters that are "uninfested", but unfortunately the problem usually follows them and reappears. They will provide large numbers of samples with the bug to "prove" their claim of being parasitized, but it usually contains only debris or "innocent bugs".

They have been to a long string of consultants and "experts" who have failed to solve their problem. Such individuals are reported to be generally well educated and "normal" except for the phobia of parasitosis. The prognosis for relief for these persons is reported as poor.

Taken from materials provided by Dr. Burton Evans, Extension Entomologist, Dr. Beverly Sparks, Extension Entomologist and Dr. Richard Sturm, Dermatologist.