

KEY TO GASTROPODS OF THE UPPER NEW RIVER DRAINAGE

- 1(a) Shell without an operculum. Subclass Pulmonata 5
- 1(b) Shell with an operculum. Subclass Prosobranchia 2
- 2(a) Operculum paucispiral (Fig. 1). Shell usually less than 2 cm long. Family Pleuroceridae 3
- 2(b) Operculum concentric (Fig. 2), adult shell larger than 2 cm long. Family Viviparidae ~~Campeloma crassula~~^{o.}
- 1 1/2" }
 - 3(a) Shell at least 2x long as wide; at least 5 whorls on adults (Fig. 3). Occurs in small Genus Goniobasis . 4
 - 3(b) Shell less than 2x long as wide; usually 4 or fewer whorls in adult specimens ~~Mudalia dilatata~~
Leptoxis
 - 4(a) Shell thin to the point of translucence; apex often eroded; bands of color usually present. Occurs in soft-water creeks ~~Goniobasis~~
Elimia symmetrica
 - 4(b) Shell rarely translucent; apex not eroded, bands of color absent. Occurs in hardwater creeks ~~Goniobasis~~
Elimia simplex
 - 5(a) Shell composed of a single plate-like valve. Family Ancyliidae Ferrissia rivularis
 - 5(b) Shell obviously coiled, not plate-like 6
 - 6(a) Shell discoidal, compressed, spire absent or greatly reduced Helisoma anceps
 - 6(b) Shell coiled, spire prominent 7
 - 7(a) Coiling sinistral (aperture on left) Family Physidae ~~Physa sp.~~
Physella sp.

7(b) Coiling dextral (aperture on right) Family Lymnaeidae 8

8(a) Spire short, body whorl large and inflated; aperture length much greater than 1/2 total shell length . ~~Lymnaea~~ columella
Pseudosuccinea

8(b) Spire longer; aperture length less than 1/2 shell length ~~Lymnaea~~ obrussa
Fossaria

KEY TO THE BIVALVIA OF THE UPPER NEW RIVER DRAINAGE

- 1(a) Shell with hinge teeth consisting of cardinal tooth two lateral teeth. Shell never longer than 3 cm (Fig. 1). Family Sphaeriidae 7
- 1(b) Shell without hinge teeth, or with teeth consisting of 1 cardinal tooth (Pseudocardinal) and one lateral tooth. Adult shell always longer than 3 cm. (Fig. 2). Family Unionidae 2

- 2(a) Hinge teeth much reduced or absent, shell thin 3
- 2(b) Hinge teeth present, shell heavy 4
- 3(a) Shell inflated, with strong posterior ridge (Fig. 3). Fresh specimens often covered with speckled markings; posterior slope corrugated finely Alasmodonta marginata
- 3(b) Shell compressed with low posterior ridge (Fig. 4). Usually uniformly dark or, rarely, with faint rays pseudocardinal teeth below beak

- 4(a) Shell nacre colored, or when white, shell at least 2x long as wide 5
- 4(b) Shell not as 4a 6
- 5(a) Shell rounded in outline, with external pustules (bumps); nacre always purple Cyclonias tuberculata
- 5(b) Shell elliptical, 2x long as wide; never pustulate; nacre purple or white; black exterior Elliptio dilatata

- 6(a) Shell heavily pustulate, elongated and flattened; greenish exterior Tritigonia verucosa
- 6(b) Shell smooth, rounded and somewhat inflated; often conspicuously rayed; yellowish-brown exterior Lampsilis ovata
- 7(a) Beak of shell central or anterior (Fig. 5) . . . Sphaerium striatinum
- 7(b) Beak of shell posterior (Fig. 6) Psidium (3 species)

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By Robert T. Dillen, Jr.

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- 1(b) Shell with an operculum. ^{Subclass} ~~Order~~ Prosobranchia 2
- 2(a) Operculum paucispiral (Fig. 1), Shell usually less than 2 cm long. Family Pleuroceridae 3
- 2(b) Operculum concentric (Fig. 2), adult shell larger than 2 cm long. Family Viviparidae *Campeloma crassulum*
- 3(a) Shell at least 2x long as wide; at least 5 whorls on adults. ^(Fig 3) Occurs in small creeks . . . Genus *Goniobasis* . . . 4
- 3(b) Shell less than 2x long as wide; usually 4 or fewer whorls in adult specimens *Mudalia* (~~Nitocaris~~) *dilatata*
- 4(a) Shell ^{Fig 3} thin to the point of translucence; apex often eroded; bands of color usually present. Occurs in soft-water creeks *Goniobasis symmetrica*
- 4(b) Shell ^{rarely} ~~not~~ translucent; apex not eroded, bands of color absent. Occurs in hardwater creeks *Goniobasis simplex*
- 5(a) Shell composed of a single plate-like valve. Family Ancyliidae *Ferrissia rivularis*
- 5(b) Shell ^{Fig 4} obviously coiled, not plate-like. ^{leave space} 6
- 6(a) Shell discoidal, compressed, spire absent or greatly reduced *Helisoma anceps*
- 6(b) Shell ^{Fig 5} coiled, spire prominent. ^{leave space} 7
- 7(a) Coiling sinistral (aperture on left) Family Physidae *Physa* sp.
- 7(b) Coiling dextral (aperture on right) Family Lymnaeidae 8
- 8(a) Spire short, body whorl large and inflated; aperture length much greater than 1/2 total shell length. ^{Fig 6 Fig 7} *Lymnaea columella*
- 8(b) Spire longer; aperture length less than 1/2 shell length. ^{Fig 8} ^{leave space} *Lymnaea obrussa*



Fig 1



Fig 2

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Fig 3

leave space here



Fig 4

Fig 5

Fig 6

Fig 7

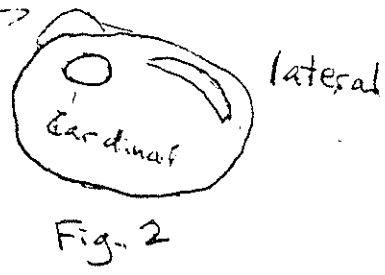
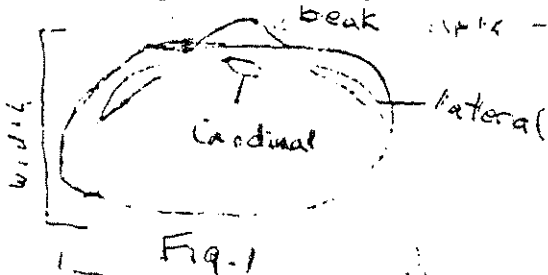
Fig 8

Fig 9

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KEY TO THE BIVALVA OF THE UPPER NEW RIVER DRAINAGE
By Robert T. Dillon, Jr.

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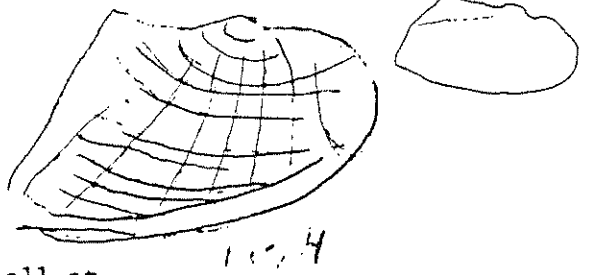
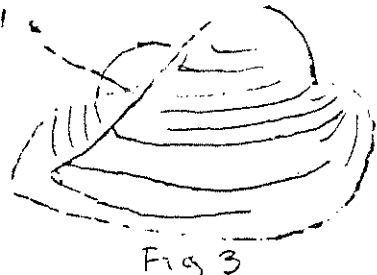


shell space here

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- 2(b) Hinge teeth present, shell heavy 4

3(a) Shell inflated, with strong posterior ridge (Fig. 3). Fresh specimens ^{fresh} covered with speckled markings; ~~(rare)~~ ^{posterior} slope corrugated finely . . . Alusmodonta marginata

3(b) Shell compressed with low posterior ridge (Fig. 4). Usually uniformly dark or, rarely, with faint rays ^{pseudocardinal teeth below beak} . . . Lasmogonta compressa

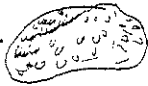



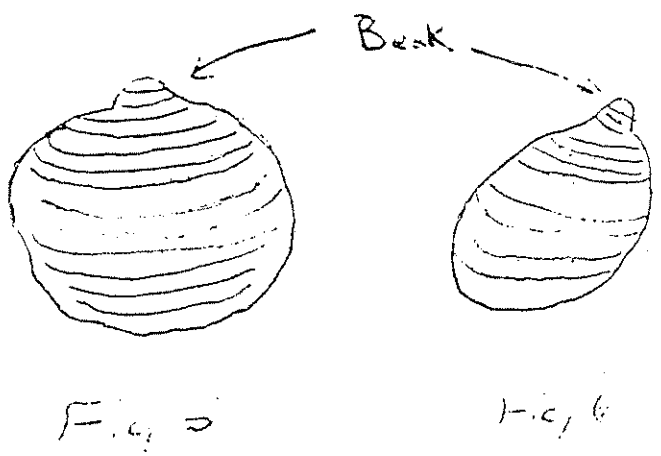
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5(b) Shell elliptical, 2x long as wide; never pustulate; nacre purple, white; ~~or golden~~ ^{black exterior} Elliptio dilatata

- 6(a) Shell heavily pustulate, elongated and flattened; . . . Tritigonia verucosa 
- 6(b) Shell smooth, rounded and somewhat inflated; . . . Lampsilla ovata 
greenish exterior
yellowish-brown exterior
- 7(a) Beak of shell central or anterior (Fig. 5) . . . Sphaerium striatum
- 7(b) Beak of shell posterior (Fig. 6) . . . Psidium (3 species)



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