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The Polygyridae (Gastropoda: Pulmonata) of Florida. 1. Key to the Genera and Subgenera[1]

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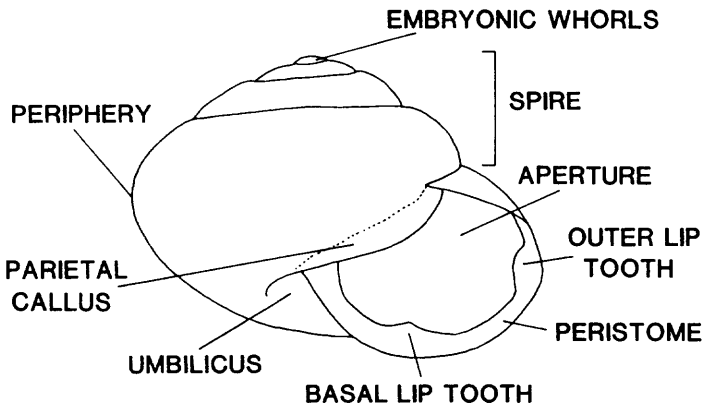
INTRODUCTION: Polygyridae is one of the most widely distributed and diverse families of land snails in North America. The family occurs from Central America north to southern Alaska, eastward throughout the United States (except for several Rocky Mountain States), the Bahamas, Bermuda, Cuba (Pilsbry, 1940) and Hispaniola (U.F. collections). This large geographic area encompasses many habitats to which members of this family have adapted admirably. Species can be found in maritime to high montane habitats and from arid regions in Mexico and the southwest to the humid woodlands of eastern North America.

DESCRIPTION: Although very diverse in shell shape, the family can be roughly characterized by having a flattened to globose-conic shell, basically unicolored, and rarely banded. The aperture has an expanded, usually reflected peristome and is often ornamented with distinct teeth. The shells of several genera are remarkably similar. Correct assignment, even at the generic level, is possible only with dissection of the soft anatomy, particularly the genitalia.

DISTRIBUTION IN FLORIDA: Polygyridae is well-represented in Florida by at least 24 species, comprising 11 genera and subgenera. This is one of the most frequently encountered groups of land snails at any locality and habitat. Generally, these species can be found in mesic hardwood forests. A few species prefer more xeric conditions, such as scrub and coastal dunes. Most species are tolerant of man's disturbance of the environment and can be found in residential areas (under leaf litter, boards, etc.) and sometimes in vast numbers along roadsides. Some species have been introduced into metropolitan areas beyond their native distributions via the ornamental plant and sod industries. The apparent diet of polygyrids appears to be microfungi found in leaf litter. However, several species have been known to eat and cause damage to young and tender plants (Pilsbry, 1940; personal observation).

The identification key and diagnoses given below generally contain characters of only the species presently known to occur in Florida. Caution should be taken when using these for the identification of species found elsewhere. Figures 1-2 provide the terminology used in the key and diagnoses. Illustrations are of species found in Florida, not necessarily the type species of the subgenus. Adult shells must be used for correct assignment--apertural and parietal characters do not develop until the snail reaches maturity. Future circulars will provide keys to the species level, as well as distributions and habitat preferences.



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IDENTIFICATION KEY

1a. Shell aperture, including parietal area, with no teeth or if only parietal tooth present, shell exceeds 20 mm. (Figs. 7, 11-13) 2
1b. Shell aperture, including parietal area, with 1, 2, or 3 teeth (Figs. 3-6, 8-10) 5

2a. Shell large (21 to 30 mm) (Fig. 7) ..... *Mesodon* (*Mesodon*)
2b. Shell small (6 to 13 mm) 3

3a. Shell with white and brownish color bands (Fig. 11) ..... *Praticolella* (*Praticolella*)
3b. Shell without color bands 4

4a. Embryonic whorls with microscopic spiral threads (Fig. 13) ..... *Praticolella* (*Filapex*)
4b. Embryonic whorls smooth (Fig. 12) ..... *Praticolella* (*Farragutia*)

5a. Shell aperture more or less facing downwards, slit-like; with a very long parietal tooth, resembling a ridge (Fig. 3) ..... *Stenotrema* (*Stenotrema*)
5b. Shell aperture lunate, oval or obstructed by large teeth; parietal tooth short (Fig. 2) 6

6a. Shell spire flattened; outer and basal lip teeth absent (Fig. 8) ..... *Polygyra* (*Polygyra*)
6b. Shell spire more conic; outer and basal lip teeth present or absent 7

7a. Shell large (15 t o 23 mm); outer lip tooth absent; basal lip with thin lamina truncated at outer end; parietal tooth simple (Fig. 5) ..... *Mesodon* (*Patera*)
7b. Shell small (4 to 17 mm); outer and basal lip teeth present; parietal tooth biramose or simple 8

8a. Shell not umbilicate, umbilicus completely covered by callus (Fig. 6) ..... *Mesodon* (*Inflectarius*)
8b. Shell umbilicate 9

9a. Parietal tooth simple, but well developed (Fig. 4) ..... *Triodopsis* (*Triodopsis*)
9b. Parietal tooth biramose (Figs. 8, 10) 10

10a. Shell large (6 to 18 mm); aperture greatly to slightly obstructed by apertural teeth; edge of parietal callus raised (Fig. 10) ..... *Polygyra* (*Daedalochila*)
10b. Shell small (4 to 6 mm); aperture more open; edge of parietal callus closely appressed to body whorl (Fig. 8) ..... *Polygyra* (*Lobosculum*)

DIAGNOSES OF GENERA AND SUBGENERA

Polygyra (*Polygyra*) Say, 1818 (Fig. 9)

Shell flattened; periphery rounded, angulate or carinate; whorls tightly coiled, very slowly expanding; umbilicus broadly open, tubular or funicular; sculpture of usually distinct axial ribs; parietal tooth small, distinct; situated on a distinct sometimes raised parietal callus; peristome expanded, slightly reflected; no outer lip teeth present (Pilsbry, 1940).

Distribution: Throughout peninsular Florida and coastal areas north to South Carolina and west to Mexico (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections). Various inland stations in Texas and Alabama may be introductions. Also found in Bermuda, the Bahamas, and Cuba.

Polygyra (*Daedalochila*) Beck, 1837 (Fig. 10)

Shell globose-conic, spire sometimes quite depressed; periphery rounded or obtusely angulate; whorls slowly expanding; umbilicus a mere perforation, becoming broadly umbilicate the last 1/2 whorl; sculpture of usually distinct axial ribs; parietal tooth biramose, sometimes irregular in shape; parietal callus very distinct, often raised with a cavity under it; peristome expanded, slightly reflected; outer lip tooth broad, receding, immersed in aperture or thickened toward tip; basal tooth distinct, marginal or slightly oblique (Pilsbry, 1940).

Distribution: Throughout peninsular Florida and coastal areas north to North Carolina, westward into central Alabama and south central Texas (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Polygyra (*Lobosculum*) Pilsbry, 1930 (Fig. 8)

Shell small, depressed globose-conic; periphery rounded; whorls slowly expanding; umbilicus narrow, tubular, not expanding greatly in last whorl; sculpture smooth; covered with periostracal hairs (worn off in older and dead specimens); parietal tooth biramose, V-shaped, protruding slightly into aperture; parietal callus thin, closely appressed to body whorl; peristome expanded, thickened; outer lip and basal lip teeth present (Pilsbry, 1940).

Distribution: Throughout peninsular Florida and north to Indiana and west into eastern Texas and Oklahoma (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Stenotrema (*Stenotrema*) Rafinesque, 1819 (Fig. 3)

Shell globose-conic to depressed; periphery rounded to distinctly angulate; whorls slowly expanding; umbilicus usually

completely closed; sculpture smooth to weakly ribbed; with or without periostracal hairs; aperture basal, usually slit-like; parietal tooth long, slender, basal lip flattened, callosed, usually with a notch in the middle; outer lip tooth of variable strength (Pilsbry, 1940).

Distribution: The Atlantic Coast west to central Nebraska and Texas and Canada south to areas along the Appalachicola River in north Florida.

Praticolella (*Praticolella*) von Martens, 1892 (Fig. 11)

Shell globose-conic; periphery rounded; whorls expanding relatively slowly; narrowly umbilicate; sculpture (including embryonic shell) smooth; parietal tooth absent; parietal callus thin, transparent; peristome expanded, slightly reflected, usually thickened within; outer and basal lip teeth absent; shell usually with white and brownish color bands (Pilsbry, 1940).

Distribution: Central America north through eastern Mexico into north-central Texas. An introduced species is found in south Florida, Cuba and Hispaniola (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Praticolella (*Filapex*) Pilsbry, 1940 (Fig. 13)

Shell globose-conic; periphery rounded; whorls expanding relatively slowly; minutely umbilicate; sculpture of embryonic whorls of about 8 spiral threads; post-embryonic whorls smooth except for growth lines; parietal tooth absent; parietal callus thin, transparent; outer and basal lip teeth absent; aperture lunate; peristome usually expanded, slightly reflected, thickened within (Pilsbry, 1940).

Distribution: Central Mississippi east to the Atlantic coast and southern Tennessee south to the Florida Keys (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Praticolella (*Farragutia*) Vanatta, 1915 (Fig. 12)

Diagnosis the same as for *Praticolella* (*Filapex*) except that the embryonic whorls are smooth.

Distribution: Coastal Mississippi east to northern Florida (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Mesodon (*Mesodon*) Rafinesque, 1821 (Fig. 7)

Shell globose-conic to depressed; periphery rounded; whorls expanding relatively rapidly; umbilicus open or completely covered by callus; sculpture usually of distinct axial striae, engraved spiral lines; parietal tooth present or absent; parietal callus thin, transparent; peristome broadly expanded, slightly reflected; outer and basal lip teeth absent, sometimes thickened within (Pilsbry, 1940).

Distribution: Southern Canada south to north central Florida and the Atlantic coast west to central Texas and Nebraska (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Mesodon (*Patera*) Albers, 1850 (Fig. 5)

Shell depressed; periphery rounded to bluntly angulate; whorls expanding relatively rapidly; umbilicus completely closed by callus; sculpture of fine axial striae sometimes broken up into granules, engraved spiral lines; periostracal hairs present or absent; parietal tooth well-developed; parietal callus thin; peristome broadly expanded, slightly reflected; outer lip tooth absent; basal lip with a ridge truncated atjunction with outer lip (Pilsbry, 1940).

Distribution: The Atlantic coast west to western Arkansas and from southern Ohio south to the Florida panhandle (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Mesodon (*Inflectarius*) Pilsbry, 1940 (Fig. 6)

Shell globose-conic, moderately depressed; periphery rounded; whorls expanding relatively slowly; umbilicus closed by callus, sometimes partially open; sculpture smoothish; periostracal hairs or scales present; parietal tooth well-developed; parietal callus thin; peristome usually broadly expanded, slightly reflected; outer and basal lip teeth well-developed, rarely absent, tubercular or broad, marginal or immersed in aperture (Pilsbry, 1940).

Distribution: Central North Carolina west to eastern Oklahoma and from Central Michigan south to the Florida panhandle (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; U.F. collections).

Triodopsis (*Triodopsis*) Rafinesque, 1819 (Fig. 4)

Shell globose-conic, spire quite depressed; periphery rounded to bluntly angulate; whorls expanding relatively slowly; umbilicus a small perforation to broadly open; sculpture of regular axial striae, sometimes with engraved spiral lines; parietal tooth well-developed; parietal callus thin; peristome usually broadly expanded, slightly reflected; outer and basal lip teeth well-developed, rarely obsolete or absent, tubercular or broad, marginal or immersed in aperture (Pilsbry, 1940; Emberton, 1988).

Distribution: The Atlantic coast west to eastern Oklahoma and Texas and from southern Canada south to north central Florida (Pilsbry, 1940; Burch, 1962; Hubricht, 1985; Emberton, 1988; U.F. collections).

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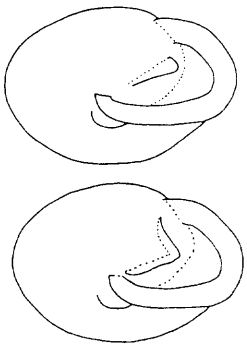
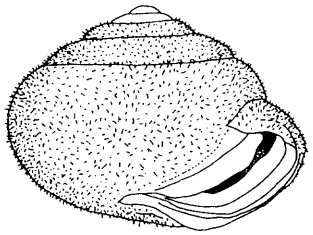
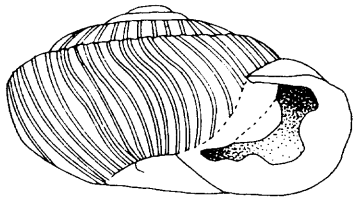


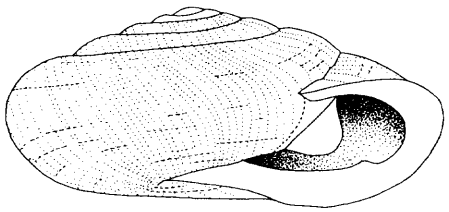
2. Simple parietal tooth (top) versus biramose parietal tooth (bottom).



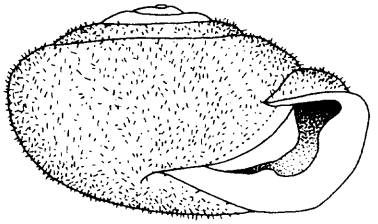
3. *Stenotrema* (*Stenotrema*) *florida* Pilsbry



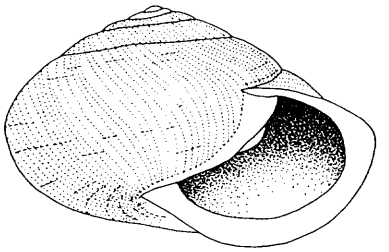
4. *Triodopsis* (*Triodopsis*) *hopetonensis* (Shuttleworth)



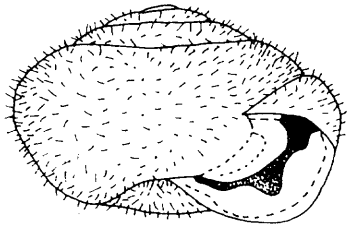
5. *Mesodon* (*Patera*) *perigraptus* (Pilsbry)



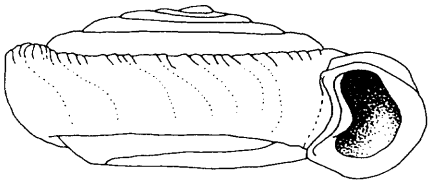
6. *Mesodon* (*Inflectarius*) *inflectus* (Say)



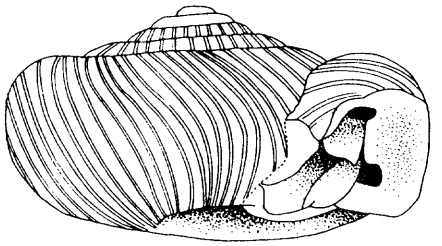
7. *Mesodon* (*Mesodon*) *thyroidus* (Say)



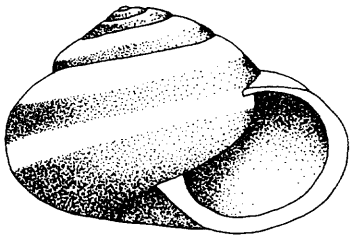
8. *Polygyra* (*Lobosculum*) *pustula* (Ferussac)



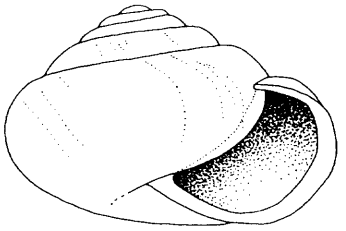
9. *Polygyra* (*Polygyra*) *septemvolva* (Say)



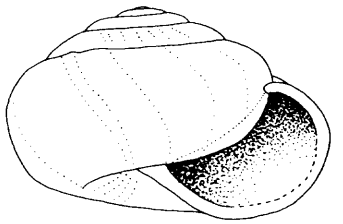
10. *Polygyra* (*Daedalochila*) *auriculata* (Say)



11. *Praticollela* (*Praticollela*) *griseola* (Pfieffer)



12. *Praticollela* (*Farragutia*) *mobiliana* (Lea)



13. *Praticollela* (*Filapex*) *jejuna* (Say)

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