

**A Spider Beetle, *Sphaericus gibboides* Boieldieu
(Coleoptera: Ptinidae), Tunneling in
Wood in Service**

J. KENNETH GRACE

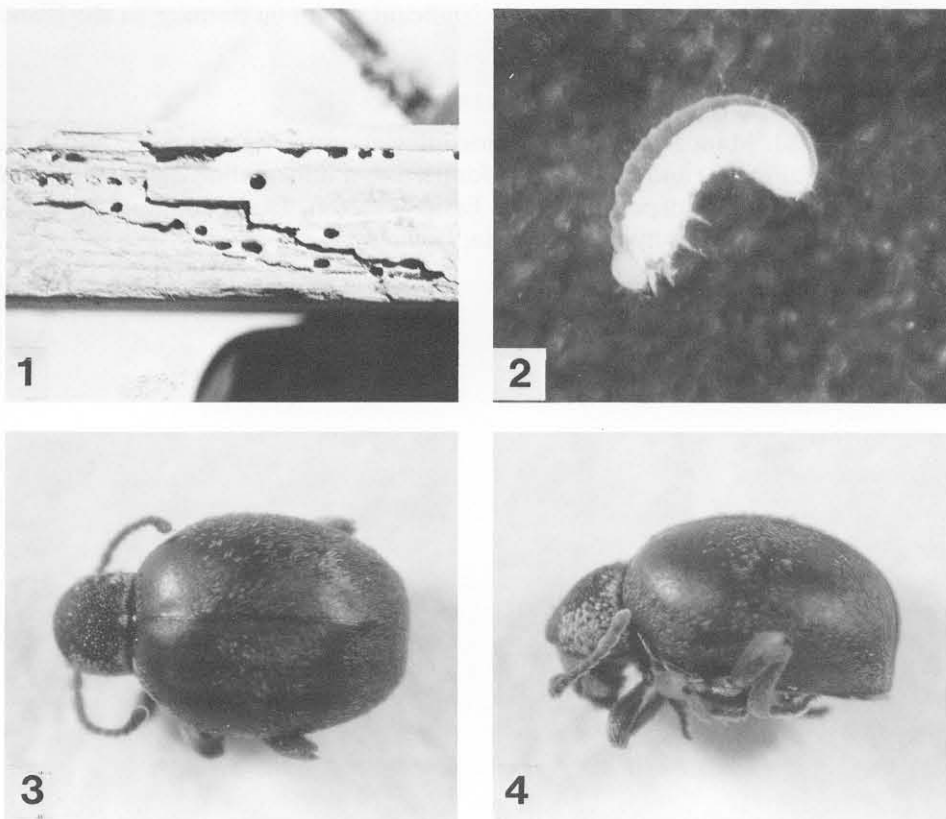
Department of Entomological Sciences, 201 Wellman Hall, University of California, Berkeley, California 94720.

Spider beetles (Coleoptera: Ptinidae) are general scavengers with omnivorous feeding habits (Howe, 1959, Bull. Entomol. Res., 50:287-326) and are frequently found infesting stored food products. Several species will bore into wood to form pupal chambers (e.g., Shapiro, 1948, Entomol. Obozr., 30:53-59), but significant damage to wood has only been reported to occur in heavily infested warehouses and granaries (Mackie, 1932, Calif. Dep. Agr. Mon. Bull., 21:474-488).

I describe here an infestation of *Sphaericus gibboides* Boieldieu damaging kitchen cabinetry in a home in Berkeley, California (Alameda County). This species was first reported in California in 1884, from infested plant specimens and papers in the herbarium of the California Academy of Sciences, San Francisco (Schwarz, 1890, Proc. Entomol. Soc. Wash., 1:174-177). It has been collected from red pepper (Fall, 1905, Trans. Am. Entomol. Soc., 31:97-296), saffron, cayenne, curry powder, fish meal (Spencer, 1942, Proc. Entomol. Soc. Brit. Col., 39:23-29), caraway seeds and insect collections (Papp and Okumura, 1959, Bull. Calif. Dep. Food Agr., 48:228-248). *S. gibboides* has not previously been reported to tunnel in wood, nor has damage to wood by spider beetles been reported in residential buildings.

In August 1984, a Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) kitchen cutting board measuring 50 × 40 × 2 cm was brought to me for examination. Small, round to slightly elliptical holes were present on all surfaces of the board (Fig. 1), having a long axis mean diameter of 1.3 ± 0.3 mm and short axis mean diameter of 1.1 ± 0.2 mm ($n = 52$). These holes led into galleries of the same diameter extending no deeper than 5 mm from the wood surface, but frequently running slightly below and parallel to the surface for distances up to 20 mm. Galleries were present only in the springwood (early wood), giving the end grain a laminated appearance. They were loosely packed with fibrous frass appearing without magnification as a coarse powder. Similar damage was noted to the unpainted interior surface of a ponderosa pine (*Pinus ponderosa* Dougl. ex Laws) half-round molding secured to the front edge of the cutting board as a hand-pull.

Two dead adult *S. gibboides* were removed from galleries in the side and rear edges of the cutting board. Galleries in the front edge of the board, originating in the joint between the cutting board and the half-round molding, yielded ten intact dead adults, three partial adult specimens, and four live larvae with ptinid characteristics (Manton, 1945, Bull. Entomol. Res., 35:341-365). Larvae (Fig. 2) ranged in length from 1.4-1.9 mm, and adults (Figs. 3, 4) averaged 2.3 ± 0.3 mm in length ($n = 12$). This is slightly greater than the 1.8-2.2 mm adult length reported



Figures 1-4. 1. Exit holes of *Sphaericus gibboides* galleries. 2. Lateral view of *S. gibboides* larva. 3. Dorsal view of *S. gibboides* adult. 4. Lateral view of *S. gibboides* adult.

by Papp and Okumura (1959). No other arthropod species were present, nor were any body parts or fecal materials detected which would indicate prior gallery occupation by other species.

Exit holes were also found in the Douglas fir cabinetry abutting the cutting board. These holes were present only in the cabinet surfaces adjacent to the front edge of the cutting board, where the seam between the board and half-round front molding had yielded the majority of beetle specimens. The persistent, localized nature of the population is indicated by the absence of *S. gibboides* infestation elsewhere in the cabinetry or in the foods currently stored in the kitchen.

It is likely that *S. gibboides* was originally brought into this kitchen in contaminated foodstuffs. Larvae or ovipositing adult beetles either fell into or sought refuge in the seam between the cutting board and half-round front molding. These beetles were probably able to persist on organic debris, and possibly derived some nutrition from the wood itself. As the cutting board was rarely used by the occupants of the house, larvae were able to mine the surface of the board and the abutting cabinetry without discovery. The length of many of these galleries (up to 20 mm) suggests rather long periods of larval excavation, although the primary purpose may have been as pupation chambers. Persistence of the infestation is

indicated by numerous exit holes and significant cosmetic damage to the wood surface.

ACKNOWLEDGMENTS

I thank R. M. Mandel for bringing this infestation to my attention, and J. T. Doyen, G. W. Frankie and D. L. Wood for pertinent information and manuscript review. Specimens are deposited in the Essig Museum, Department of Entomological Sciences, University of California, Berkeley.