BEGINNER'S **SERIES**

Orchid Culture — 14 — Pests — Part 2

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FAR SMALLER than scale, mealybug or aphids, and requiring a hand lens (10X-20X) to be directly seen at all, spider mites and false spider mites treat orchid leaves like pin-cushions, and in large numbers can cause considerable injury. The names "Spider Mite", "Red Spider" and "Two-spotted Spider Mite" all refer to any number of mite species *(Tetranychus urticae* and others), some of which may be red, others green or yellowish, but all with the spider-like tendency of spinning webs on which they suspend their eggs. These silken threads are only visible with severe infestations, when in their heyday the mites almost seem to travel on visible web-like bridges from one area to another. Otherwise, it is the damage caused by their piercing mouth parts which soon becomes apparent in the form of a dusting or stippling of the leaf surface (FIGURE 1). Spider mites generally prefer the more protected undersides of leaves. This is where to look for incipient infestations. However, with chronic and heavy infestations entire leaves; above and below, can take on a speckled, yellowish or dry appearance (FIGURE 2). Such leaves will drop prematurely. Thinner-leaved orchids, such as cymbidiums, and the *Cycnoches chlorochilon* pictured here, seem to be most susceptible to spider mite.

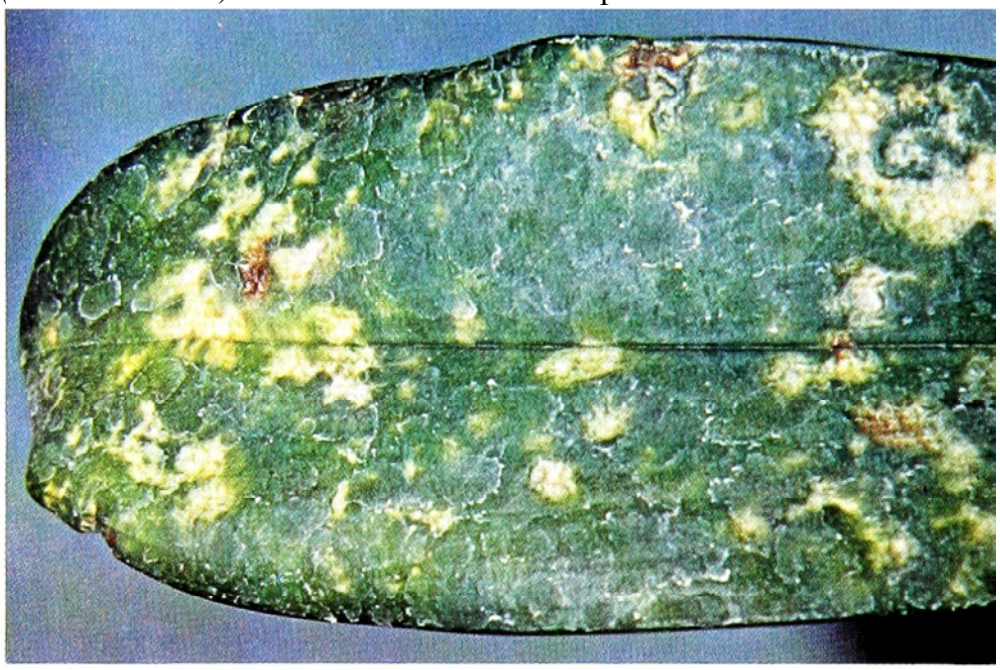
Photography: Stephen R. Batchelor

FIGURE 1 — In the early stages of attack, spider mites cause only the light stippling of the leaf surface, as shown here surrounding a single female scale.

FIGURE 2 — After several months of warm, sunny weather, the same *Cycnoches chlorochilon* leaf pictured above exhibits severe spider mite injury.

Photography: Stephen R. Batchelor

False spider mites, including the infamous phalaenopsis mite, are so called because they do not spin webs. False spider mite infestations can be devastating to leaves, causing silvery or yellow, irregular spots to form which in turn become sunken and brown. Infested leaves can soon become shrunken, distorted and severely pitted (FIGURES 3&4). Thick- or fleshy-leaved orchids, such as phalaenopsis and some oncidiums, seemed to be favored. Rebecca Tyson Northen provides an excellent write-up on these and other pests in her 1973 BULLETIN article entitled, "Orchid Ailments — Part 1" *(see* REFERENCES). Her color illustrations are reprinted here.



Photography: Rebecca Tyson Northen

FIGURE 3 — This *Phalaenopsis* leaf has been heavily parasitized by false spider mite.

Control of spider mites, be they "true" or "false", depends on whether one wants to kill them, or just scare them away. Mites prefer it warm and dry. This is why they are a particular problem with all houseplants. When humidity is down, whether because of high temperatures in the summer or dry heat in the winter, mite damage is most likely to occur. A minor mite infestation can possibly be discouraged from becoming a major, damaging one by the frequent wetting of the leaves — top and bottom — with a mild soap and water solution. This not only disturbs the mites, it leads to the build-up of a soapy film on the leaf surface, something which is unappealing to many pests. (However, anything taken to the extreme can be damaging, so don't go so far as to give your orchids a bath every night!)

FIGURE 4 — False spider mite damage on *Oncidium*. Note the characteristic pitting and yellowing of the upper surface of the leaf (*bottom*), as contrasted with the healthy leaf (*top*).

Photography: Rebecca Tyson Northen

Serious mite infestations require more serious control measures. Mites are not insects and many of the common insecticides have little efficacy. Orthene has some effect on false spider mite, but a miticide such as Avid, Floramite or Hexagon is far more effective on both "red" spider and false spider mites. Other miticides are available, but these are either more toxic or unavailable in small quantities at orchid supply companies. Several spray applications should be given, some 7-10 days apart, for complete control. Again, special efforts should be made to coat the entire surface of the leaves with the spray.

Roaches and Rodents — of similar, nasty habits, chewing insects such as cockroaches, and rodents such as field mice have also been known to prey on orchid buds and flowers. Southerners have to contend with the ever-ravenous

cockroach species which, on occasion, by some cruel notion take to orchids to vary their already diverse diets. Conventional home "bug-killers" can be used around the growing area where this pest is likely to prowl, but should not be sprayed directly on the plants themselves

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Northerners, or those in colder climates, on the other hand, are more likely to face a problem with field mice, especially in the winter months when these cute but mischievous creatures are attracted to the warmth of human habitation. To a winter-starved mouse, a basement, under-lights collection of orchids in bud is very tantalizing, it seems, because first-hand experience, as well as second-hand reports *(see* the Question Box, page 352) can find no other explanation for lopped-off buds and a sprinkling of mice feces about! Mouse traps or poison baits seem inhumane — especially to those who have never had this problem — but!

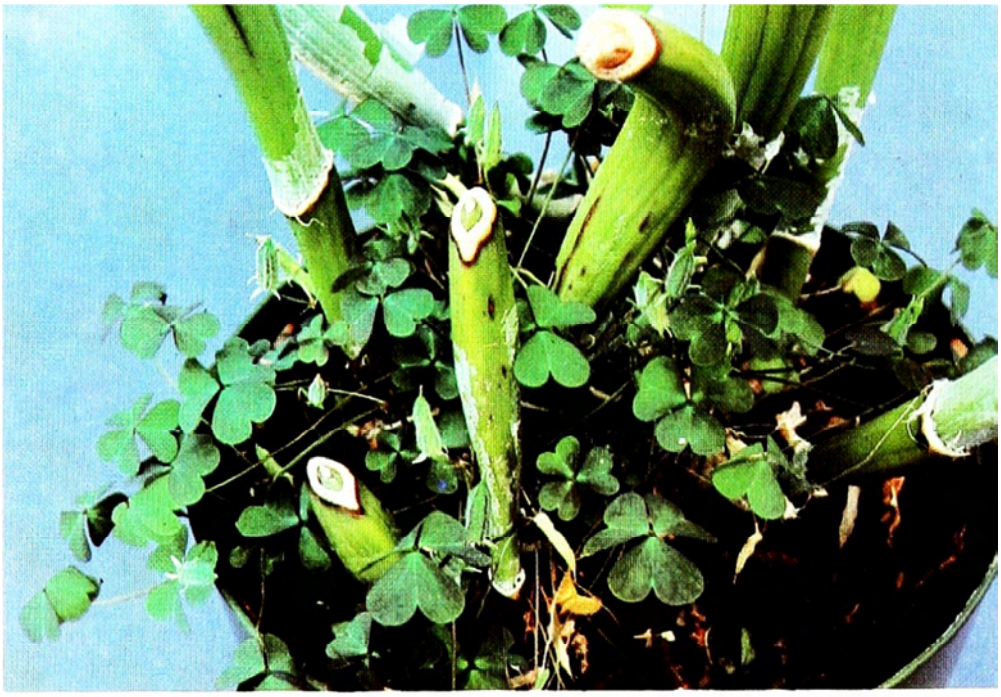
Photography: Charles Marden Fitch

FIGURE 5 — Slugs and snails can cause considerable damage overnight to buds and flowers. Here a hungry slug rasps away at a once-pretty *Phalaenopsis* flower.

Slugs and Snails — these two dastardly orchid pests have caught many an orchid grower by surprise with their nocturnal feeding habits. The next morning, flowers and buds, once the objects of fond pride and expectation, appear gnawed, chewed and generally in tatters.

Snails and slugs are a particular problem for greenhouse or outdoor growers. During the day these slimy creatures hide out in dark, moist locations on the greenhouse floor (especially if there are plants about), under pots (particularly when placed directly on the ground), and even in potting media. At night, they emerge and slither forth to nibble (actually rasp) away at tender root-tips, buds and flowers (FIGURE 5). Tell-tale slimy trails give away these culprits. Short of staying up all night with flashlight and twitching fingers, several control measures are used with some success.

These include such home-spun remedies as using lures of apple or beer to entrap (and possibly to torture) these beasts. More conventional methods, however, involve the regular, warm-weather use of poison baits (pellets) containing metaldehyde or iron sulfate, of which there are many on the market. These are generally spread about the growing area, on and below the benches. One should only reluctantly place them on the top of the potting media, roots being as sensitive, and as vital, as they are.



Photography: Stephen R. Batchelor

FIGURE 6 — If allowed to establish and flower, oxalis can be very difficult to eradicate. One touch of a ripened seed capsule catapults seeds to adjacent pots.

Nuisances — lastly, to complete this list of orchid pests is a varied collection of insects — and plants — which cause no direct injury to orchids. Nevertheless, they are "suspicious characters", or just plain nuisances.

Ants do not generally feed on orchids, but they can frequent them — especially if an infestation of scale, mealybug or aphids is present. As mentioned earlier, the sugary exudate these pests produce is nourishing to ants, and sooty mold. Control your other insect problems and ants are likely to be less bothersome. Orchids grown under high light conditions can produce their own sugary exudate *(see* illustration, page 643 of the June 1981 BULLETIN), and can themselves attract ants. Because ants are suspected of spreading their more serious counterparts — scale, mealybug and aphids — removing their presence might be well advised. Control measures used for cockroaches can be used for ants. Ants also on occasion may decide that an orchid pot, complete with mix and plant, would make a suitable home, and will establish a colony within. They can be persuaded to change their minds by submerging the pot to the rim in water until the exodus is complete.

In addition, a variety of insects and their larvae find decomposing organic media a pleasant and fruitful home. Many feed on the decomposing matter, including the fungus gnat. This black, triangular-shaped fly can emerge rather suddenly in large numbers from the potting media. For indoor growers particularly this can be a source of much distraction, though of little harm to the plants themselves. Fungus gnats can be controlled with Cygon or Orthene sprayed on the surface of the potting media.howeverd renches may be more effective, though they should be regarded as risky for the roots as well as the gnats. Keeping the potting medium somewhat drier will also help control these insects because humid, wet conditions favor their lifecycle. For larger collections, a commercially available preparation called Gnatrol may be used. Fortunately, outbreaks of such pesky flies usually end as quickly as they begin.

Even though orchid culture is an example of "soiless" culture, weeds are not unknown to the orchid grower. Most prevalent is the familiar oxalis (FIGURE 6), though other plant species can cause headaches in various regions of the country and world. ("Artillery weed", so common in my experiences in Florida, is rarely if ever seen up north.) Ferns may not be considered pests or weeds in their own pots, but when they appear uninvited in orchid pots, it is another matter. Any undesired plant in the same pot with an orchid represents unnecessary competition for nutrients, and should be promptly removed.

Herbicides are available and perhaps necessary to the commercial orchid grower with his large range, but for the hobbyist, hand-picking weeds is the only reasonable and safe alternative. For somewhat larger collections, Carmex is a safe herbicide when used as directed. As all gardeners well know, whether they be in soil or in epiphytic media the trick with weed control is to catch the weeds in the seedling stage before establishment and, certainly, before flowering and seed maturation. Little effort is required to completely remove a young weed from a pot, but no amount of picking, pulling or tugging could remove the regenerative tap roots of the mature oxalis plants pictured here. Only in repotting could these weeds be separated successfully from the orchid and destroyed. What is worse, mature seed capsules of oxalis *(see* illustration) explode when touched, spreading seed to adjacent pots to further compound the weed infestation. Save yourself a lot of trouble; pull weeds while they are young!

PREVENTION

Exposed as every orchid collection is to a pest attack, growers should constantly be on the alert, ready to combat these infestations when they occur. A number of "weapons" are available for this purpose. Pesticides, while not pleasant, are extremely useful — and safe — when used carefully and properly. They may be the only alternative if a severe infestation is to be controlled. And yet, isn't an ounce of prevention worth a pound of pesticide?

There are a number of actions the orchid grower can take to reduce the possibility of pest infestation. Likely hosts of pests can be isolated from the growing area, or denied admittance altogether. For example, growing houseplants with a reputation for being spider mite "favorites"

(such as palms, ivies, or crotons) in with the orchids is inviting spider mite attack. These plants are best kept separate. Orchids which are new additions to a collection should be isolated as well, until they can be thoroughly inspected and sprayed if necessary. An under-bench area which is cluttered with dead leaves, dirty pots, and plants is a breeding ground for snails and slugs, if not for other troublesome creatures. Keeping these areas adjacent to the orchids free and clear is a good idea. Sanitation is important in pest and disease control. Dried pseudobulb and rhizome sheaths are potential "hide-outs" for infestations, and should be removed. These preventative measures, taken in combination with frequent inspection of the collection, can save the grower a great deal of trouble. It is infinitely easier to control an occasional, incipient infestation than one that is severe and ongoing.

Avoid repetitive spraying of the same chemicals to prevent development of resistance. Most orchid pests multiply far more rapidly in warmer weather. Timing a general spraying of the collection at the beginning of warm weather in mid- to late spring might catch the isolated bug or two before it really starts multiplying. Another spraying in the fall, especially for those plants "summered" outdoors, will help reduce the chance of bringing pests indoors for the winter.

All in all, orchid growers who have the least problem with pests are those who relentlessly inspect their collections, and are quick to act on any infestation they might find.

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