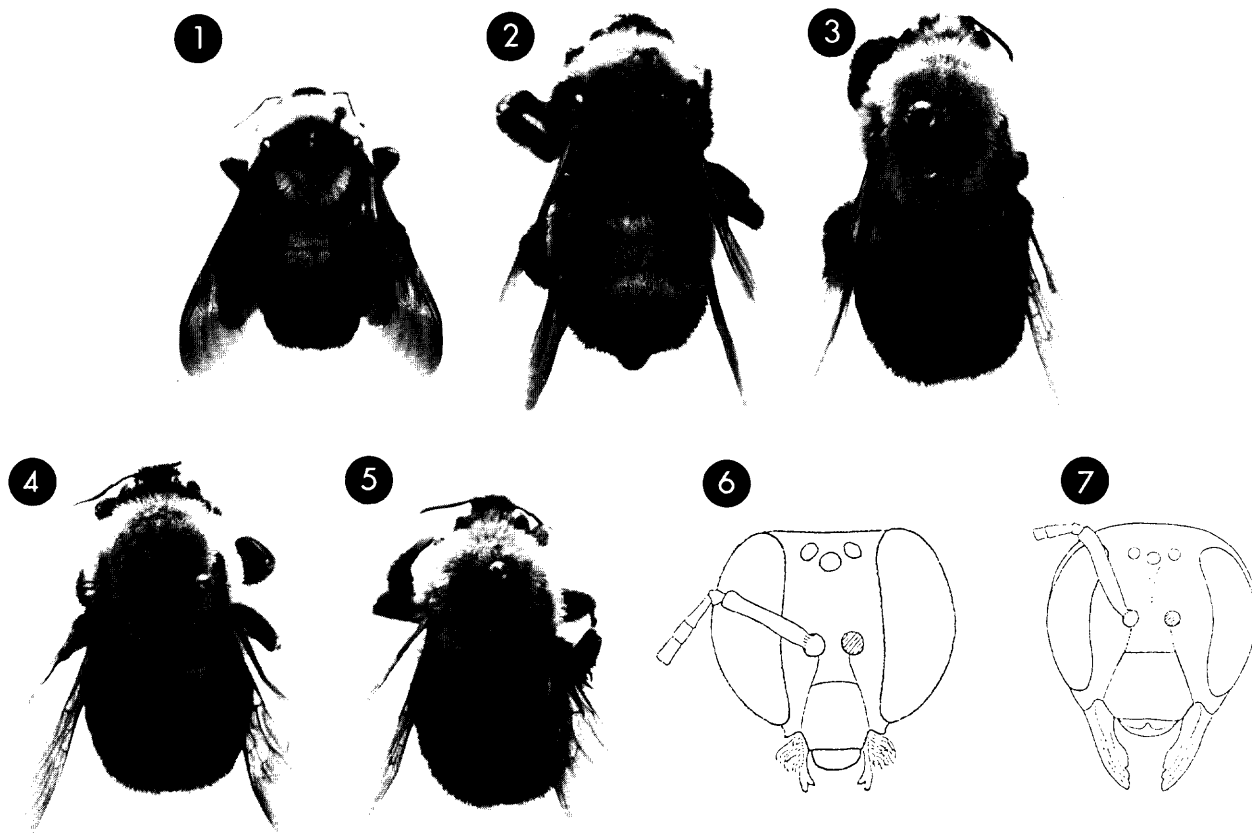


## The bumble bees of Florida (Hymenoptera: Apidae)<sup>1</sup>

Lionel A. Stange<sup>2</sup>

**INTRODUCTION:** Bumble bees are large, social bees which produce annual colonies. Mated queens overwinter in the soil and emerge from hibernation in early Spring when they feed on spring flowers and search for a suitable location, such as a former rodent nest in the soil, to begin their colonies. Once a nest site is found, she collects pollen and lays her first brood of worker eggs. Workers emerge about 21 days after the eggs are laid and take over the duties of pollen and nectar collection as well as colony defense. The size of the workers increases with each new brood. The third caste of bumble bees, the males, are usually produced in midsummer. Bumble bees are easily recognized by the corbicula or pollen basket on the hind tibiae in the females. Honey bees are the only other bees in Florida with this structure but are easily recognized by their smaller size, hairy eyes and lack of hind tibial spurs. The five species of bumble bees found in Florida are usually separated by the pattern of the black and yellow pubescence. The closely related parasitic *Psithyrus* are easily distinguished by the lack of the corbicula.

All bumble bees found in Florida range north into Canada (Lavery & Harder, 1988). Bumble bees become rarer in southern Florida. None are known from the Keys. Two species (*Bombus griseocollis* & *B. pennsylvanicus*) are known from Collier County whereas a third species (*B. impatiens*) has been collected in West Palm County. These are beneficial insects which pollinate many native and ornamental plants. They can sting severely, so problem nests near human dwellings should be removed by experienced pest control operators.



Figures 1-7. *Bombus* spp. (1) *fraternus*; (2) *pennsylvanicus*; (3) *impatiens*; (4) *griseocollis*; (5) *bimaculatus*; (6) *griseocollis*; (7) *bimaculatus*.

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<sup>2</sup>Taxonomic Entomologist, FDACS, Division of Plant Industry, PO Box 147100, Gainesville, Florida 32614-7100

## KEY TO THE BUMBLE BEES OF FLORIDA

1. Antenna with 12 segments; abdomen with 6 visible terga; tip of abdomen pointed, with stinger; corbiculae on hind tibiae (not *Psithyrus*); active all summer; females (queens & workers) ..... 2  
 Antenna with 13 segments; abdomen with 7 visible terga; tip of abdomen round, no stinger; hind tibia lack corbiculae; active from middle of summer till winter; males ..... 7
2. Hind tibia relatively slender, without corbicula; parasitic forms ..... *Psithyrus variabilis* (Cresson)  
 Hind tibia with well-developed corbicula (*Bombus* spp.) ..... 3
3. Posterior half of scutum and all of scutellum with black pubescence (Fig. 2) ..... *pennsylvanicus*  
 Posterior half of scutum and scutellum with some yellow pubescence ..... 4
4. Dorsum of thorax with a conspicuous, transverse band of black pubescence between wing bases (Fig. 1) ..... *fraternus*  
 Dorsum of thorax without transverse black band between wing bases ..... 5
5. Tergum II of abdomen entirely black (Fig. 3) ..... *impatiens*  
 Tergum II of abdomen with yellow pubescence medially at base (Figs. 4, 5) ..... 6
6. Lateral ocellus distinctly below supraorbital line (Fig. 6) ..... *griseocollis*  
 Lateral ocellus at level of supraorbital line (Fig. 7) ..... *bimaculatus*
7. Hind tibia convex, densely pubescent on outer surface; gonostylus much exceeding apex of gonocoxites; parasitic forms .....  
 ..... *Psithyrus variabilis* (Cresson)  
 Hind tibia somewhat flattened, sparsely pubescent on outer surface; gonostylus not much exceeding apex of gonocoxite (*Bombus* spp.)  
 ..... 8
8. Eyes usually converging above, lateral ocelli nearer margins of eyes than to each other; malar space no more than 1/4 basal width of mandible ..... 9  
 Eyes about parallel, lateral ocelli closer to each other than to eye margins; malar space about as long as basal width of mandible .  
 ..... 10
9. Malar space nearly obliterated; eye nearly touching base of mandible ..... *fraternus*  
 Malar space distinct; eye somewhat removed from base of mandible ..... *griseocollis*
10. Dorsum of thorax with a median band of black pubescence ..... *pennsylvanicus*  
 Dorsum of thorax entirely yellow pubescent or with median patch of black hairs that don't reach tegulae ..... 11
11. Segment two of abdomen entirely black pubescent ..... *impatiens*  
 Segment two of abdomen with at least some yellow pubescence ..... *bimaculatus*

### LIST OF SPECIES:

- Bombus bimaculatus* Cresson 1863. County Records: Alachua; Clay; Franklin; Highlands; Lake; Levy; Marion; Okaloosa; Orange.
- Bombus fraternus* (Smith) 1854. County Records: Alachua; Franklin; Gadsden; Levy; Liberty; Orange; St. Johns.
- Bombus griseocollis* (DeGeer) 1773. County Records: Alachua; Clay; Collier; Highlands; Marion; Osceola.
- Bombus impatiens* Cresson 1863. County Records: Alachua; Bradford; Calhoun; Escambia; Franklin; Jackson; Gadsden; Highlands; Levy; Liberty; Okaloosa; Orange; Palm Beach; Polk; Santa Rosa.
- Bombus pennsylvanicus* (DeGeer) 1773. County Records: Alachua; Bradford; Collier; Escambia; Flagler; Highlands; Lake; Lee; Levy; Marion; Orange; Putnam; Sarasota; Santa Rosa.
- Bombus terricola* Kirby 1837. No specimens seen from Florida but recorded from Florida by Mitchell (1962).

### LITERATURE CITED:

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