



Imaginary Bug Bites?: A client calls to complain of being bitten by insects, insects they can't see, or at least can't produce as physical samples. They may even walk into the office with containers filled with lint, skin flakes or other household debris, or personal items like pillows, sheets, socks, or underwear and ask you to examine them for insects or mites. In some cases the client can describe or exhibit skin lesions that look like insect bites. In other cases they simply say things like "I feel them biting", "They make me itch", "I feel them crawling on me", "Sometimes they bite", or "These things are ruining my life. I can't eat or sleep because of them".

The client may also describe drastic steps that they have already taken to try to deal with the problem, things like grossly excessive pesticide use, excessive bathing, bathing with things not intended for use on human skin, even ripping out all the carpet and burning all the furniture. This is a difficult situation, one that requires care in handling. The client definitely has a problem and needs help, but is the Extension Service really able to provide that help? We can help if the problem is really due to insects or mites. If it is due to some other cause we can help direct the client to the appropriate source for help, but we should be careful to avoid making, or appearing to make, any medical diagnosis.

First it is helpful to consider the possible causes of such problems from a broadly general perspective. What kinds of problems can cause people to experience sensations of itching or being bitten? As you check the following list, it soon becomes obvious that most of these possible causes are medically related. They are things that require diagnosis and treatment by a qualified physician. But doctor's visits are costly, and you don't want to send someone to the doctor who really just has a flea problem. Our primary role in extension is to help the client either verify, or rule out, involvement of insects or mites as quickly as possible. Unfortunately, this is not always an easy task. Imaginary bug bites? Maybe. Maybe not. These problems can have you scratching your head, for more than one reason.

Some General Causes of Itching or Sensations that Feel Like Insect Bites

- Skin allergies or sensitivities to things in the environment. There's a whole host of possibilities here, things like soap, cosmetics, shampoo, crème rinse, laundry detergent, pet dander, plants, plant toxins, fiberglass insulation, and many others, including pesticides.
- Dry skin. This problem is more common in the winter months.
- Ailments or infections of the skin.
- Reactions to prescription medications. These can be either visible skin symptoms or simply sensations of biting or crawling.
- Medical problems. The lesions caused by shingles are sometimes mistaken for bug bites initially, but this is just one example.
- Psychological problems. Includes a wide variety of problems, delusions of insects or mites, compulsive behaviors in response to perceived insect/mite problems, etc.
- Vision problems. Some clients describe seeing 'small gnats' or other 'bugs' flying about. This may or may not be accompanied by reports of itching or being bitten.
- Allergies or reactions to foods. Hives are sometimes mistaken for bug bites, again just one example.
- Static electricity. In some cases people perceive the tiny shocks from static electricity as 'bug bites' or body hairs moving in response to static charges cause sensations that are mistaken for insects crawling on the body.
- Effects of illicit drugs ('meth bugs' or 'meth mites', delusions of insects crawling on body, etc.).
- Insects or mites. See Table 1 for a listing of some of the more common arthropod-related problems.

What not to do: When initially visiting with a client regarding such problems there are some things you should not do.

- Do not recommend any insecticide use or other treatment without definitely identifying a specific insect or mite that is causing the problem!
- Do not encourage or agree with the client when they make claims that are obviously false or can't be verified—Don't say you see bugs unless you really do.
- Do not suggest that the client bring in randomly collected samples of lint, debris collected or swept from the floor, 'vacuum samples' or items of clothing or bedding items to be examined for insects or mites, and do not accept such samples. (I have personally examined more than a hundred such samples in my career and have never identified a causal agent in any of them.)
- Do not be too quick to conclude that the client's problem is due to some cause other than insects. In the majority of these kinds of cases the problem usually is due to some non-arthropod cause, but we don't want to overlook legitimate arthropod-related problems. Because many of these pests are quite small, it sometimes takes a good bit of effort to catch the critters involved.

What to do: There are also some things that you should do when visiting with clients about such problems.

- Do take time to visit with the client and learn as much as you can about their problem.
- Do assure the client that it is not unusual for people to experience this kind of problem and let them know that the cause is often something other than insects or mites. Assure them that we can and will help identify insects or mites, but we can't help with other causes.
- Do make written notes so you can pass the information on to an entomologist if necessary. Keep a copy of these notes. You may be visiting with this client again in the future.
- Do request that the client try to collect and submit samples of **actual insects or mites** that they think are causing the problem. Emphasize that they should only collect samples of things they actually see moving about or catch in the act of biting. (Often clients with such problems will bring in samples of inanimate objects such as scabs from small wounds, seeds, plant parts, lint balls, or mouse or roach feces. Sometimes clients present samples of actual insects, but they are not insects that cause bites or itching.)
- Do explain how to 'pick up' small insects and mites and transfer them to a small vial of alcohol using a cotton swab or artist brush moistened with alcohol. Also explain how to handle and submit samples and explain that they should collect several specimens if possible.
- Do submit any insect or mite samples to an entomologist for identification.
- Do discourage clients from continuing any practices that may pose a danger to themselves or other people, such as excessive or inappropriate insecticide use.
- Do suggest that the client consult a dermatologist or physician, if after visiting with the client you feel that this is the most appropriate action, and that the chance that the problem really is due to insects or mites is small.
- Do 'leave the door open' for the client to submit in samples of any insects or mites they might find later.

Many clients are initially resistant to consulting medical professionals because of concerns over costs, embarrassment, time spent in waiting room, previous failed attempts to find a solution, or other reasons. However, experience has shown that in the majority of cases where the client is unable to produce actual samples of insects or mites, the problem is due to something other than insects or mites. Obtaining appropriate medical advice is much more likely to produce a solution to the problem than continuing to try to detect or treat an insect problem that does not exist.

Questions to Ask: When interviewing clients to learn about their situation and key in on possible causes there are a number of key questions that are helpful to ask. Always remember to be objective in your evaluation of the answers. Perceptions and descriptions provided by clients are not always accurate.

- Describe the problem. Why do you think it might be caused by insects or mites?
- How long has this been occurring? When did this start?

- Where in the house does the problem occur? What time of day does it occur?
- Who lives with you and who is being bitten? (Note, often the client will indicate that everyone in the house is affected while other family members, when questioned separately, may indicate that they are not affected.)
- What steps have you already taken? Sometimes you may learn that the client is doing things that are dangerous and need to be discouraged, such as using pesticides excessively or improperly.
- Do you ever see the insects or mites? If so, can you collect some and preserve in alcohol? Often clients will answer the first question with a statement like, “Oh yea, I see them all the time. They are everywhere!”, but will be unable to produce any actual insects or mites when requested to do so.
- How is your eyesight? You may want assess this in a more subtle manner than a direct question. But this is an important question because people with poor eyesight are less likely to see small insects or mites. In most cases people with good eyesight will be able to detect even small arthropods, like mites or thrips, and collect a sample.
- Do you have pets, like dogs or cats? If so, are they allowed inside?
- Do you have other indoor pets, such as birds or hamsters?
- Have you recently had an infestation of rats, bats, birds, or other animals in the attic or crawl space?
- Do you handle livestock feed, whole grain products, milled grain products, bulk dry foods, or hay?
- Do you have bulk grain products, like oats, bird seed, or milled grain products, stored in the house?
- Have you consulted a dermatologist about this?
- Have you consulted a medical doctor about this?

Insects and Mites That Cause Bites or Itching in Humans: Sometimes clients will describe ‘bugs’ that do not behave or look like any insect or mite known to bite people. They may describe ‘bugs’ that float up from the carpet, come out of the fire place, or crawl out of their ears or nose. Table 1 lists most of the insects and mites that bite people or cause skin irritation—excluding stinging insects like ants or wasps and large biting arthropods like spiders. Some of these, such as mosquitoes and fleas, are common causes of human bites. Others, such as bat bugs or oriental rat mites, are encountered only rarely, under very specific situations. Use this list to help direct your questioning, and/or to help direct the client on where and how to look for specific pests. Many of these problems only occur under very specific situations and this allows them to be easily ruled out, or targeted for closer investigation.

Summary: Helping a client who is experiencing itching or bites they think may be caused by insects or mites, but who is unable to provide samples, can be a difficult task. It is often a multi-step task. During the initial visit the goal should be to collect information and assess the probability that the problem really is arthropod-related. If, after learning about the client’s particular situation and considering the possible causes, you feel it is unlikely that insects or mites are involved, recommend that the client consult a physician and consider possible non-arthropod causes. Clients are often resistant to this, but it is usually the quickest, surest way for them to get relief from their problem.

If you feel insects or mites possibly may be involved, review the most likely pest candidates with the client, provide them with information on how and where to look for these pests, tell them how to collect and store specimens, and encourage them to return home and try to collect samples. Clients may wish to have a qualified pest control technician or entomologist examine their home to check for infestations of insects or mites. Never make an insecticide or treatment recommendation until a specific pest has been definitely identified. If the client continues to experience itching or biting symptoms, but remains unable to collect insects or mites, they should be encouraged to consult a dermatologist or other appropriate physician to investigate possible non-arthropod-related causes.

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This information is for educational and preliminary planning purposes only. Brand names mentioned in this publication are used as examples only. No endorsement of these products is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control. Always read and follow the insecticide label.

Table 1: Common, and Some Uncommon, Insect or Mite-related Causes of Recurring Bites and Itches.

Pest	Comments
Mosquitoes	Cause raised red bites on exposed parts of body. Most people are very familiar with mosquitoes, but bites that initially go unnoticed or occur while victim is sleeping are sometimes attributed to other causes.
No-see-ums (biting midges)	These tiny blood-feeding gnats cause sharply itching bites that may or may not result in wheals. Many people feel these bites as soon as they occur, but sometimes bites initially go unnoticed. Despite their name, these insects are large enough (about 1/20 inch) to be observed by people with normal eyesight, but people with poor vision may not be able to see them. No-see-ums are most active in early morning and around dusk. These insects breed outdoors and rarely occur inside.
Fleas	Cause raised red bites on ankles and lower legs. Because of their small size and quick movement, fleas may be difficult to detect by people with poor eyesight. Suspect fleas if client has dogs or cats, especially if they are allowed inside. See Extension Publication 2443 for information on fleas.
Head Lice (other lice)	Head lice restrict their feeding to the head area and along the nape of the neck. Head lice can be detected by having someone with good eyesight check for the grey adults (about 1/8 inch long) and nymphs or the white colored nits (eggs), which are glued to the base of individual hairs, near the scalp. Infestations of head lice are most common in school age children. Infestations of human body lice or pubic lice are less common. See Bug-Wise Newsletter No. 1, 2007 for more information on head lice.
Chiggers	Cause raised red, itching bites, often concentrated in areas where clothing fits tightly, such as under edges of socks and waist bands. Chiggers do not burrow into the skin. Suspect chiggers if client has recently spent time outdoors in brushy or weedy environments. Chiggers are rarely a problem in lawns that are mown and maintained regularly. Chiggers do not breed indoors.
Ticks	Cause itching red bites. Tick is often attached, making this problem easy to identify, but sometimes ticks fail to remain attached after biting. Brown dog ticks are common pests of dogs, but they do not like to feed on humans and often cause 'aborted bites' when they do get on people. There are several other species of ticks that do bite people.
Thrips	These tiny insects (about 1/20 inch) are pests of plants, but they will bite humans, causing a sharp itch, but no wheal, if they land on the skin. Suspect thrips if client is exposed to plants that are heavily infested with thrips. During dry springs large numbers of windblown thrips may land on and bite people that are outdoors.
Bed bugs	Bed bugs cause recurring raised red bites that can be anywhere on body; bites are often in a linear pattern. Check bedding, mattress, and surrounding area for bed bugs, shed skins, and or fecal spotting as described in Extension Publication 2443, Control Household Insect Pests. Bed bugs are brown, oval-shaped, and about ¼ inches long.
Bat bugs or Bird Bugs	These bugs look a lot like bed bugs and are similar in size, but they rarely invade the house or bite humans unless their primary host has been eliminated. Suspect these insects if bats or birds have recently been eliminated from the home.
Oriental Rat Mites, or similar mites	Oriental rat mites are one of several species of mites that normally feed on rats, bats, or mice. These mites rarely bite humans unless their primary host has been eliminated. Some species are large enough (a little larger than a period) that clients are often able to see them crawling on the body or on walls, counters or furniture. Suspect these kinds of mites when people begin complaining of bites shortly after rats, mice or bats have been eliminated from the building.
Bird Mites	Chicken mites and northern fowl mites normally feed on poultry and other birds but will bite people who come in close contact with infested poultry, infested pet birds, or live in homes where nests of infested birds have recently been removed. These mites are visible to the unaided eye, slightly larger than a period.
Scabies mites	Scabies mites are microscopic human parasites that tunnel into the skin, causing raised pimple-like sores and rough, crusty patches of skin that itch intensely, especially at night. Fortunately, they are relatively uncommon. Infections are often concentrated between fingers and other areas of the body where two skin surfaces are pressed together, such as in the crotch area, behind the knees, or under breasts. Scabies mites can be diagnosed and treated by a dermatologist or physician. These mites only spread by direct, person-to-person contact, or through close contact with clothing or bedding of infected people. People do not contact scabies from pets or other animals.
Mange mites (on dogs or cats)	Mange mites of dogs or cats will not persist on humans, but people exposed to mange infested pets, or bedding of infested pets, sometimes sustain short-term infestations that cause skin irritation. These mites are microscopic.
Grain mites	There are many species of mites that can infest grains or other food or feed products and cause skin irritation and itching in humans, especially when people are exposed to high populations. Suspect grain mites if client is routinely exposed to livestock feed, bird or pet food, whole grain products, bulk milled grain products, bulk dried foods, or hay. Though these mites are very small, they can sometimes be observed using a magnifying glass and good light source, by examining the undisturbed surface of the product where the infestation is suspected. Sometimes these mites are so numerous that there will be a moving mass of mites on the surface of the infested product.
Straw Itch Mites	Straw itch mites cause raised chigger-like bites that itch intensely. These mites are parasites of insect pests of stored grains or peas, but they will bite humans. As with chiggers, it is the immature mites that bite humans, and these are too small to be readily seen. Suspect straw itch mites if client has been in contact with bulk stored grain products infested with stored grain insects. A related species, not yet detected in Mississippi, feeds on the larvae of midge flies that develop inside galls on the leaves of certain species of oak and attacks people exposed to fallen leaves.
Carpet Beetles	Some people experiences skin irritation and itching when exposed to hairs from the larvae or shed skins of carpet beetles. Exposure to carpet beetle hairs can also cause respiratory problems. See Extension Publication 2443, Control Household Insect Pests, for information on carpet beetles.
'Stinging' caterpillars	Many species of caterpillars possess urticating hairs or stinging spines. People are most often exposed to these when they are working or playing outside and come in direct contact with a caterpillar or have one get inside their clothing. This is more often a one time event, rather than a recurring problem. Some tarantulas also produce urticating hairs, but this would only affect people who keep tarantulas as pets.
Hook worms	(Hook worms are not arthropods) Canine hook worms can not complete their life cycle in people, but the larvae sometimes invade human skin, creating sensations of something burrowing through the skin and resulting in visible lesions or 'tracks' that may be over an inch long. Such infections are rare. Infection requires direct contact of skin with moist, hookworm infested soil. Suspect canine hook worms if client has been in close association with dogs or cats, especially puppies, or has been crawling or working under houses or other areas where pet feces is present and may have come in contact with the skin.

