

European earwig, *Forficula auricularia* Linnaeus (Dermaptera: Forficulidae)¹

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INTRODUCTION: The European earwig, *Forficula auricularia* Linnaeus 1758, is intercepted in Florida frequently in bundles of plants and shrubbery, in cut flowers, and in florists' equipment arriving from the western United States. This insect is spread largely by man. Spread by natural means is limited because earwigs seldom fly and cannot maintain flight very long. It has not yet become established in Florida, but it has the potential to do so, at least in the northern part of the state. This earwig was recorded first in the United States at Newport, Rhode Island in 1911 (Jones, 1917). Jones (1917) reported a small colony from Seattle, Washington in 1915. Later evidence indicated that it first invaded North America somewhere on the west coast in the early 1900's. Eventually it became widespread in the New England and middle Atlantic states and throughout most of the western states, especially where there is abundant rainfall or irrigation to provide moisture and food. It became the dominant species of earwig in many of these areas. This earwig is found throughout Europe, but it seldom is present in great numbers. The origins of the Newport and Seattle infestations are unknown, as is how the first individuals were imported. Quantities of nursery stock arrive from abroad each year upon which the importations may have been made. While it has not been considered of great economic importance in Europe, it has become a serious pest in parts of the United States.

New colonies tend to build to very high population levels with consequent competition for food and shelter, followed by gradual decline. It is a nuisance in and about homes and gardens. It is much disliked because of its repulsive appearance to many people, its foul odor, and its habit of feeding at times in kitchen refuse or hiding in a wet mop. It may be destructive to many plants and flowers, but it is omnivorous, feeding on both plant and animal material, and it may be beneficial as other insects make up a large part of the food supply.

HOST AND HABITAT: The European earwig feeds on other insects, plants, ripe fruit, and garbage. Plants

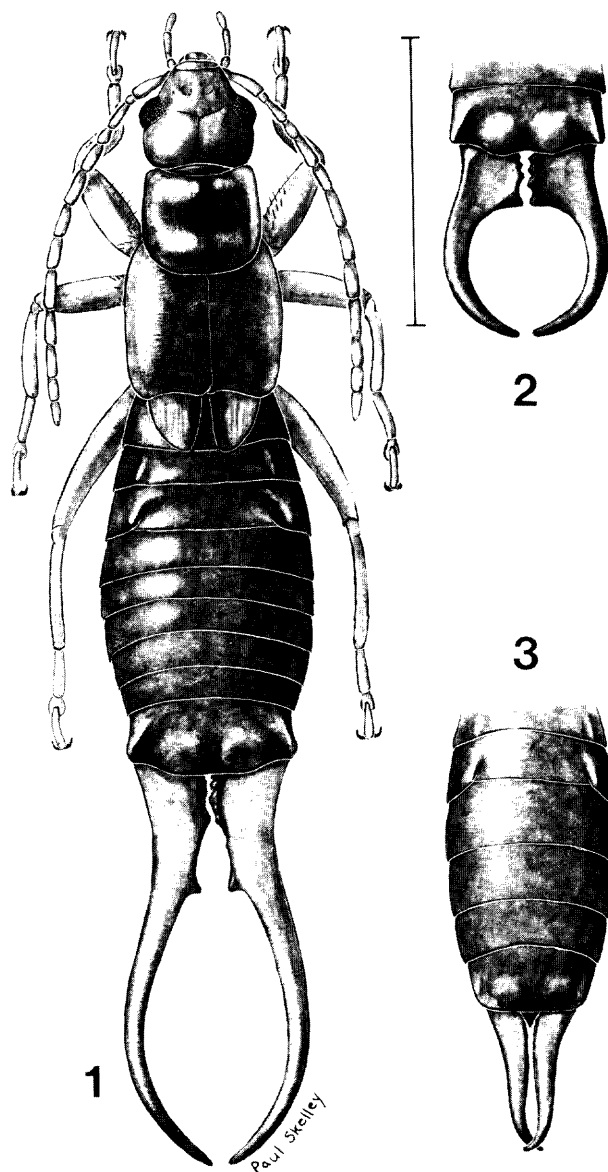


Figure 1-3. *Forficula auricularia* Linnaeus. 1) adult male; 2) caudal end of male having short, sharply curved forceps; 3) caudal end of female.

¹ Contribution No. 708, Bureau of Entomology

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that it feeds on include clover, dahlias, zinnias, butterfly bush, hollyhock, lettuce, strawberry, celery, potatoes, roses, seedling beans and beets, and tender grass shoots and roots. It damages sweetcorn by feeding on the silks (Getzendaner, 1966). It is nocturnal, hiding during the day and roaming at night to find food and water. Around homes it hides in garden plants, in shrubbery, along fences, in woodpiles, at the base of trees, and behind loose boards on buildings. While it is chiefly an "outdoors insect", its habit of hiding among petals or leaves of plants, or inside fruit, allows it to be brought frequently into the home.

DISTRIBUTION: The European earwig is widespread in cooler parts of the world. Originally known from the Palearctic Region, the European earwig has been recorded from Canada (British Columbia, Manitoba, Newfoundland, Nova Scotia, Ontario, Quebec, and Saskatchewan) and the United States (Arizona, California, Colorado, Idaho, Maine, Massachusetts, Montana, New York, North Carolina, Oregon, Rhode Island, Utah, and Washington). Dr. Kevin M. Hoffman, Department of Entomology, Clemson University, provided the following unpublished records: Kansas, Maryland, Michigan, Nebraska, New Hampshire, Ohio, Pennsylvania, and Wisconsin. There is a questionable record for Chile.

IDENTIFICATION: *F. auricularia* is a medium-sized earwig with body length 12-15mm, male forceps 4-8mm (Fig.1-2), female forceps 3mm (Fig. 3), tegmina 2mm. Male forceps vary from about half as long to longer than the abdomen, broadened basally, with crenulate teeth basally and on beginning of curvature of inner margin. Antennae have 14 or 15 segments. The adult is rich reddish brown, with wing covers and legs dull yellow brown, and the wings completely developed. Males are readily distinguished from other North American species of earwigs by their distinctive forceps.

LIFE HISTORY AND HABITS: The female lays 50-90 shining white eggs, each about 1.5mm in length, in the ground in the fall. Females do not die at once, but hibernate, and in the spring attend the larvae in their early stages. Many hibernating females and their eggs have been found 5-8mm below the soil surface. Rich garden soil with a southern exposure is a favorite place for egg deposition. Young earwig larvae resemble adults, but they are lighter in color, have no wings and only delicate, simple, slightly curved forceps or pinchers on the posterior end. Some females may produce a second brood in spring. Most males die early in the spring after being driven from the nests. Females die before midsummer. Immatures of both broods become adults between late August and early October, when fresh pairs enter the soil and construct their nests. The principal enemy of *F. auricularia* in the United States is a tachinid fly, *Bigonicheta spinipennis* (Meigen). Several species of parasitic flies are natural enemies of this earwig in Europe.

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