

*Pitch masses and sap flow:* larvae of certain moths and beetles

*Pitch tubes:* bark beetles

*Flocculence* (cottony waxy material): adelgids, mealybugs, certain scales, aphids, flatids, and psyllids

*Slime:* slugs and snails

### Discussion

These five symptom categories do not involve five completely separate groups of insects or their relatives, for a single kind of pest may cause more than one type of symptom. Aphids, for example, cause symptoms of yellowing (Category II) and plant distortion (Category III), and are responsible for products such as honeydew and subsequent sooty mold, cast skins, and flocculence (Category V). Some species of aphids commonly cause several kinds of symptoms concurrently. Scale insects may cause dieback of plant parts (Category IV) and leave products on plants (Category V). Snails and slugs cause tattered foliage (Category I) and leave slime trails (Category V).

The student of ornamentals entomology, in learning the problem diagnosis process, must be informed early on that various agents or factors,

such as plant diseases, herbicides, physical injury, or cultural problems, may cause symptoms similar to those caused by insects and their relatives. But whatever the cause of poor plant performance, the plant itself should be allowed to serve as the indicator of what may be wrong. Then, the search for pests or other agents capable of causing the kinds of symptoms seen is a profitable next step. Of course, pests found must occur in numbers sufficient to cause the damage noted, if the diagnosis is to be an accurate one. Finally, the student must keep in mind that more than one kind of pest may be damaging the plant, resulting in multiple symptoms, or multiple causal agents may collectively be contributing to the same symptom.

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### Abstract

Allen, O. E. 1986. **Seattle's new center for urban horticulture.** *Horticulture* 64 (6): 20-25.

Harold Tukey is in charge of one of the most significant new institutions in the U.S. horticultural world, Seattle's recently created Center for Urban Horticulture. Ironically, the handsome structure into which he and his staff moved in the fall of 1984 is situated on a former city dump. But the made-over site is perfect of the Center, with ample room for expansion and a view of one of the broad waterways that make Seattle a delightful place to live and work. An independent department within the University of Washington, The Center constitutes, according to Tukey, "the first horticultural program in America—and probably the world—that's totally dedicated to research and teaching about urban plants and their effect on humans. What is perhaps most surprising and impressive about the institution is that it came about largely through the efforts of a group of influential citizens, all devoted Seattle-area gardeners. And it continues to draw much of its funding and other support from private sources.