

THE BROWN GARDEN SNAIL

Whether you call it the European brown snail, Petit-gris, escargot, or *Helix aspersa*, it is still the common brown garden snail of England, western Europe, and California. And, it is becoming more and more common in parts of Oregon.

What is a snail? Ask almost anyone and he will reply, "Why, it is a slimy critter like a slug!" and they will be right except for the fact that a snail has an external shell into which it can pull its whole body. Slugs have only remnants of shells remaining, embedded in the tissue of the mantle just behind the head. But, snail shells are built of lime (calcium carbonate) and this material is hard to come by in Western Oregon with its largely acid soils. So, Oregon supports only a few species of native snails, and these not in large numbers. The Pacific woods snail (*Monadenia fidelis*) and another found along the Columbia River, *Allogona townsendiana* (no common name for this one), are the only ones comparable to the brown garden snail in size or appearance (Figure 1).

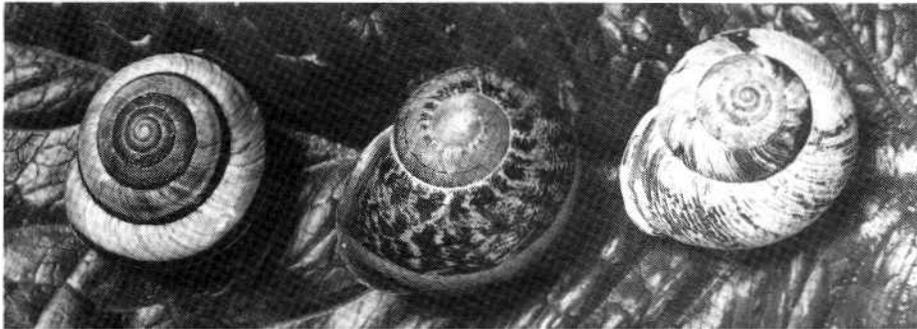
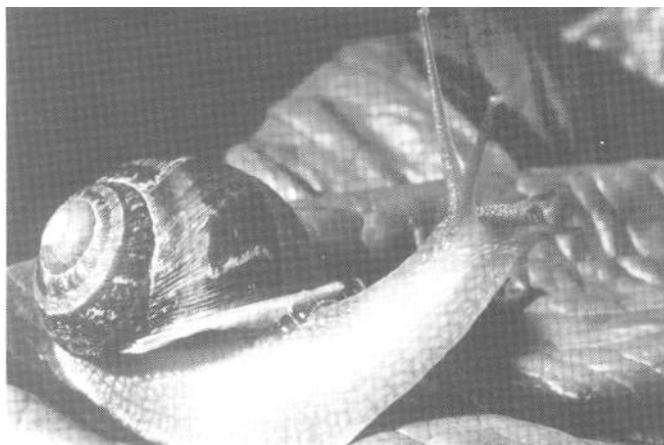
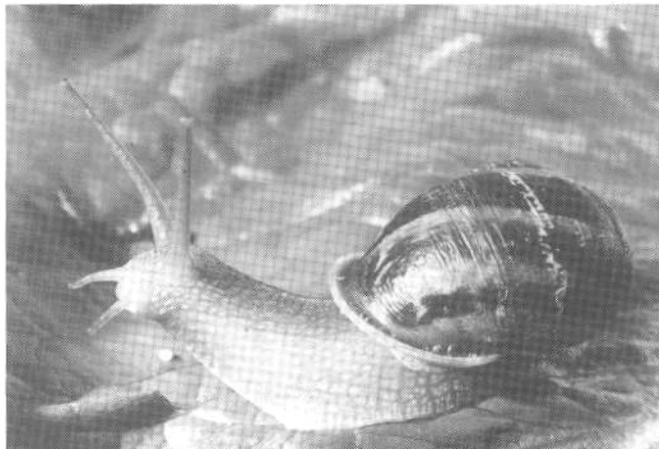


Figure 1A, 1B. Two snails comparable to the European brown garden snail in size and appearance are found in Oregon: The Pacific woods snail (*Monadenia fidelis*) and *Allogona townsendiana*. For comparison, the shells in both photos are arranged from left to right: *Monadenia fidelis* (Pacific woods snail), *Helix aspersa* (European brown snail) and *Allogona townsendiana*.

Figure 2A, 2B. Photos of the adult *Helix aspersa*, European brown snail: The life span of the adult is 2 to 5 years. They may go into a form of hibernation (aestivation) in hot, dry summer periods and into real hibernation during winters. Growth of the shell is in increments: an indication of fully mature snails is the flair at the opening of the shell. Full-grown shells have 4 to 4 1/2 whorls and are 1 to 1 1/4 inches in diameter.



It is rather well-known that snails have been valued as food in Europe for many centuries. The Romans, particularly, saw to it that snails accompanied their advances into Northern Europe and thus the Number 1 "escargot," *Helix pomatia* (the Burgundy snail) was introduced into England where it is still called the "Roman" snail. The smaller, brown garden snail (*Helix aspersa*) probably needed no help in spreading throughout western Europe, the south of England, and many other areas settled by man, as it is far more adaptable to different climatic conditions. The most discerning gourmet probably prefers *Helix pomatia* to *Helix aspersa*, but mainly it is the smaller size of the brown garden snail that puts it in the "number 2" position. European immigrants to California are blamed for the introduction of *Helix aspersa* to that state over 100 years ago. There it has prospered greatly and has long been considered a serious horticultural pest instead of a gastronomic blessing.

The brown garden snail was first described in Italy in 1774 by a man named Muller. The species name, *aspersa*, means "bespeckled" and refers to the mixture of grayish-yellow and brown coloration of the shell. The brown pigmentation is also more or less concentrated into 4 or 5 bands following around the spiral of the shell. Full-grown shells (told by the flaring of the lip at the shell opening) have 4 to 4 1/2 whorls and are usually an inch to 1 1/4 inches in diameter. The living animal itself is light to dark gray and when fully extended is about 2 inches long (Figure 2).

Around home gardens this snail is a pest mainly because of its presence on lawns and walks where it is stepped on accidentally. It can do real damage, however, to various plants by feeding on leaves, stems, and fruits. This is accomplished by the rasping action of the toothed tongue or radula. They also feed on decaying vegetation and even take soil into their digestive tracts; this is thought to be one way of getting more calcium for their shells.

Length of life is around 2 to 5 years. When it gets hot in summer, these snails seek a shady place, seal the mouth (orifice) of the shell to a rock or tree, and go into a form of summer hibernation called aestivation. Cooler weather, and especially rain, revive them rapidly to resume normal activities. Come cold weather, they again find a sheltered place, or actually dig into the soil for an inch or so, seal over the mouth of the shell with dried mucus, and go into a real hibernation for the winter.

Spring brings the call for reproduction. Each snail is a hermaphrodite and capable of laying fertile eggs after a mating (It is thought that an individual snail may act as a male at one mating and as a female at another). The snail then digs a hole in moist, loose soil and constructs a sort of nest at the bottom. With its head reaching into the cavity or nest as far as the shell will allow it, the snail deposits its round white eggs from the genital opening just behind the head (Figure 3).

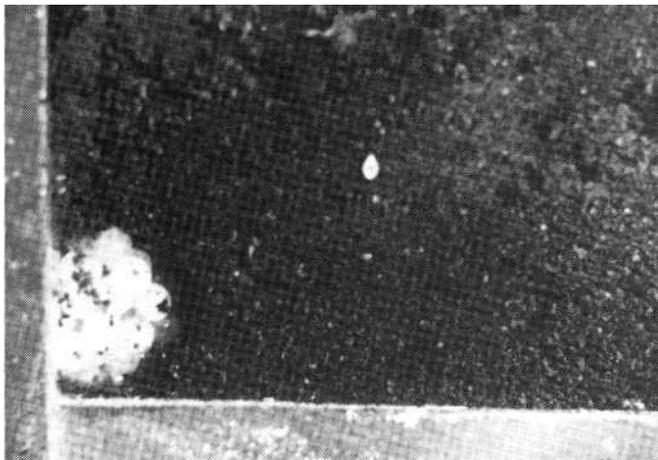


Figure 3. Clutch or mass of eggs of *Helix aspersa* is located in the bottom left hand corner of the photograph. Egg laying occurs from February into October 20 to 100 eggs are deposited in each mass with an individual depositing 4 to 5 clutches per year (about 430 viable egg s/individual/year). Eggs hatch within 10-21 days after deposition.

Following oviposition, the snail spends several hours closing the opening and concealing its presence. Most of the reproductive activity takes place in the 2nd year of life and egg laying may be at any time from February into October, depending on the weather. Number of eggs laid in a nest may vary from 20 to over 100 and the number of clutches (or egg masses) is usually around 4 or 5 per year. Basinger (1931) in southern California estimated average production of about 430 viable eggs per individual snail per year. No similar information from "wild" colonies in Oregon or Washington is available.

The eggs hatch in 10 days to 3 weeks and the tiny, perfectly formed young work their way up through the soil over a period of days. A year or 2 must then pass before they are sexually mature and ready to start the cycle over again. However, laboratory rearing in Corvallis under conditions

allowing continuous growth and breeding has shown that *Helix aspersa* can pass from egg to sexually mature individuals in about 6 months.

Control of brown garden snails is the same as for slugs. They are attracted to the same kind of baits and are susceptible to metaldehyde, methiocarb (Mesuro), or a combination of metaldehyde and carbaryl (Sevin).

There have been reports of resistance to metaldehyde in areas of California where repeated baiting has been carried on for a number of years.

References:

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Crowell, H.H. 1977 (revised, June 1979). Chemical control of terrestrial slugs and snails. Agr. Exper. Station Bull. #628, 70 pages. Oregon State University, Corvallis. (This bulletin is available from the Bulletin Mailing Office, Oregon State University, Corvallis, OR 97331. Please specify title and the series and numbers. If you are an Oregon resident, up to 6 copies of this bulletin may be requested at no charge. If you are not an Oregon resident, or if you request more than 6 copies, the cost -including postage and handling-- is \$1/copy).

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