Key to the terrestrial gastropod genera of Wisconsin and nearby states
Adult Shells only! Jeff Nekola

1	Individuals without external shell	Slugs (not included in this key)
	Individuals with external shell	2
2	Shell as wide or wider than tall	3
	Shell taller than wide	58
3	Shell approximately as wide (.8-1.2x) as tall	4
	Shell obviously wider (>1.2x) than tall	8
4	Shell umbilicate	*Strobilops*
	Shell imperforate to rimate	5
5	Shell >10mm diameter	6
	Shell <10mm diameter	7
6	Shell imperforate, peristome white, expanded	*Neohelix* group
	Shell narrowly umbilicate or rimate, peristome thin	*Ventridens*
7	Peristome thickened, shell surface dull, suture absent, shell >3 mm diameter	*Hendersonia*
	Peristome thin, shell surface satiny to glossy, suture deep, shell <3mm diameter	*Euconulus*
8	Shell diameter >6mm	9
	Shell diameter <6mm	34
9	Shell with open umbilicus	10
	Shell performate, imperforate or rimate	22
10	Peristome expanded, usually white	11
	Peristome thin	15
11	Shell diameter >16mm	12
	Shell diameter <16mm	13
12	Parietal and peg-shaped basal lamella present	*Appalachina*
	Parietal lamella absent, basal lamella a low ridge	*Allogona*
13	Peristome continuous, 'y' or 'u' shaped on parietal surface	*Polygyra* group
	Peristome not continuous	14
14	Basal and palatial lamellae present, umbilicus >2½ mm diameter	*Triodopsis tridentata* group
	Basal and palatial lamellae absent, umbilicus <2½ mm diameter	*Stenotrema* group
15	Shell white, umbilicus >5mm wide	*Haplotrema*
	Shell yellow to brown, umbilicus < 5mm wide	16
16	Shell with spiral or transverse color markings	17
	Shell of single color	18
17	Umbilicus, on average, <=1/5 shell diameter	*Oreohelix*
	Umbilicus, on average, >1/5 shell diameter	*Anguispira*
18	Shell >16mm diameter	*Mesomphix*
	Shell <16mm diameter	19
19	Umbilicus <1mm diameter	*Ventridens*
	Umbilicus >1mm diameter	20
20	Umbilicus .>1/3 shell diameter; shell surface dull, strongly ribbed	*Discus*
	Umbilicus <¼ shell diameter; shell surface shiny with indistinct ribs	21
21	Shell diameter <7 mm	*Zonitoides*
	Shell diameter >7 mm	*Oxychilus*
22	Peristome thin	23
	Peristome expanded, white	26
23	Lamellae present on aperture base	24
	Lamellae absent within aperture	25
24	Shell surface smooth	*Ventridens*
	Shell surface with thick, regularly-spaced ridges	*Gastrodonta*
25	Whorl size increasing by at least 50% each revolution....	*Mesomphix*
	Whorl size increasing slowly in size, tighly coiled	*Ventridens*

26 Shell rimate to umbilicate 27
Shell imperforate 30
27 Strong parietal lamella present 28
Parietal lamella, if present, weak ..... *Mesodon clausus* group
28 Basal and outer aperatural surface without lamellae, peristome not continuous above parietial lamellae ..... *Stenotrema* group
Lamellae present on outer and basal aperatural surface 29
29 Shell <10mm diameter, umbilicus <1mm diameter ..... *Polygyra* group
Shell >10mm diameter, umbilicus >2mm diameter ..... *Triodopsis tridentata* group
30 Palatal lamellae absent 31
Palatal lamellae present 33
31 Shell <13mm diameter, long parietal lamella extending most of aperture length ..... *Stenotrema* group
Shell >15mm diameter, parietal lamella (if present) much shorter than aperture 32
32 Shell at least twice as wide as tall ..... *Xolotrema*
Shell less than twice as wide as tall ..... *Neohelix* group
33 Basal lamella a long ridge ..... *Xolotrema*
Basal lamella short, peg-like ..... *Inflectarius*
34 Shell imperforate 35
Shell perforate to umbilicate 37
35 Aperture wider than rest of shell, shell glassy, transparent ..... *Vitrina*
Aperture less wide than rest of shell, shell transluscent to opaque 36
36 Shell <2mm diameter ..... *Guppya*
Shell >2mm diameter ..... *Glyphyalinia*
37 Umbilicus <¼ diameter of shell 38
Umbilicus >¼ diameter of shell 47
38 Peristome expanded, white ..... *Polygyra* group
Peristome thin 39
39 Aperture strongly crescent-shaped, its width remaining approximately the same throughout 40
Aperture oval, its width being much greater in the middle 41
40 Top of shell with thick elevated ribs ..... *Gastrodonta*
Top of shell with low, indented ribs ..... *Paravitrea*
41 Adult shells with 4-6 whorls which increase less than twice in width per revolution 42
Adult shells with <4 whorls which increase twice or more in width per revolution 44
42 Upper shell surface with dull luster and strong ribs ..... *Discus*
Upper shell surface shiny and with weak ribs 43
43 Last 1/5 of body whorl whitened from thickened shell; lamellae present in aperture ..... *Ventridens*
Body whorl neither thickened nor whitened; lamellae absent ..... *Zonitoides*
44 Shell surface with regular, widely spaced, indented ribs ..... *Glyphyalinia*
Shell surface with irregular, closely spaced ribs 45
45 Shell surface without faint spiral lines ..... *Nesovitrea*
Shell surface with faint spiral lines 46
46 Shell 2½-3½mm diameter; milky-white ..... *Striatura*
Shell 4½-5½mm diameter; rusty-brown ..... *Glyphyalinia*
47 Adult shell diameter >3mm 48
Adult shell diameter <3mm 51
48 Peristome white, expanded ..... *Polygyra* group
Peristome thin 49
49 Shell with prominent, raised spiral lines ..... *Helicodiscus*
Shell without prominent, raised spiral lines 50
50 Ribs small, approximately 10 per mm; shell color light yellow-brown ..... *Zonitoides*
Ribs large, approximately 5 per mm; shell color deep rusty-brown ..... *Discus*
51 Peristome flared and usually thickened ..... *Vallonia*
Peristome unflared and always unthickened 52

52 Spiral lines present on protoconch 53
Spiral lines not present on protoconch 54
53 Whorl width increasing by at least 1.5x each revolution ..... *Striatura*
Whorl width increasing by less than 1.5x each revolution ..... *Helicodiscus*
54 Ribs with distinct, sharp edges 55
Ribs (if present) with indistinct, rounded edges 57
55 Ribs not continuous, with regular pieces removed so that ribs look like a string of beads under high magnification; whorls increasing by at least 1.5 x per revolution ..... *Striatura*
Ribs continuous, whorls increasing by less than 1.5x per revolution 56
56 Major ribs +/- 0.2mm tall, shell almost flat on top ..... *Planogyra*
Major ribs (if any) <0.2mm tall, shell with clear dome ..... *Punctum*
57 Shell with domed spire; whorl base rounded; shell surface wrinkled ..... *Hawaiia*
Shell with flat spire; whorl base flattened; shell surface smooth ..... *Helicodiscus*
58 Lax spiral with no more than 3 whorls in mature shell 59
Tighter spiral with 4+ whorls in mature shell 61
59 Aperture taking up ½ of shell ..... *Catinella*
Aperture taking up more than ½ of shell 60
60 Shell and aperture broadly ovate ..... *Succinea*
Shell and aperture narrowly ovate to elongate ..... *Oxyloma*
61 Adult shell >4mm tall 62
Adult shell <4mm tall 66
62 Shell with glassy luster, transparent to transluscent, yellow to brown color ..... *Cochlicopa*
Shell with silky to dull luster, opaque 63
63 Peristome thickened or flared, white 64
Peristome unthickened and unflared 65
64 Lamellae present in aperture; shell white ..... *Gastrocopta*
Lamellae absent in aperture; shell brown ..... *Pupoides*
65 Shell <9mm tall, dark olive-brown color ..... *Pomatiopsis*
Shell >15mm tall, light gray-brown to white color ..... *Rabdotus*
66 Shell 1¼-1½ times taller than wide, with prominent 0.2mm elevated ribs ..... *Zoogenetes*
Shell >1½ times taller than wide, ribs (if present) much less than 0.2mm tall 67
67 Shell at least 2½ times taller than wide, shell white ..... *Carychium*
Shell 1½-2½ times taller than wide 68
68 0-2 lamellae present in aperture 69
3+ lamellae present in apreature 71
69 Shell white ..... *Gastrocopta*
Shell brown 70
70 Shell >3mm tall ..... *Pupilla*
Shell <3mm tall ..... *Columella*
71 Shell brown, sinulus usually strong ..... *Vertigo*
Shell white to clear, sinulus absent ..... *Gastrocopta*

Species keys (arranged alphabetically by genus)

Allogona: *A. profunda*

Anguispira:

1 Protoconch surface smooth; ribs weak, irregular; spiral color bands present ..... *A. kochi*
Protoconch with distinct cross-hatching; ribs strong, regular; color bands (if present) transverse 2
2 Shell height >½ shell diameter; 3+ ribs per mm on body whorl ..... *A. alternata*
Shell height <½ shell diameter; 2½ or fewer ribs per mm on body whorl ..... *A. strongylodes*

Appalachina: *A. sayana*

Carychium:

1 Shell width 2/5 of height ..... *C. exiguum*
Shell width 1/3 of height 2
2 Shell surface completely smooth 3
Shell surface distinctly striate 4
3 Shell height >1.5 mm; body whorl distinctly wider than penultimate ..... *C. riparium*
Shell height <1.5 mm; body and penultimate whorls of approximately same diameter ..... *C. nannodes*
4 Striae strong with sharp edges, peristome unthickened ..... *C. clappi*
Striae weaker with rounded edges, peristome moderately thickened ..... *C. exile*

Catinella:

1 Shell >1.9 times as tall as broad, color light red-tan, resticted to fens ..... *C. exile*
Shell <1.8 times as tall as broad, color grey-green to tan, habitats various 2
2 Shell averaging >7mm tall, growth lines indistinct; tan-brown color; moist, open habitats ..... *C. avara*
Shells averaging <7mm tall, growth lines relatively distinct, gray-green color ..... *C. wandae / C. gelida*

*Note: Species differentiation in this genus is problematic, as is true for all Succineads. Dissection of putative *C. 'gelida'* from northeastern Iowa indicates that this taxon is conspecific with *C. wandae*. As holotype *C. gelida* is Pleistocene fossil material likely representing *Oxyloma verrilli*, *C. wandae* is the correct name for the extant Midwestern populations.

Cochlicopa:

1 Mature shells >2.3 mm wide, broadly ovate shape ..... *C. lubrica*
Mature shells < 2.3 mm wide, elliptical shape 3
3 Mature shells <6 mm tall; deep suture with rounded whorls; shell translucent brown ..... *C. lubricella*
Mature shells >6 mm tall; shallow suture with flattened whorls; shell transparent, yellow .. *C. morseana*

Columella:

Shell cylindrical; apex domed; adult shell with 6-7 whorls, >2½mm tall ..... *C. columella alticola*
Shell tapered; apex conical; adult shell with 5½-6½ whorls, <=2½mm tall ..... *C. simplex*

* Note: Many races of *C. simplex* exist which may eventually be found to represent distinct species. One of the most striking has approximately the same height as *C. columella alticola*, yet possesses the conical shape of *C. simplex* for the upper 1/3 of the shell. This form ranges from the mountains of the desert SW eastward through the upper Midwest into New England, and is typically limited to wooded carbonate rock outcrops.

Discus:

1 Lamella present on columellar side of aperture ..... *D. patulus*
Lamella absent 2
2 Ribs indistinct or lacking on shell base 3
Ribs distinct on shell base 4

3 Umbilicus >1/3 shell diameter ..... *D. macclintocki*
Umbilicus 1/3 shell diameter or less (Pleistocene fossil only in the upper Midwest) ..... *D. shimekii*
4 Angular body whorl margin ..... *D. catskillensis*
Rounded body whorl margin ..... *D. cronkhitei*

*Note: Though *D. catskillensis* and *D. cronkhitei* populations are often easily separated in some places within the Upper Midwest, across much of northern Minnesota, Wisconsin, Michigan and adjacent areas of Ontario they are not. As a result, they may not represent distinct species. In addition, the distinction between *D. cronkhitei* and Eurasian *D. ruderatus* has never been clearly demonstrated, making it plausible that these represent a single Holarctic species. In this case, *D. ruderatus* has taxonomic priority.

Euconulus:
1 Whorls gradually increasing in size, with last 3 constituting <2/3 of total shell diameter as seen from top; spiral lines cutting through stirae on protochonch ..... *E. polygyratus*
Whorls increasing rapidly in size, with last 3 constituting >2/3 of total shell diameter as seen from top; distinct ribs and spiral lines present on initial whorls 2
2 Protochonch luster shiny with reduced striation; dark brown-copper colored; spiral lines on base as or more distinct than transverse lines ..... *E. alderi*
Protochonch luster silky with crisp striation; tan to light-brown color; spiral lines on base less distinct than transverse lines ..... *E. fulvus*

Gastrocopta:
1 Shell <3¼mm tall; ovoid-conical; color white to brown 2
Shell >3¼mm tall, cylindrical or barrel-shaped; translucent white when fresh (subgenus Albinula) 5
2 Angulo-parietal lamella a simple peg-like tooth 7
Angulo-parietal lamellae not peg-shaped 3
3 Angulo-parietal lamella a single large, folded sheet ..... *G. contracta*
Angular and parietal lobes of angulo-parietal lamellae distinct 4
4 Fresh shells whitish 8
Fresh shells brown-red 9
5 Columellar lamella triangular or round in cross section 6
Columellar lamella a more or less vertical, folded plate .....*G. similis*
6 Columellar lamella with both forward and basally pointing components, appearing more or less pyramidal in apertural view; shell usually >4 mm tall ..... *G. armifera*
Columellar lamella lacking a basal lobe, making the entire structure appear as a downward-pointing peg in apertural view; shell <4 mm tall ..... *G. abbreviata*
7 Shell narrowly conical, with height more than 1½ times width; lower palatal lamella deeply entering aperture ..... *G. pentodon*
Shell broadly conical, with height less than 1½ times width; lower palatal lamella not deeply entering aperture ..... *G. tappaniana*
8 Basal and palatal lamellae absent; shell >2.4 mm tall ..... *G. corticaria*
Basal and palatal lamellae present; shell <2.0 mm tall ..... *G. holzingeri*
9 Angular lobe separate and parallel to parietal lobe throughout ..... *G. rogersensis*
Angular lobe pointed towards and fused to the middle of the parietal lobe ..... *G. procera*

Gastrodonta: *G. interna*

Glyphyalinia:
1 Shell openly umbilicate 2
Shell very narrowly rimate ..... *G. indentata*
2 Shell with evenly-spaced impressed ribs, color clear-white, spiral striation absent ..... *G. rhoadsi*
Shell with irregular impressed ribs, color honey-yellow, spiral striations present ..... *G. wheatleyi*

Guppya: *G. sterkii*

Haplotrema: *H. concavum*

Hawaiia:

1 Callus thickening present inside of shell ..... *Hawaiia* n.sp.
  No shell thickenings present inside of shell ..... *H. minuscula*

*Note: The status of these two taxa is not resolved. Individuals exhibiting a callus are not limited to Upper Midwest fens as claimed by Frest, but also occur in Ozarks and Driftless Area riparian forest.

Helicodiscus:

1 Surface shiny and smooth or with microscopic spiral lines 2
  Surface dull with large, raised spiral lyrae 3
2 Umbilicus deep (usually extending beyond ½ of shell height) and wide (½-1/3 of shell diameter) as seen in mature individuals; somewhat domed spire ..... *H. singleyanus*
  Umbilicus shallow (rarely extending beyond ½ of shell height) and narrow (1/3-¼ of shell diameter) as seen in mature individuals; flat spire ..... *H. inermis*
3 Callus present inside shell without lamellae ..... *Helicodiscus* n.sp.
  Lamellae present inside shell without callus 4
4 Body whorl width (on bottom) <1 mm wide; umbilicus very wide (>2/3 shell diameter) and shallow (<½ shell height) ..... *H. shimeki*
  Body whorl width (on bottom) >=1 mm; umbilicus less wide (<2/3 shell diameter) and deeper (approximately ½ shell height) .....*H. parallelus*

*Note: *H. inermis* and *H. singleyanus* appear very close, and may represent ecophenotypes of the same species. The validity of *Helicodiscus* n.sp. of Frest is not clear, as this form is not limited to fens, but is characteristic of grasslands and glades throughout the region. It seems likely that its heavier callus could be an ecophenotypic response to open habitats.

Hendersonia: *H. occulta*

Inflectarius: *I. inflectus*

Mesodon clausus group:

1 Shell diameter >18 mm ..... *M. thyroidus*
  Shell diameter <=18 mm ..... *M. clausus*

Mesomphix:

1 Umbilicus <1/10 shell width 2
  Umbilicus >=1/10 shell width 4
2 Whorl and protoconch surface nearly smooth; glassy luster ..... *M. inornatus*
  Whorl and protoconch striate; dull luster 3
3 Body whorl absent or with only indistinct spiral lines ..... *M. vulgatus*
  Body whorl with distinct spiral lines ..... *M. globosus*
4 Umbilicus open, 1/5-1/6 shell diameter ..... *M. cupreus*
  Umbillicus rimate, 1/7-1/10 shell diameter ..... *M. friabilis*

Neohelix group:

1 Shell with distinct spiral color bands ..... *Webbhelix multilineata*
  Shell of uniform color 2

2 Diameter >20mm 3
Diameter <20mm ..... *Patera pennsylvanica*
3 Parietal lamellae >1/3 aperture length, shell almost as tall as wide ..... *Mesodon elevatus*
Parietal lamellae <1/3 aperture length or absent, shell clearly wider than tall 4
4 Parietal lamella present; final 3 whorls constituting <80% of shell diameter ..... *Mesodon zaletus*
Parietal lamella absent; final 3 whorls constituting 80% or more of shell diameter 5
5 Pronounced thickening on peristome base near columella ..... *Neohelix alleni*
Peristome thickness essentially constant throughout ..... *Neohelix albolabris*

Nesovitrea:
Shell brown, >4½mm diameter at 4½ whorls ..... *N. electrina*
Shell whitish, <4mm diameter at 4½ whorls ..... *N. binneyana*

Oreohelix: *O. strigosa cooperi* (in Upper Midwest, a Pleistocene fossil only)

Oxychilus:
1 Width of final segment of body whorl 2x that of adjacent section of penultimate whorl; shell diameter generally >11 mm; shell luster not too glossy ..... *O. draparnaudi*
Width of final segment of body whorl ~1.5x of adjacent section of penultimate whorl; shell diameter generally <11mm; glassy shell luster ..... *O. cellarius*

Oxyloma:
1 Penultimate whorl (as seen from bottom) low convex, with maximum width <=½ the maximum aperture width; aperture approaching maximum width in upper ½ of shell ..... *O. salleanum*
Penultimate whorl (as seen from bottom) more highly convex, with maximum width 2/3-3/4 of the maximum aperture width; aperture approaching maximum width at ½ of shell height 2
2 Shell width >½ of shell height; shell apex angle >75° (e.g. 3 shells lined up like pie wedges with apices touching makes more than ½ of a circle) ..... *O. peoriensis*
Shell width <=½ of shell height; shell apex angle approximately 60° (e.g. 3 shells lined up like pie wedges with apices touching makes ½ of a circle or less) ..... *O. retusum*

*Note: this genus, along with all Succineads, is taxonomically challenging, with the species concept being unresolved and taxa being largely unseparable based on shell characteristics. *O. peoriensis* looks very much like a small *Succinea*, and individuals may also key out in that genus. In the *Succinea* key, it will key out as *S. indiana*, with whom it will differ based upon it wetland rather than xeric upland habitat, and its smooth, clear shell (rather than roughened, translucent shells in *S. indiana*)

Paravitrea:
Lamellae consisting of separate pegs ..... *P. multidentata*
Individual lamellae fused into a single callus ridge ..... *Paravitrea multidentata* form *lamellata*

Planogyra: *P. asteriscus*

Polygyra group:
1 Umbilicus <¼ shell diameter, rimate; hairs on shell surface ..... *Daedalochila leporina*
Umbilicus >1/3 shell diameter, shells without hairs 2
2 Margin of shell angular .....*Daedalochila. fatigata*
Margin of shell rounded 3
3 Upper palatial lamella deeply immersed; parietal lamella with straight-sided, angular channel down middle and a tri-lobed terminus ..... *Daedalochila plicata*
Upper palatial lamella only moderately immersed; parietal lamella with rounded, concave channel down middle and with square terminus ..... *Daedalochila dorfeulliana*
*Note: It seems very likely that *D. leporina* should actually be assigned to the genus *Lobosculum* based on a number of conchological criteria.

Pomatiopsis:

Shell approximately twice as tall as wide ..... *P. lapidaria*
Shell approximately 1.3 times as tall as wide ..... *P. cincinnatiensis*

Punctum:

1 Lamellae present on base of aperture ..... *P. smithi*
Lamellae absent 2
2 Umbilicus >1/3 shell diameter ..... *P. blandianum*
Umbilicus <=1/3 shell diameter 3
3 Shell >1.2 mm diameter and >¾ mm tall; color deep rust-brown ..... *Punctum* n.sp.
Shell <=1 mm diameter and <=½ mm tall; color tan to gray 4
4 All ribs of essentially equal size, spearated by 1-3 minor riblets ..... *P. minutissimum*
Some ribs more prominent than others, separated by 5+ minor riblets ..... *P. vitreum*

*Note: *P.* n.sp. of Frest appears closest to the high elevation West Coast *P. californicum*, however it differs from that taxon by possessing a lower spire.

Pupilla: *P. muscorum muscorum*

*Note: This taxon represents a species complex which has not been adequately worked out in North America. *P. muscorum* is present as a Eurasian exotic which has escaped throughout from New England and the Rust Belt states west to eastern Iowa. The haplotypes for these populations are closest to those reported from Sweden. In addition, an unknown number of native taxa have also been lumped under this name. These are genetically highly distinct, and closest to *P. hebes* of the North American west and arctic and *P. pratensis* of western Eurasia.

Pupoides: *P. albilabris*

Rabdotus: *R. dealbatus dealbatus*

Stenotrema group:

1 Lower margin of peristome complete (*Euchemotrema*) 2
Lower margin of peristome with notch removed (*Stenotrema*) 5
2 Shell margin angular ..... *E. hubrichti*
Shell margin rounded 3
3 Body and penultimate whorls >1¼ mm wide as measured from top of shell ..... *E. fraternum*
Body and penultimate whorls <=1¼ mm wide as measured from top of shell 4
4 Shell umbilicate; <8½ mm diameter ..... *E. leai leai*
Shell imperforate; >=9 mm diameter ..... *E. leai aliciae*
5 Right end of parietal lamella entering aperture; aperture less wide
than basal peristome lip ..... *S. stenotrema*
Right end of parietal lamella barely entering aperture, aperture as wide as basal peristome lip 6
6 Aperture wider than basal peristome margin; shell >= 8 mm diameter; interior lamella at the junction of the columella and aperture extending >1 mm beyond basal peristome margin; approximately 4 shell hairs per mm ..... *S. barbatum*
Aperture same width as basal peristome margin; shell approximately 6 mm diameter; interior lamella at the junction of the columella and aperture extending <1 mm beyond basal peristome margin; 5-6 shell hairs per mm ..... *S. hirsutum*

Striatura:

1 Shell diameter <2mm 2
Shell diameter >2mm 3

2 Sprial lines prominent on protoconch ..... *S. meridionalis*
No sprial lines on protoconch ..... *S. milium*
3 Prominent, widely spaced ribs, umbilicus 1/3 diameter, whorls increasing slowly ..... *S. exigua*
Ribs and spiral lines weak, umbilicus 1/5 shell diameter or less; whorls increasing rapidly ..... *S. ferrea*

Strobilops:
1 Margin angular, shell pyramidal, 3-4 basal folds ..... *S. aeneus*
Margin rounded, shell beehive-shaped, 5+ basal folds 2
2 Basal folds of equal size, arranged in smooth arc ..... *S. affinis*
Basal fold size unequal with second from umbilius much longer than first, folds arranged in an irregular arc ..... *S. labyrinthicus*

Succinea:
1 Shell apex angle >60° 2
Shell apex angle <60° 4
2 Mature shell length >15 mm; shell thin and usually translucent ..... S. *ovalis* group, including *S. ovalis, S.* n.sp. Minnesota A and *S.* n.sp. Minnesota B, plus the Wiscsonsin cliff-dwelling taxon called '*S. bakeri*' by Frest
Mature shell length <15 mm 3
3 Shell surface irregular; shell thick and almost opaque ..... *S. indiana* group
Shell surface smooth; shell thin and transparent ..... *Oxyloma peoriensis*
4 Mature shell length >15 mm ..... *S. chittenangoensis*
Mature shell length <15 mm ..... *S. forsheyi*

*Note: A notoriously difficult group, which has been extensively split into a number of taxa based upon what appear to be trivial shell and anatomical differences. However, the shells are all convergent, and given the plascticity of many of the genetalic traits, it is unclear what the biological species concept in this genus is and how many of these proposed taxa are valid. This state of taxonomic affairs is reminiscent of the confusion which surrounds the plant genus *Rubus* in North America. In his Flora of the Northeastern US and Canada, Henry Gleason states:

> "Species in the ordinary sense of the term scarcely exist in the section *Eubatus*..... There have been produced in the American Brambles a large number, possibly as many as 10,000, of small populations of microspecies, differing from each other very slightly, although the culmination of minute differences leads to extremes which are quite unlike. .... In order to keep the number of taxonomic groups within bounds and make them recognizable to the student, it has been necessary to use only a limited number of combinations of characters, thereby segregating thirteen native American groups which can be regarded as collective species. These are intended for convenience only."

This summary applies almost identically to the genus *Succinea*. Thus, like Gleason did with *Rubus*, I have opted to designate in only 4 extant collective species-groups within *Succinea* to make this group easier to deal with by ecological researchers.

Triodopsis tridentata group:
1 Parietal lamella pointed below palatial ..... *T. tridentata*
Parietal lamella pointed at or above palatial 2
2 Shell surface smooth and shining; flat spire ..... *T. discoidea*
Shell surface striate and dull; domed spire ..... *T. vulgata*

Vallonia:
1 Peristome unthickened in mature shells ..... *V. perspectiva*
Peristome strongly white-thickened in mature shells 2
2 Shell surface smooth, shiny, major ribs absent 3
Shell surface dull, major ribs present 4

3 Shell white; ribs low but distinct; diameter of minor axis in mature shells >1½ mm; body whorl diameter remaining relatively constant at aperture so that last portion of whorl remains approximately parallel to penultimate ..... *V. pulchella*
Shell yellow-tan; ribs indistinct or lacking, making shell appear smooth; diameter of minor axis in mature shells <=1½ mm; body whorl diameter increasing rapidly at aperture so that last portion of whorl diverges from penultimate ..... *V. excentrica*
4 Diameter of mature shells <=2mm ..... *V. parvula*
Diameter of mature shells >2mm 5
5 Diameter of mature shells <2½mm, 23-35 ribs on body whorl, ribs > 0.1 mm tall ..... *V. costata*
Diameter >2½mm, 45-50 ribs on body whorl, ribs <0.1 mm tall ..... *V. gracilicosta*

Ventridens:
1 Umbilicus rimate, less than 1/10 shell diameter; shell diameter >6 mm 2
Umbilicus open, more than 1/10 shell diameter; shell diameter <6 mm 4
2 Basal lamellae present ..... *V. gularis*
Basal lamellae absent 3
3 Strong spiral striate on last whorl; shell surface dull below ..... *V. intertextus*
Spiral striae on last whorl indistinct, limited to base of whorl; shell surface glossy below ..... *V. ligera*
4 Palatial lamellae present ..... *V. virginicus*
Palatial lamellae absent ..... *V. suppressus*

Vertigo:
1 Shell surface smooth or weakly striate 2
Shell surface strongly striate 3
2 Six or more apertural lamellae 6
Five or fewer apertural lamellae 9
3 Basal lamella absent 16
Basal lamella present 4
4 Parietal lamella pointed directly at lower palatal lamella, so that parietal, lower palatal, and columellar lamellae form a cross; shell conical ..... *V. meramecensis*
Parietal lamella pointed at upper palatal or space between the upper and lower palatals; shell ovoid or columnar 5
5 Lower palatal lamella inserted near aperture margin so that only short axis is visible when seen in apertural view 18
Lower palatal lamella inserted more deeply into shell so that long axis is visible when seen in apertural view 19
6 Angular lamella absent; palatal wall with callus and light-colored crest; shell dull ..... *V. pygmaea*
Angular lamella present; crest not light-colored; shell shiny 7
7 Adult shell with ~6 whorls; aperture less than 1/3 of shell height ..... *V. morsei*
Adult shell with ~4 whorls; aperture 1/3 or more of shell height 8
8 Shell >2.0 mm tall; lower palatal lamella a straight blade ..... *V. ovata*
Shell <1.8 mm tall; lower palatal lamella curved and deeply entering aperture ..... *V. milium*
9 Three or four apertural lamellae 10
Five apertural lamellae 12
10 Shell height >2¼ mm ..... *V. modesta modesta*
Shell height <2¼ mm 11
11 Body whorl inflated, making shell height less than twice the width; shell color with slight greenish cast; distinct spiral striation on body whorl; aperture margin usually dark olive-brown to black ..... *V. perryi*
Body whorl not greatly inflated, making shell height approximately twice the width; shell color honey-yellow; no spiral striation on body whorl; aperture margin not darkened ..... *V. tridentata*
12 Shell >2¼ mm tall; angular lamella present 13
Shell <2¼ mm tall; angular lamella absent 14

13 Shell height less than twice the width, basal lamella present ..... *V. ovata*
Shell height twice the width or more, basal lamella absent ..... *V. modesta* form *parietalis*
14 Shell weakly striate; single depression behind aperture over both palatal lamellae ..... *V. bollesiana*
Shell smooth; separate slight depressions under each palatal lamellae, or none 15
15 Shell surface dull; strong crest; light-colored callus on palatal wall ..... *V. pygmaea*
Shell surface shiny; crest less prominent; callus of same color as shell .....*V. elatior*

16 Shell >2¼ mm tall, shiny with weak striae ..... *V. modesta modesta*
Shell <=2¼ mm tall, shell dull with distinct striae 17
17 Shell shape conical with body whorl much wider than the penultimate; color deep
cinnamon-red; crest absent; shell striation irregular in strength and spacing ..... *V. meramecensis*
Shell shape ovate with body whorl approximately the same width as the penultimate;
color yellow-red brown; crest present; shell striation uniform ..... *V. cristata*
18 Striae indistinct, with shell often appearing smooth under low (x10) magnification;
single deep depression over both palatal lamellae; ~1¾ mm tall ..... *V. bollesiana*
Striae distinct, with shell not appearing smooth under low (x10) magnification; palatal
depression weak or absent; most forms >1¾ mm tall, with small southern
Appalachian forms being ~1¾ mm tall ..... *V. gouldii*
19 Callus surrounding at least the upper palatal and often the entire palatal wall; ranging from
eastern Ontario to Alaska and south to New Mexico ..... *V. arthuri* form *arthuri*
Callus absent on palatal wall 20
20 Columellar lamella more massive than the parietal; angular lamella strong; lower palatal
lamella so deeply inserted that most of it is obscured by the columellar wall;
striation fine and sharp ..... *V. nylanderi*
Parietal lamella more massive than the columellar; angular lamella weak or absent;
lower palatal lamella less deeply inserted so that most is observable in apertural view;
striae somewhat rounded 21
21 Basal and weak angular lamellae often present; ranging from the Upper
Mississippi River valley to eastern Ontario ..... *V. arthuri* form *hubrichti*
Basal and angular lamellae often absent; ranging from Newfoundland and
central Manitoba to northern Minnesota, northern Wisconsin and the
New England states; also in Alaska and the Yukon ..... *V. arthuri* form *paradoxa*

Vitrina: *V. limpida*

Xolotrema: *X. fosteri*

Zonitoides:
1 Umbilicus covering over ¼ of shell diameter; upper surface dull, ribbed ..... *Z. limatulus*
Umbilicus covering less than 1/5 of shell diameter, upper surface shiny, ribless 2
2 Shell luster satiny from microscopic spiral lines; aperture elliptical; shell yellowish ..... *Z. arboreus*
Shell luster glassy, microscopic spiral lines absent; aperture round; shell rusty-brown ..... *Z. nitidus*

Zoogenetes: *Z. harpa*