

THE SUBULINIDAE OF FLORIDA<sup>1</sup>  
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In Florida there are seven species of the family Subulinidae. All are introduced and most are well established in many metropolitan areas. Virtually nothing is known about the behavior and life histories of these species (but see Dundee, 1970 for an account on Lamellaxis gracilis). However, Rumina decollata (Linnaeus, 1758) is presently being utilized as a biological control agent of the brown garden snail in California (Fisher and Orth, 1985). The other subulinids also may be part-time carnivores. Rumina decollata was dealt with in a previous circular (Auffenberg & Stange, 1986) and will not be discussed further. The following account provides an identification guide and summarizes present distributions.

All the species are superficially similar, the differences being subtle. It is recommended that many adult specimens be examined from any given population to determine average shell shape and size. Two additional species are mentioned in the literature: Lamellaxis mauritiana (Pfeiffer, 1852) and Opeas octonoides (C. B. Adams, 1845). Recent collections (Pilsbry, 1946; Dundee 1971, 1974) have not confirmed these records and synonymies are not yet determined. These species will not be discussed further.

Subulina octona (Bruguiere, 1792)

Identification: The shell (Fig. 1) is elongate (up to 18 mm in height, 4.5 mm in diameter), translucent and glossy with weak, irregular growth lines. The whorls number 9-12 and the apex is obtuse. The sutures are well-pronounced and sometimes crenulate. The aperture is proportionately small and the outer lip thin. The columella is concave and truncated.

Distribution: Probably originally from South America. It is widely introduced through horticulture and agriculture imports in most tropical and subtropical areas of the world. In Florida this species can be found in most metropolitan areas (UF collections; Pilsbry, 1946; Dundee, 1971, 1974).

Comments: The truncated columella and large size make this species one of the easiest of the family in Florida to identify. It is commonly found in moist habitats in and around metropolitan areas.

Lamellaxis gracilis (Hutton, 1834)

Identification: The shell (Fig. 2) is elongate (up to 11 mm in height, 3.5 mm in diameter), translucent with weak to moderately strong axial growth lines.

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The whorls number 8-10 and the apex slightly obtuse. The sutures are distinct and sometimes crenulate. Aperture is elongate-ovate and the outer lip is thin. The columella is straight and reflected to the left over a small umbilical perforation.

Distribution: Although described from India, this species is probably originally from South America. It is certainly the most widely distributed of all terrestrial snails, found throughout most of the temperate and tropical zones in cultivated and metropolitan areas. It is found in metropolitan areas throughout Florida (UF collections; Pilsbry, 1946; Dundee 1971, 1974).

Comments: This is a variable species taking on several forms depending on the local environment. It can be separated from other Florida species by its relative size and the shape of the upper whorls. It is found in moist habitats (i.e., lawns, leaf litter, under boards, etc.).

Lamellaxis clavulinus (Potiez & Michaud, 1838)

Identification: The shell (Fig. 3) is elongate (up to 11 mm in height, 3.5 mm in diameter), translucent, glossy with weak axial growth lines. The whorls number 7-9 and the apex is very obtuse. The sutures are distinct and non-crenulate. The aperture elongate-ovate and the outer lip is thin. The columella is straight and reflected to the left over an umbilical perforation.

Distribution: Although described from Bourbon Island in the Indian Ocean, its original distribution is unknown, and it is now found in many tropical and temperate areas in or near metropolitan areas. In Florida it is found in metropolitan areas throughout the state (UF collections).

Comments: The bullet-like shape and glossy surface are diagnostic, making this species easily separable from other Florida subulinids. It can be found in moist habitats, such as under leaf litter in metropolitan areas.

Lamellaxis micra (Orloigny, 1835)

Identification: The shell (Fig. 4) is elongate (up to 8 mm in height, 3 mm in diameter), translucent, with weak to very strong axial riblets, usually strongest at the sutures. The whorls number 7-8 and the apex is quite obtuse. The aperture is relatively small and ovate, and the outer lip is thin. The columella is straight and reflected to the left over an umbilical perforation.

Distribution: Although originally from South America to Mexico and the West Indies, this species is widely introduced in many tropical and subtropical areas. It appears to be generally distributed in metropolitan areas throughout Florida (UF collections; Pilsbry, 1946; Dundee, 1971, 1974).

Comments: The relatively small aperture, obtuse apex and usually strong axial riblets are the diagnostic characters of this species. Some individuals are quite smooth. It can be found in moist habitats such as lawns and leaf litter in or near metropolitan areas.

Opeas pyrgula Schmacker & Boettger, 1891

Identification: The shell (Fig. 5) is elongate (up to 8 mm in height, 2.5 mm in diameter), translucent, with weak axial growth lines strongest at the sutures. The whorls number 7-8 with an obtuse apex. The aperture is elongate-ovate and

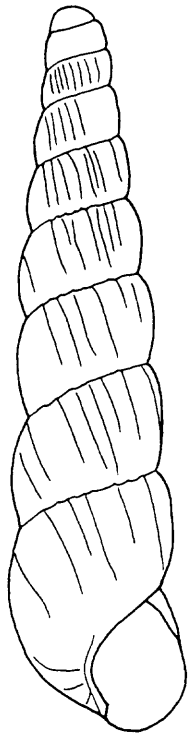


Fig. 1

*Subulina octona*

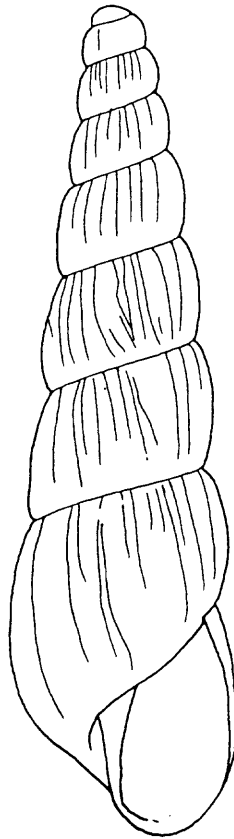


Fig. 2

*Lamellaxis gracilis*

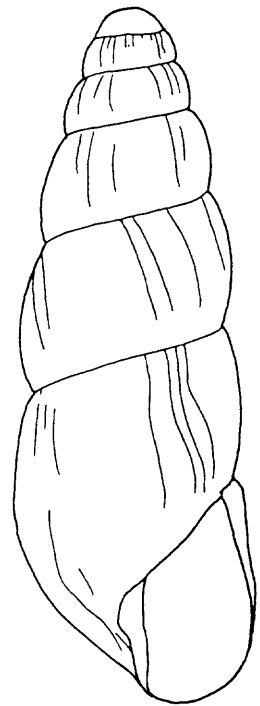


Fig. 3

*Lamellaxis clavulinus*

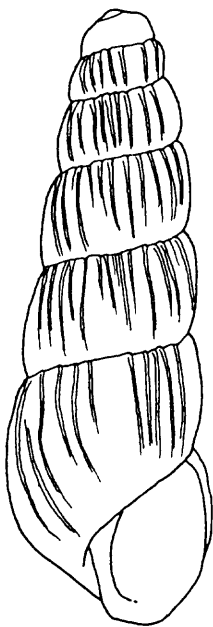


Fig. 4

*Lamellaxis micra*

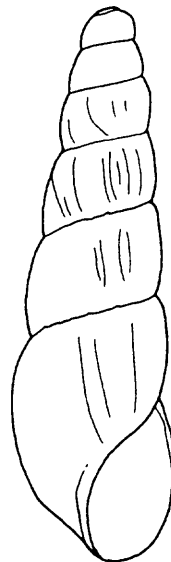


Fig. 5

*Opeas pyrgula*

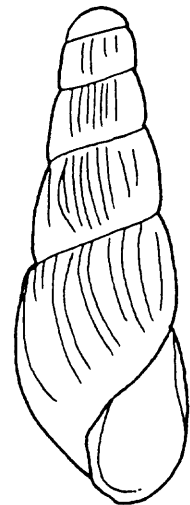


Fig. 6

*Opeas pumilum*

the outer lip is thin. The columella is straight to slightly concave and reflected to the left over an umbilical perforation.

Distribution: Although described from Japan, its original distribution is unknown. It is presently widely distributed in many tropical and subtropical areas. It appears to be generally distributed in metropolitan areas throughout Florida (UF collections; Dundee, 1974).

Comments: This species closely resembles Lamellaxis gracilis. The slightly smaller size and smaller caliber of the whorls of O. pyrgula separate the two species. It can be found in moist habitats in metropolitan areas.

Opeas pumilum (Pfeiffer, 1840)

Identification: The shell (Fig. 6) is elongate (up to 6 mm in height, 2 mm in diameter), translucent, with moderately distinct, strongly curved growth lines. The whorls number 6-7 with weakly defined sutures and an obtuse apex. The aperture is elongate-ovate and the lip is thin, but strongly arched forward in the middle. The columella is concave and reflected to the left over a small umbilical perforation.

Distribution: Originally from South America, this species is widely distributed in many tropical and subtropical areas. In Florida this species has been collected in Collier, Dade, and Lake counties only (UF collections; Dundee, 1971).

Comments: The small size, relatively weak sutures and strongly arched outer lip make this species easily separable from the other Florida species. It is found in lawns and under leaf litter, boards, etc. in or near metropolitan areas.

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