

STERKIANA

NO. 41

COLUMBUS, OHIO

MARCH, 1971

CONTENTS	PAGE
AURÈLE LA ROCQUE -- UN MANUSCRIT INÉDIT DE L'ABBÉ PROVANCHER SUR LES MOLLUSQUES DU CANADA SUITE	1
BRANLEY A. BRANSON -- LOCALITY RECORDS FOR OKLAHOMA MOLLUSCA	35
LESLIE HUBRICHT -- THE LAND SNAILS OF SOUTH CAROLINA	41
LESLIE HUBRICHT -- ADDITIONAL LAND SNAILS FROM NORTH CAROLINA	44
RALPH W. DEXTER -- BENJAMIN TAPPAN, JR. (1773-1857) AS A NATURALIST AND A MALACOLOGIST.	45
RALPH M. SINCLAIR -- <i>CORBICULA</i> - SUMMARY NOTE.	50
F. WAYNE GRIMM -- ANNOTATED CHECKLIST OF THE LAND SNAILS OF MARYLAND AND THE DISTRICT OF COLUMBIA	51

EDITORIAL BOARD

HENRY VAN DER SCHALIE
UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

DAVID H. STANSBERRY
OHIO STATE UNIVERSITY
COLUMBUS, OHIO

WILLIAM J. WAYNE
UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA

AURÈLE LA ROCQUE
OHIO STATE UNIVERSITY
COLUMBUS, OHIO

EDITOR

AURÈLE LA ROCQUE
102 W. BEAUMONT ROAD
COLUMBUS, OHIO 43214

IN FUTURE, PLEASE ADDRESS ALL MAIL FOR *STERKIANA* TO THE ABOVE ADDRESS
AND NOT TO THE ONE BELOW.

EDITOR

Aurèle La Rocque
Department of Geology
Ohio State University
125 S. Oval Drive
Columbus 10, Ohio

UN MANUSCRIT INÉDIT DE L'ABBÉ PROVANCHER SUR
LES MOLLUSQUES DU CANADA-SÛITE

7. Gen. AMNICOLA, GOULD & HALDEMAN. *Ammicole*

- Spire assez allongée, tours 4. 1. *candeana*, D'Orb.
 Spire obtuse, tours 3 ou 5; 2. *Dupoteti*, Ferv.
 Tours 3, columelle ombiliquée. 3. *auberiana*.
 Tours 5, columelle non ombiliquée.
 Fam. XVIII. NERITIDES.
- Lèvre arrondie, coquille très épaisse. 1. *Nerita*, L.
 Lèvre aiguë, coquille médiocrement épaisse. 2. *Neritina*, Lam.
 1. Gen. NERITA, Lin. *Nérite*.
- Columelle avec une tache sanguinolente. 1. *antillarum*, Gmel.
 Columelle sans tache;
 Polie sans stries ni sillons;
 Gris varié de blanc. 2. *polita*, L.
 D'un vert uniforme. 11. *viridis*.
 Avec stries ou sillons;
 Columelle avec points soulevés. 12.
 Columelle sans points soulevés;
 Columelle avec 4 plis, sillons
 fortement prononcés. 3. *plicata*, L.
 Columelle avec dents seulement;
 Lèvre gauche lisse, sans plis ni
 points soulevés. 4. *ornata*, Sowb.
 Lèvre gauche avec plis ou points soulevés;
 Spire sans aucune saillie. 5. *peloronta*, L.
 Spire plus ou moins saillante;
 Columelle avec 2 dents au milieu et
 un gros pli de chaque côté.
 Fond blanc avec taches noires en
 carré sur les côtés. 6. *tessellata*, Gmel.
 Fond noir avec quelques taches blanches;
 Côtes toutes striées de petites
 lignes blanches transverses. 7. *Bernhardi*, Réc.
 Côtes avec seulement quelques
 taches blanches éparses. 8. *zebra*, Gray.
 Columelle avec 4 dents distinctes;
 Noire avec taches blanches. 9. *scabricostata*, Lam.
 Blanche, variée de noir et
 de rouge. 10. *versicolor*, Gmel.

2. Gen. NERITINA, Lam. Néritine.

- Noire avec lignes fauves espacées. 1.
- Blanche avec lignes noires, l'intérieur jaune. 2. pupa, L.
- Verdâtre avec très fines lignes noires;
- Lignes noires ondulées, sans autres taches. 3. reclivata, Say.
- Lignes noires interrompues par des taches blanches bordées de noir. 4. meleagris, Cab.
- Variée de blanc, de brun et de violet;
- Columelle à dents nombreuses, variée de jaune, de violacé et de noir. 5. picta, Sw.
- Columelle sans dents, variée de violet, de blanc et de brun. 6. fluviatilis, L.

Fam. XIX. TURBINIDES.

- Coquille solide, rugueuse;
- Tours de la spire convexes, souvent sillonnés ou tuberculés; ouverture grande, ronde; opercule écailleux, solide, calleux extérieurement, poli, sillonné ou mamellé intérieurement, à peine spiral. 1. Turbo, Lin.
- Tours de la spire aplatis ou peu convexes, ouverture anguleuse, perlée, brillante, spire à base aplatie ou concave, les bords des tours carénés ou étoilés. 2. Imperator, Montf.
- Tours de la spire ni carénés ni étoilés; ouverture anguleuse; spire pyramidale, à base déprimée ou peu saillante;
- Sans dent à la columelle. 3. Trochus, L.
- Une dent à la columelle. Chlorostoma.
- Coquille mince, polie, conique, à spire aiguë;
- Columelle simplement calleuse, non tordue. 4. Phasianella, Lam.
- Columelle tordue;
- Lèvre non prolongée en avant; columelle tronquée. 5. Elenchus, Humph.
- Lèvre prolongée en avant. 6. Bankinia, Menke.
- Coquille à spire obtuse, striée ou polie;
- Columelle avec une dent à la base. 7. Monodonta, Lam.
- Columelle sans dent; ombilic simple;
- Ombilic très grand; coquille profondément perforée. 9. Euomphalus, Sowerb.
- Ombilic ordinaire, petit;
- Spire à tours aplatis, à sutures peu enfoncées. 10. Gibbula, Leach.
- Spire à tours convexes, à sutures enfoncées. 11. Margarita, Leach.
- Coquille discoïdale, orbiculaire;
- Coquille non ombiliquée;

- Base entièrement calleuse; ouverture échancrée en avant, lèvre rebordée extérieurement. 12. Cyclops.
- Base peu calleuse, ouverture sans échancrure. 13. Rotella, Lam.
- Coquille ombiliquée, spire obtuse à tours convexes. 14. Adeorbis, Wood.
1. Gen. TURBO, Lin. Sabot.
- Coquille imperforée;**
- Spire à tours couronnés d'épines ou de varices;
Callosité de la lèvre gauche teinte de verdâtre. 1. coronatus, Gmel.
- Callosité de la lèvre gauche teinte de rouge. 2. rugosus, Lin.
- Spire à tours chargés de noeuds ou de boutons;
Callosité de la lèvre gauche teinte de vert et de rouge. 3. pica, L.
- Callosité de la lèvre gauche blanche;
Surface ridée. 4. crenulatus, Gmel.
- Surface avec simples rangs de nodules. 5. fluctuatus, Gray.
- Spire à tours simples, profondément canaliculés. 6. Montagui,
- Coquille ombiliquée.** 7. undulatus, Chemn.
2. Gen. IMPERATOR, Montfort. Empereur.
- Lèvre gauche teinte de rouge et de noir. 1. olivaceus, Wood.
- Lèvre gauche blanchâtre, sans tache de noir;
Spire conique. 2. unguis, Wood.
- Spire déprimée, turbinée;
Tours avec 2 rangs d'épines. 3.
- Tours avec un rang d'épines. 4.
3. Gen. TROCHUS, Lin. ; Toupie.
- Coquille ombiliquée;**
- Columelle simple, lisse, arquée;
Tours aplatis;
De couleur uniforme, épiderme ... 1. Niloticus, L.
- Epiderme colorié. magus.
- Tours arrondis, convexes, sillonnés. 2. Fermonii.
- Columelle denticulée;**
- Ombilic grand, à tours ridés. 3. umbilicatus, Mont.
- Ombilic à tours lisses. 4. vernus, Chemn.
- Coquille imperforée;**
- Spire à tours anguleux;
Intérieur nacré. (Pseudotrochus). 5. Virgineus.
- Intérieur d'un jaune d'or. 6. chrysostomus, L.
- Spire à tours couronnés de pointes. 7. inaequalis? Gualt.
- Spire à tours arrondis excepté le premier;
Spire à tours sillonnés de cordons,
les intervalles striés. 8. radiatus, Gmel.
- Spire à tours sillonnés de lignes ponctuées sans intervalles;
Tours fortement convexes, blanche piquetée
de rouge. tumidus Chem.
- Tours peu convexes, à taches brun-violacé si
nombreuses qu'elles couvrent le fond. 10. Oliviri Lam.
- pour la plus grande partie. 11. fragaroides Lam.

- Tours peu convexes, fortement striés, couleur
noire avec l'ouverture d'un nacré argenté. 12. argyrostomus.
- Tours aplatis, spire brusquement conique;
Spire lisse dans le bas. 11. cornutus, Lin.
- Spire striée;
Testacé avec points fauves. 12. ziziphinus.
- Non;
Premier tour caréné. 13. versicolor, Mencke
- Premier tour arrondi. 14. Kausieri.
- Gen. PHASIANELLA, Lamarck. Phasianelle.
- Spire conique, aiguë;
Rose pâle avec taches laissant voir le fond en lignes transverses;
Stries obliques plus pâles, traversant oblique-
ment les tours de la spire. 1. speciosa,
- Stries obliques plus pâles mal définies, au
sommet seulement des tours. 2. australis, Gmel.
- Sans stries obliques plus pâles. 3. pulla, L.
- Blanc avec lignes et bandes spirales noires et brunes. 4. tritonis, Chem.
- Spire obtuse, taille très petite, rose. 5. puella, Gmel.
5. Gen. ELENCHUS, Humphrey. Elenque.
- Tours de spire non couronnés d'un rebord; blanche avec lignes spirales
noires, brunes, jaunes, rousses;
Lèvre intérieure roux-violacée. 1. virgineus L.
- Lèvre intérieure blanche. 2. cingulatus, Lam.
- Tours de spire couronnés d'un rebord. 3. fasciatus, Müll.
9. Gen. EUOMPHALUS, Sowerby. Euomphale.
- Blanc avec taches rayonnantes brunâtres. 1. excavatus, Lam.
- Brun-violacé, avec quelques demi-bandes transverses
pâles au sommet des tours. 2. ligulatus, Mencke.
11. Gen. MARGARITA, Leach. Marguerite.
- Spire à lignes soulevées spirales. 1. striata.
- Spires à stries transversales. 2. obscura, Gmel.
13. Gen. ROTELLA, Lam. Roulette.
- Sutures bordées d'une ligne rose-pâle, dessous
brun-violet. 1. vestiaria, L.
- Sutures bordées d'une ligne noire, dessous blanc. 2. elegans, Beck.
- Fam. XX. HALIOTIDAE. Ormier. Oreille de mer.
- Spire aplatie, lèvre percée de trous. 1. Haliotis.
- Spire proéminente; lèvre cochée en avant. 2. Janthina.
1. HALIOTIS.
- Intérieur à plis non striés;
Dos teint de noir vers le bord. 1. Cracherodii.
- Dos non teint de noir.
- Sans pli à l'intérieur au dessus des trous.
- Dos teint de jaune-orange. 2. pulcherrima, Mart.
- Dos nacré blanc. 3.
- Avec un pli à l'intérieur au dessus des trous. 4.

- Intérieur à plis striés transversalement;
 Plis rayonnants réguliers en dedans et en dehors.
 Plis irréguliers en dedans et en dehors.
 2. JANTHINA. 5. ruber.
 6. tuberculata.
- Taille moyenne;
 Dernier tour de la spire arrondi. 1. communis.
 Dernier tour de la spire subcaréné. 2. striatula.
- Taille très petite, 1/4 pce. 3. exigua.
- Fam. XXI. FISSURELLIDAE
- Coquille percée au sommet;
 Bord ondulé par les côtes, mais non crénelé. 1. Fissurella
 Bord crénelé. 2. Glyphis
- Coquille fendue en avant, au bord. 3. Emarginula
 1. FISSURELLA
- Coquille à côtes semblables;
 Dedans vert. 1. virescens
 Dedans blanc. 2. alba
- Côtes variées, grosses et petites;
 Côtes grosses et petites régulièrement alternes. 3. alternata
 Côtes très soulevées suivies de 2 ou 3 plus petites. 4. Listeri?
- Fam. XXII. CALYPTRAEIDAE
- Intérieur de la coquille en partie couvert par une cloison attachée au
 sommet et ouverte en avant;
 Coquille en courbe oblique, lamelle formant la
 cloison en demi gobelet 1. Calyptraea
- Coquille droite ou peu s'en faut; lamelle formant la
 cloison à peu près plane. 2. Crepidula
- Intérieur de la coquille libre, non recouvert par une cloison;
 Lamelle intérieure formant une coupe entière. 3. Crucibulum
 Lamelle intérieure en demi spirale. 4. Trochita
 Lamelle intérieure 0. 5. Pileopsis.
2. Gen. CREPIDULA, Lam. Crépidule.
- Spire contiguë au bord postérieur;
 Intérieur noir avec la lamelle blanche. 1. rugosa
- Intérieur blanc pur, de même que la lamelle;
 Lamelle sillonnée transversalement. 2. nivea
 Lamelle unie. 3. unguiculata
- Intérieur blanc-jaunâtre ou taché;
 Dos strié longitudinalement;
 Lamelle à stries transverses. 4. aculeata
 Lamelle lisse. 5. porcellana
- Dos sans stries longitudinales;
 Lamelle près du bord extérieur;
 Coquille déprimée; spire à peine distincte. 6. maculosum
 Coquille convexe; spire distincte. 7. fornicata
- Lamelle distante du bord extérieur;
 Coquille ovale, oblique. 8. loricata
 Coquille presque cylindrique, étroite. 9.
- Spire distante du bord extérieur. 10. adunca.

4. Gen. TROCHITA, Schum.

Dos à stries rayonnantes.	1. radians
Dos sans stries.	2. mamillaris

Fam. XXIII. PATELLIDAE, Patellides.

Sommet de la coquille près du centre;	
Coquille peu convexe;	
6 dents linguales; 4 centrales et 2 latérales.	1. Patella
6 dents linguales, sur 2 rangs.	2. Acmaea
Coquille très convexe, conique;	
Impression musculaire en fer à cheval, ses côtés égaux.	3. Scurria
Impression musculaire à côté droit plus court.	4. Gadinia
Sommet écarté du centre;	
Coquille convexe, en ovale comprimé.	5. Nacella
Coquille déprimée, en ovale étalé;	
Sommet antérieur; dos sans côtes.	6. Pilidium
Sommet postérieur; dos avec côtes.	7. Siphonaria
1. PATELLA, Lin. Patelle.	
Intérieur blanc sans taches;	
Bord uni; impress. soulevée dans les indiv. âgés.	1. Mexicana
Bord finement crénelé et piqueté de noir.	2. discors
Intérieur plus ou moins taché;	
Bord crénelé par des côtes inégales;	
Lignes brunes géminées constituant les rayons à l'intérieur.	3. ornata
Rayons constitués par des lignes isolées;	
Stries uniformes;	
Stries entremêlées de côtes;	
Sommet excentrique (mots illisibles);	
Sommet central.	9. vulgata
Bord sans côtes, finement strié;	
Fond int/érieur/ blanchâtre, à 9 larges rayons formés de lignes brunes.	5. umbella
Fond blanchâtre, avec taches indécises.	6. caerulea
Fond blanc, avec l'impression brune, le bord à taches brunes.	7.
2. ACMAEA, Esch. Acmée.	
Coquille convexe, à côtes très fortes.	1. spectrum
Coquille déprimée, à côtes nulles ou peu apparentes;	
Sommet proéminent, rapproché du bord antérieur.	2. persona
Sommet plus ou moins déprimé	
Dos avec côtes fines et nombreuses, intérieur verdâtre.	3. mesoleuca
Dos à côtes distantes;	
Intérieur blanc, sans rayons.	4. patina
Intérieur avec rayons bruns	
Rayons simples, ou simplement bifides.	2. testudinalis
Rayons formés de lignes brunes plus ou moins nombreuses.	6. fascicularis

- Gen. SCURRIA
- Silloné de côtes. 518
- Non silloné;
- Intérieur blanc. 517. mitra
- Intérieur noir. 523.
- FAM. XXIV. CHITONIDAE
- Bord du manteau treillissé. 1. Chiton
- Bord épineux ou à écailles allongées. 2. Acanthopleura
- Bord poilu. 3. Mopalia
1. CHITON, Lin. Oscabrion.
- Bord noir, sans taches. 1. magnificus
- Bord plus ou moins taché;
- Bord à taches alternes noires et blanchâtres;
- Dos des valves lisse. 2. marmoreus.
- Dos des valves strié. 3. squamosus.
- Bord d'un gris uniforme;
- Dos des valves strié
- Dernière valve à sommet marginal. 4. Cumingii
- Dernière valve à sommet vert et au milieu. 5. Siculus
- Dos des valves granulé-écailleux, non strié;
- 2e valve avec une carène noire en forme d'éperon. 6. discrepans
- 2e valve sans carène noire. 7. cinereus
- Gen. ACANTHOPLEURA
- Une ligne pâle de chaque côté du dos. 1. picea
- Point de ligne pâle. 2.
- FAM. XXVII. BULLIDAE
- Spire visible; columelle calleuse. 1. Bulla
- Spire cachée; columelle tordue. 2. Atys
1. Gen. BULLA Lam. Bulle
- Taille moyenne, de plus d'une ligne;
- Fond jaunâtre, marbré de brun rosé;
- Très renflée, peu allongée. 1. ampulla
- Plus ou moins allongée;
- Dos avec taches brunes, détachées. 2. media
- Dos avec fines marbrures rosées. 4. occidentalis
- Fond blanc avec taches fauves détachées. 7-544
- Taille très petite, d'un blanc sale. 6. obstricta.
- FAM. XXVIII. OLEACINIDAE
- Gen. GLANDINA, Schum.
- Columelle sinuée au milieu, teste rude. 1. truncata
- Columelle avec une courbe régulière, teste poli. 2. rosea.
- FAM. XXIX. CYLINDRELLIDAE
- Spire moyenne, non très grande;
- Columelle simple. 1. Cylindrella
- Columelle avec dents. 2. Clausilia
- Spire très grande, 15 à 20 tours. 3. Megaspira

1. Gen. CYLINDRELLA

Blanc pur.

Brun-jaunâtre corné;

Tours de la spire avec côtes;

Le dernier tour blanc.

Le dernier tour de couleur uniforme.

Tours de la spire simplement striés, non à côtes;

Taille moyenne.

Taille grande.

Fam. XXX. HELICIDAE

Coquille à spire conique ou pyramidale;

Columelle tordue et tronquée en avant;

Coquille imperforée;

Spire aigüe au sommet;

Teste opaque, plus ou moins solide;

Columelle tronquée en avant.

Columelle épaissie, arquée, faisant suite à l'ouverture.

Teste mince, diaphane; ouverture très grande;

Spire distincte.

Spire obsolète, très peu apparente.

Spire obtuse, coquille transparente.

Coquille plus ou moins ombiliquée;

Dernier tour de la spire à peine plus long que les précédents.

Dernier tour de la spire deux fois plus long que le précédent;

Lèvre réfléchie; un pli à la columelle.

Lèvre aigüe, simple, columelle simple.

Columelle droite, non tordue;

Coquille cylindrique;

Dernier tour rétréci à sa base.

Dernier tour non rétréci à sa base.

Coquille pupiforme, oblongue; taille petite;

Tours de la spire striées.

Tours de la spire lisses.

Coquille conique, lèvre rebordée.

Coquille à spire déprimée, non conique;

Coquille le plus souvent imperforée;

Teste opaque, plus ou moins solide.

Teste mince, diaphane;

Péristome simple.

Péristome rebordé.

Coquille distinctement perforée;

Teste opaque, plus ou moins solide;

Une dent à la columelle.

Columelle sans dent;

1. Humboltiana

2. trinitaria

3. costata

4. artemisiae

6. gracilis

1. Achatina

2. Orthalicus

3. Succinea

3a. Omalonyx

4. Cionella

5. Stenogyra

6. Bulimus

7. Bulimulus

8. Pupa

9. Strophia

10. Pupilla

11. Vertigo

12. Partula

13. Helix

14. Vitrina

15. Perenna.

16. Trepidopsis

(err. typ. pro Triodopsis. AL)

- Péristome non réfléchi;
 Animal sans pore muqueux caudal. }7. Zonites
 Animal avec un pore muqueux caudal. 18. Patula
- Péristome réfléchi plus ou moins, test souvent presque hyalin. 19. Macrocyclis
 Teste hyalin ou à peu près. 20. Hyalina
1. Gen. ACHATINA, Lam. Achatine
- Partie inférieure de la columelle d'un beau rose. 1. marginata
 Partie inférieure de la columelle blanche. 2. fasciata
2. Gen. ORTHALICUS, Beck. Orthalique
- Callus brun foncé à la columelle. 1. undatus
 Point de callus brun à la columelle. 2. zebra
3. Gen. SUCCINEA, Draparn. Succinée
- Spire petite, cependant distincte;
 Tours de spire peu convexes;
 Ouverture très allongée, ovale;
 Ouverture obtuse à son extrémité supérieure. 1. obliqua
 Ouverture aiguë à son extrémité supérieure. 2. Permensis
 Ouverture peu allongée, large pour sa longueur. 3. ovalis
- Tours de spire très convexes;
 Spire petite, moins du quart de la longueur de la coquille. 4. putris
 Spire grande, de près de la moitié de la longueur. 5. avara
- Spire très petite, à peine distincte. 6. Barbadosensis
 4. Gen. CIONELLA, Jeffr. Cionelle¹
- Spire peu allongée, obtuse. 1. subcylindrica
 Spire allongée, aiguë. 2. Glaynii
5. Gen. STENOgyRA, Shutt. Sténogyre
- Teste épais, spire tronquée. 1. decollata
 Teste mince, transparent; spire allongée, entière. 2. octona
7. Gen. BULIMULUS, Leach. Bulimule.
- Fond blanc rosé;
 Spire courte, aiguë; ouverture en ovale élargi, ombiliquée. 1. dealbata
 Spire allongée, ouverture rétrécie, allongée, ombilic 0. 2. Kamneri
- Fond blanc lactescent;
 Spire avec bandes et taches brunes. 3. Knorri
 Spire sans bandes colorées;
 Blanc lactescent, ouverture rebordée. 4. durus
 Blanc jaunâtre, ouverture simple. 7. detritus, Studer
- Fond d'un jaunâtre corné;
 Lèvre blanche en dedans, une ligne colorée sur la spire. 5. exilis, Gm.
 Lèvre concolore, point de ligne colorée. 6. sepulchralis, Poe
8. Gen. PUPA, Lam. Maillot.
- Spire à côtes longitudinales;
 Columelle avec plis seulement à l'intérieur. 1. mumia, Fer.
 Columelle avec dents à l'intérieur;
 Columelle avec une seule dent. (Strophia) 2. incana, Reeve
 Columelle avec 2 dents. 3. uva, Lin.

1. Ici l'auteur a inscrit "Gen. Omalonyx, D'Orb." sans autre indication.

- Spire sans côtes, lisse;
 D'un blanc rosé, fauve au sommet. 11. monachi
 D'un blanc cendré. 4. cinerea Drap.
 D'un jaune de corne;
 Une dent à chaque lèvre. 5. madrideus, Drap.
 Trois dents à chaque lèvre. 6. arenaria, Moq.
 Une dent à la columelle seulement. 7. muscorum, Pfeif.
 Point de dents à la columelle;
 Spire moyenne;
 Ouverture oblique. 8. fallax, Cerl.
 Ouverture presque droite. 9. pellucida, Oss.
 Spire très courte, presque discoïde. 10. simplex, Gould.
12. Gen. PARTULA,
 Blanche, extrémité de la spire rosée. 1. gibba, Fér.
 Jaune corne uniforme. 2. faba, Brug.
13. Gen. HELIX, Linn. Hélice.*
 Coquille ombiliquée ou perforée;
 Ouverture lunulaire-arrondie;
 Péristome mince, droit, simple, ses extrémités se rapprochant;
 Coquille mince, très finement striée; MICROPHYSA 1. vortex, Oss.
 Coquille assez solide, rugueuse ou fortement striée; PATULA;
 Coquille discoïde, à spire très aplatie;
 Dernier tour de la spire caréné;
 Epistome continu dans toute l'ouverture. 2. lapicida, L.
 Péristome entier à la columelle;
 Epiderme lisse. 3. striatella.
 Epiderme hispide. 4. hispida.
- Coquille à spire plus ou moins élevée;
 Avec des raies alternes brunes et jaunes. 4. alternata, Say
 Avec bandes brunes en spirale. 5. solitaria, Say
 Sans raies ni bandes. 6. perspectiva, Say
- Péristome épaissi, régulier, sinuéux ou denté;
 Péristome mince, labié en dedans, réfléchi à
 la base seulement. IX FRUTICICOLA;
 Grisâtre avec lignes spirales blanches. 7. griseola, Cpr.
 D'un corné roussâtre uniforme. 8. rufescens, Penn.
- Péristome réfléchi dans toute son étendue;
 Les 2 lèvres avec 2 ou plusieurs lamelles en
 dedans. STROBILA, 9. labyrinthica, Say
 Lèvres simples, l'extérieure quelquefois avec une dent;
 Lèvres contiguës ou se rapprochant à leurs
 extrémités. VALLONIA

* La clé du genre HELIX qui suit a été remaniée plus tard sur cinq pages sans matricule qui font suite à la page 60 du manuscrit, laquelle porte le mot "FIN" qui indique bien que ces cinq pages sont postérieures aux 60 précédentes. Cette nouvelle clé a été insérée ici et fait suite à la première version.

- Spire lisse. 10. pulchella, Müll.
 Spire striée en côtes;
 Columelle sans dents. 11. costata Müll.
 Une dent à la columelle. 53. paludosa, Cpr.
 Lèvres écartées à leurs extrémités: MESODON;
 Coquille imperforée, l'ombilic couvert par la callosité;
 Spire sans lignes brunes;
 Bord columellaire sans dent
 Spire déprimée;
 Blanc marbré de brun. 251. spiriplana
 Sans marbrure;
 Bord columellaire calleux. 12. major, Bin.
 Bord columellaire nu. 13. albolabris, Say
 Spire en cône obtus;
 Lèvre extérieure avec 1 petite
 dent à la base. 14. Pennsylvanica, Grn.
 Lèvre extérieure sans dent. 15. Mitchelliana, Lea
 Bord columellaire avec une dent. 16. exoleta, Binn.
 Spire avec lignes fauves spirales. 17. multilineata, Say.
 Coquille largement perforée;
 Péristome largement réfléchi. 18. profunda, Say
 Péristome étroitement réfléchi. 19. Sayi, Binn.
 Coquille à ombilic en partie couvert par le péristome;
 Une dent à la columelle, péristome
 largement réfléchi. 20. thyroides, Say.
 Point de dent à la columelle, péri-
 stome brièvement réfléchi;
 Derniers tours de la spire arrondis. 21. clausa, Say.
 Derniers tours de la spire subanguleux;
 Péristome blanc. 22. similaris, Fer.
 Péristome jaunâtre. 23. carthusiana, Mull.
 Ouverture subréniiforme ou sinuée irrégulièrement, assez grande;
 Péristome étroitement réfléchi, épais: IV POLYGIRA coquille
 perforée;
 Tous les tours de la spire visibles en dessous. 24. septemvolva, Say
 Un ou 2 tours seulement visibles en dessous;
 Lèvre extérieure sans dents. 25. Carpenteriana, Bl.
 Lèvre extérieure avec 2 dents;
 Spire subconique, assez élevée. 26. uvulifera, Shut.
 Spire déprimée, peu saillante; sans côtes. 27. holosericea S..
 Péristome largement réfléchi, anguleux, blanc, coquille
 ombiliquée. VI. TRIODOPSIS.
 Ombilic couvert par le callus;
 Ouverture distinctement trilobée. 28. palliata, Say
 Ouverture presque entière, à peine lobée. 29. appressa, Say
 Ombilic plus ou moins découvert;
 Lamelle pariétale unie supérieurement avec
 le péristome. 30. 3-dentata, Say

- Lamelle pariétale libre;
 Lamelle pariétale au dessus de la dent supérieure de la lèvre. 31. inflecta, Say
 Lamelle pariétale au dessous de la dent supérieure. 32. fallax, Say
 Ouverture très étroite, presque verticale: VIII STENOTREMA
 Lèvre infléchié en dedans. 33. stenotrema, Fer.
 Lèvre étroitement réfléchié;
 Lèvre cochée au milieu. 34. hirsuta, Say
 Lèvre non cochée;
 Taille plus forte, spire plus élevée. 35. monodon, Rack.
 Taille plus petite, spire plus aplatie. 36. Leaii, Ward.
 Coquille imperforée à ombilic plus ou moins couvert par le callus;
 Coquille sans bandes colorisées, dernier tour non descendant:
 VII MESODON
 Coquille le plus souvent à bandes colorisées, dernier tour descendant;
 Péristôme réfléchi, épais, son bord columellaire calleux,
 resserré: X. TACHEA
 Couleur jaune verdâtre avec bandes fauves. 37. hortensis, Mull.
 Couleur blanc, brun, rosé, etc.
 Epistome blanc;
 Point de dent à la lèvre; 38.
 Une forte dent à la lèvre, en dedans. 39. acuta, Lam.
 Epistome rouge ou rosé. 40. hemastoma, Lin.
 Epistome noir ou brun;
 Couleur jaune rosé. 41. nemoralis, L.
 Couleur brun violacé. 42. orbiculata, Fer.
 Péristome étalé non réfléchi, labié en dedans, bord
 columellaire réfléchi. XI. POMATIAS
 Tours de la spire convexes, striés, rugueux;
 Opaque, d'un jaunâtre corné;
 Epiderme nu;
 Côtes 0; stries irrégulières;
 Sans stries blanches longitudinales. 43. pomatia.....
 Avec stries blanches longitudinales. 54.
 Côtes aiguës et très régulières. 44. auricoma, Fer.
 Epiderme villeux. 45. villosa, Drap.
 Semi transparente, d'un blanc hyalin. 46. Cubensis, Cpr.
 Tours de la spire déprimés, sans côtes;
 Péristome blanc;
 Teste épais, blanc pur. 47. candidissima,
 blanc tacheté de brun. 53. Jerusalem
 Teste mince, blanc avec bandes brunes;
 Derniers tours de la spire non anguleux. 48. ericetorum, Mull.
 Derniers tours de la spire anguleux,
 striés fortement. 49. rugosiuscula, Mich.

Péristome rosé;

Spire toute marbrée de blanc et de jaune corne. 50. marmorata.

Spire blanche ou à bandes brunes. 51. variabilis, Drap.

Péristome noir, spire brune avec marques blanches.

52. hieroglyphica

Spire avec une ligne blanche.

1125. Emmaus

DEUXIÈME CLÉ DU GENRE HELIX.

13. Gen. HELIX. Hélice, Escargot

Coquille ombiliquée ou perforée;

Coquille discoïde, à spire très aplatie;

Péristome simple, ses extrémités se rapprochant;

Coquille mince, à peine luisante, finement striée.

I. MICROPHYSA

Coquille rugueuse ou striée en côtes.

II. PATULA

Péristome épaissi, réfléchi;

Les bords dentelés ou sinueux;

Ouverture sub-réniforme, irrégulièrement sinuée.

IV. POLYGYRA

Ouverture oblique, rétrécie par ses dents.

V. STENOTREMA

Ouverture triangulaire, irrégulièrement rétrécie.

VI. TRIODOPSIS

Les bords réguliers, sans dents;

Dernier tour de la spire non caréné.

IX. VALLONIA

Dernier tour de la spire caréné.

XVII. AMPELITA

Coquille à spire proéminente, turbinée, conique ou subglobuleuse;

Avec lamelles à l'intérieur.

III. STROBILA

Sans lamelles à l'intérieur;

Péristome simple, mince, ses extrémités se rapprochant;

Epiderme sans côtes, ni poils épineux.

II. PATULA

Epiderme à côtes ou à poils épineux.

VIII. ACANTHINULA

Péristome épaissi, réfléchi ou labié en dedans;

Péristome réfléchi;

Bord columellaire simple ou avec une dent.

VII. MESODON

Bord columellaire sans dent, dilaté, réfléchi.

XI. AGLAIA

Péristome labié en dedans, mais non réfléchi;

Dernier tour de la spire à peine descendant; souvent poilu.

X. FRUTICICOLA

Dernier tour fortement descendant;

Tours supérieurs de la spire carénés.

XIII. EUPARYPHA

Tours de la spire non carénés;

Coquille conique.

XII. ARIONTA

Coquille globuleuse.

XVI. POLYMITA

Coquille imperforée ou à ombilic couvert par un callus;

Ouverture étroite, sinueuse ou denticulée.

V. STENOTREMA

Ouverture lunaire-arrondie;

Péristome fortement réfléchi, coquille sans

bandes colorées.

VII. MESODON

Péristome à peine réfléchi, coquille à bandes colorées.

XIV. TACHEA

Péristome droit, non réfléchi.

XV. POMATIA

Péristome droit, labié en dedans.

XVI. POLYMITA

Sous-gen. I. MICROPHYSA

- Coquille à stries très fines, cependant distinctes;
 Blanche hyaline, ombilic petit. 1. vortex
 De couleur de corne, ombilic grand et très profond. 2.
 Coquille sans stries régulières, polie, lisse, luisante. 3. nitida

Sous-gen. II. PATULA

- Coquille discoïde, à spire peu proéminente;
 Dernier tour non caréné;
 Epiderme non villeux;
 Ombilic en entonnoir, laissant voir les tours de la spire;
 Avec bandes spirales colorisées;
 Sommet de la spire proéminent. 4. solitaria
 Sommet de la spire aplati. 5. ericetorum
 Sans bandes colorisées;
 Stries très distinctes. 6. striatella
 Stries à peine distinctes, très petite. 7. umbilicata
 Ombilic à peine évasé, ne laissant pas voir les tours de la spire;
 Sans bandes colorisées;
 Cornée, polie, lisse. 8. nitens
 Blanche, rugueuse, très petite. 9. pygmaea
 Avec bandes colorisées;
 Sommet de la spire proéminent;
 Stries fortement prononcées, bien distinctes;
 Stries grosses. 10. striata
 Stries très fines. 11. rugosiuscula
 Stries très peu distinctes;
 Bandes colorisées peu nombreuses. 12. variabilis
 Bandes colorisées très nombreuses. 13. neglecta
 Sommet de la spire aplati. 14. arenaria
 Epiderme poilu ou villeux;
 Spire aplatie;
 Spire biconique;
 Couleur blanchâtre. 16. villosa
 Couleur blanchâtre teinté de rose. 17. roseotincta
 Dernier tour de la spire caréné;
 Spire aplatie, dernier tour caréné-tranchant. 18.
 Spire proéminente, dernier tour à carène non tranchante;
 Sans bandes de taches alternes. 19. rotundata
 A bandes de taches alternes brunes et blanchâtres. 20. alternata
 Coquille conique ou pyramidale;
 Coquille conique;
 Ouverture arrondie. 21. accompssa
 Ouverture oblique. 22. pyramidalis
 Coquille allongée, pyramidale;
 Spire élancée, à 10 tours. 23. intersecta
 Spire moins élancée, à 8 tours. 24. acuta

3. Sous-gen. STROBILA
Coquille discoïde, à ouverture étroite, oblique,
péristome réfléchi, avec lamelles à l'intérieur. 25. labyrinthica
4. Sous-gen. POLYGYRA
Spire légèrement proéminente;
Lèvre extérieure avec 2 dents. 26. uvulifera
Lèvre extérieure sans dents. 27. Carpenteriana
Spire entièrement aplatie;
Bord columellaire avec une dent. 25. septemvolva
Bord columellaire sans dent. 29. obvoluta
5. Sous-gen. STENOTREMA
Une dent à la columelle en forme de lamelle;
Dent columellaire aussi longue que l'ouverture;
Spire peu proéminente. 30. hirsuta
Spire plus fortement proéminente. 31. stenotrema
Dent columellaire distincte, plus courte que l'ouverture;
Bien régulière. 32. monodon
Flexueuse. 40. Leai
Une dent à la lèvre extérieure, columelle sans dent. 33. acuta
- Sous-gen. VI. TRIODOPSIS
Epiderme glabre, plus ou moins strié;
Ombilic découvert, plus ou moins grand;
Lamelle columellaire continue avec la lèvre extérieure. 34. palliata
Lamelle columellaire distincte;
Spire plus aplatie. 35. inflecta
Spire plus proéminente. 36. fallax
Ombilic couvert par le callus;
Lèvre extérieure sans dents. 37. appressa
Lèvre extérieure avec 2 dents. 38. tridentata
Epiderme soyeux, 2 dents à la lèvre, columelle simple. 39. holosericea
7. Sous-gen. MESODON
Ombilic découvert, grand;
Péristome circulaire, à peine interrompu. 41. costata
Péristome semi-lunaire, interrompu à la columelle;
Dent à la base de la lèvre petite, distincte. 42. multilineata
Dent à la base de la lèvre allongée, lamellaire. 43. profunda
Point de dent à la base de la columelle. 46. thyroides
Ombilic couvert par le callus;
Une dent à la columelle;
Base du péristome avec une dent plus ou moins distincte. 44. exoleta
Péristome régulier, sans dent à la base. 45. similaris
Columelle nue, sans dent;
Coquille blanc-corné, semi-diaphane;
Plusieurs lignes spirales. 47. Sayi
Concolores, sans lignes colorées;
Lèvre extérieure avec une petite dent à la base. 48. Pennsylvanica

- Lèvre extérieure sans dent;
 Ombilic partiellement recouvert. 49. clausa
 Ombilic entièrement recouvert. 50. Mitchelliana
- Coquille plus ou moins coloriée, opaque;
 Sans lignes ni bandes spirales;
 Bord columellaire calleux. 51. major
 Bord columellaire nu. 52. albolabris
- Avec lignes ou bandes spirales coloriées;
 Bandes coloriées à taches alternes;
 Bord columellaire calleux. 53. spiriplana
 Bord columellaire nu. 54. marmorata
 Bandes coloriées sans taches alternes. 55.
9. Sous-gen. VALLONIA
- Ombilic largement ouvert, péristome continu. 56. pulchella
10. Sous-gen. FRUTICICOLA
- Concolore, sans lignes spirales, de couleur cornée;
 Epiderme glabre. 57. rufescens
 Epiderme soyeux. 58. sericea
- Blanc, le plus souvent avec lignes spirales;
 Ombilic en partie recouvert. 59. griseola
 Ombilic entièrement découvert. 60. candidula
11. Sous-gen. AGLAIA
- Dernier tour de la spire caréné. 61. lapicida
 Dernier tour non caréné. 62. cornea
14. Sous-gen. TACHEA
- Lèvre extérieure formant un large callus à la base;
 Lèvre et callus rouges. 63. hemastoma
 Lèvre et callus brun-foncé.
 Avec bandes spirales. 64. Lucasii
 Sans bandes spirales. 65. orbiculata
 Lèvre et callus blancs. 66. auricosoma
- Lèvre extérieure non dilatée à la base, callus nul ou à peu près;
 Jaune, le plus souvent avec bandes brunes;
 Lèvre blanche extérieurement. 67. hortensis
 Lèvre brune à l'extérieur. 68. nemoralis
- Blanc, ou gris avec lignes blanches;
 Spire aplatie, à peine proéminente;
 Lèvre blanche, légèrement rosée. 69. carthusiana
 Lèvre distinctement rousse. 70. rufilabris
 Spire conique, lèvre blanc rosé. 71. carthusiana
15. Sous-gen. POMATIA
- Coquille opaque, plus ou moins épaisse;
 Coloriée et le plus souvent avec bandes;
 Spire fortement conique;
 Callus brun-roussâtre. 72. pomatia
 Callus blanc;
 Ombilic entièrement caché, épiderme marbré. 73. aspersa
 Ombilic en partie découvert; fond brun-corné, une spirale brune. 74. arbustorum

- Spire aplatie, à peine proéminente;
Fond tout marbré de lignes hiéroglyphiques. 76. hieroglyphica
Fond blanc à lignes spirales brunes. 77. variabilis
Blanc sans aucune tache;
Epiderme opaque. 78. candidissima
Epiderme transparent. 79. cubensis
17. Sous-gen. AMPELITA
Coquille orbiculaire, à ombilic largement ouvert,
péristome anguleux. 80. paludosa
(Fin de la seconde clé du genre Helix.)
17. Gen. ZONITES, Montf. Zonite
Spire perforée;
Spire laissant voir tous les tours en dessous. 1. gularis, Say
Spire perforée, sans laisser voir ses tours en dessous;
Spire jaune-verdâtre, brune au sommet. 2. Algirus,
Spire jaune corne, à sommet uniforme ou blanchâtre; 3. nitida
Teste très mince, transparent.
Teste opaque, assez consistant, taille
plus grande. 4. fuliginosa, Griff.
Spire imperforée, l'ombilic en partie caché
par le callus. 5. friabilis, Binn.
19. Gen. MACROCYCLIS
Opaque, avec bandes spirales brunes. 1. sepulcralis
Presque hyaline, fragile, concolore. 2. concava, Say
20. Gen. HYALINA, Fér. Hyaline
Tours de la spire avec une ligne blanchâtre. 1. lineata, Say
Tours de la spire sans ligne blanchâtre;
Teste à stries en côtes régulières. 2. nitida
Teste simplement strié;
Spire proéminente, ses tours convexes. 3. interna, Say
Spire aplatie, ses tours déprimés. 4. arborea, Say
Teste sans stries ni côtes. 5. decolorata, Dr.
Fam. XXXI. LIMNAEIDAE
Spire dextrale, plus ou moins élevée. I. LIMNAEA
Spire sinistrale, courte;
Coquille ovale. II. PHYSA
Coquille patelliforme. IV. ANCYLUS
Spire aplatie, discoïdale;
Sans partitions en dedans. III. PLANORBIS
Avec partitions à l'intérieur. V. SEGMENTINA
I. Gen. LIMNAEA, Lam. Limnée.
Coquille mince, dernier tour ventru, lèvre étalée;
Spire très aiguë, à tours aplatis: I. LIMNAEA.
Spire moyenne, à tours convexes: II. RADIX
Spire à dernier tour très renflé, très courte,
lèvre étalée en oreille. 16. auricularia

- Coquille solide, lèvre non étalée, dernier tour non ventru;
 Spire conique, aussi longue que l'ouverture. III. LIMNOPHYSA;
 Noir-foncé, columelle blanche. 3. nigrescens, DeKay
 Jaune-corné;
 Spire aigüe, ses tours aplatis;
 Columelle blanche;
 Ouverture étroite, plus large en avant. 4. reflexa, Say
 Ouverture assez large, plus large au milieu;
 Spire treillissée par des petites
 lignes distinctes. 5. umbrosa, Say
 Spire à stries longitudinales seulement. 6. elodes, Say
 Columelle jaunâtre-rosée. 7. palustris, Mull.
 Spire obtuse, ses tours convexes, son extrémité brièvement aigüe;
 Spire avec lignes spirales réticulant sa surface. 8. caperata, Say
 Spire sans lignes spirales;
 Pli à la columelle fortement prononcé. 9. catascopium, Binn.
 Coquille épaisse, très solide;
 Jaune blanchâtre. 10. solida, Lea
 Brun jaunâtre. 12. peregra, Dupuis
 Sutures très fortement prononcées;
 Stries indistinctes. 13. Cubensis
 Stries bien distinctes. 15. modicella
 Sutures médiocrement prononcées; 14. humilis, Say
 2. Gen. PHYSA Drap. Physe
- Coquille mince, transparente;
 Lèvre concolore;
 sutures ordinaires. 1. gyrina, Say
 sutures sillonnées, enfoncées. 11. ampullacea, Gould
 2. aurea, Lea
 Lèvre roussâtre en dedans.
- Coquille solide, non transparente;
 Ouverture grande, bien dilatée;
 Lèvre concolore;
 Sutures fortement impressionnées. 3. ancillaria, Say
 Sutures faiblement impressionnées. 4. elliptica, Lea
 Lèvre coloriée en dedans.
- Ouverture moyenne, com primée;
 Lèvre coloriée et épaissie en dedans;
 Spire conique;
 Dernier tour fortement convexe. 6. acuta,
 Dernier tour peu convexe. 7. rivalis,
 Spire très courte, brièvement acuminée. 8. marginata, Say
 Lèvre mince, concolore;
 Sutures fortement impressionnées. 9. ventricosa
 Sutures peu prononcées. 10. Hildrethiana, Lea
 3. Gen. BULINUS
- Coquille fragile, translucide, jaunâtre-pâle. 1. hypnorum, L.
 Coquille mince mais assez consistante, d'un
 corné pâle (ALEXA). (APLEXA, AL) 2. elatus, Gould.

4. Gen. PLANORBIS, Guettard. Planorbe
Tours de la spire nombreux, visibles des 2 côtés, périphérie
non anguleuse:
- I. PLANORBIS.
- Jaune-blanchâtre, intérieur blanc. 1. lentus, Say
Brun-corne, intérieur concolore, lèvre marginée de blanc. 2. corneus.
- Tours de la spire nombreux, périphérie anguleuse: IV. MENETUS;
Dernier tour plus saillant, fortement sillonné. 3. complanatus, Stud.
Dernier tour égal aux autres;
Six tours, presque égaux. 4. contortus, Mull.
Quatre tours, le dernier plus large. 5. exacutus, Say
- Tours de la spire peu nombreux;
Ouverture campanulée; dessous à peu près plan:
- II. PLANORBELLA, 6. campanulatus, Say.
Ouverture campanulée; coquille ventrue, spire enfoncée
des 2 côtés: III HELISOMA
- Stries régulières, nombreuses. 7. macrostoma, Whit.
Stries peu distinctes, irrégulières;
Les tours de spire carénés en dessus
et en dessous. 8. bicarinatus, Say.
Spire sans carènes;
Ouverture non contractée. 9. trivolvis, Say
Ouverture contractée, en avant de son bord. 10. megastoma
- Ouverture non campanulée;
Spire à 4 tours. 11. dilatata
Trois tours de spire;
Blanchâtre. 12. albus, Mull.
Jaunâtre. 13. parvus, Say
- Fam. XXXII. AURICULIDAE
- Spire sans stries régulières transverses;
Lèvre non dentée en dedans;
Columelle avec 2 plis très forts. 1. AURICULA
Columelle avec une dent. 2. ALEXIA
- Lèvre dentée en dedans;
Dents à la columelle seulement. 3. MELAMPUS
Dents des 2 côtés. 5. POLYDONTA Fischer
4. CARYCHIUM
- Spire striée transversalement.
3. Gen. MELAMPUS, Montfort. Mélampe
- Deux dents à la columelle, taille plus forte. 1. coffea, Lin.
Une dent à la columelle;
Fond brun olive. 2. olivaceus, Carp.
Fond gris bleuâtre. 3. bidentatus, Say
- Fam. XXXIV. CYCLOSTOMIDAE
- Coquille perforée;
Spire conique, assez élevée;
Ouverture simple;
Spire entière. 1. CYCLOSTOMA
Spire tronquée. 2. TUDORA

- Ouverture double. 3. CHOANOPOMA
 Spire fortement déprimée;
 Ouverture non rejetée en haut. 4. CYCLOPHORUS
 Ouverture rejetée en haut. 5. FERUSSACIA
 Coquille non perforée, ombilic plus ou moins couvert;
 Spire allongée, coquille conique ou pupiforme;
 Une carène sur le dernier tour produisant un petit
 canal à la base de l'ouverture. 6. CATAULUS
 Point de carène au dernier tour;
 Allongée, conique. 7. CHONDROPOMA
 Pupiforme, stries en côtes régulières. 12. POMATIAS
 Coquille globuleuse, déprimée, ombilic couvert;
 Péristome simple, entier, non réfléchi. 8. HELICINA
 Péristome simple, réfléchi, étalé. 9. TROCHATELLA
 Péristome anguleux, denté ou fendu;
 Péristome denté à l'intérieur. 10. LUCIDELLA
 Péristome fendu en avant. 11. ALCADIA
 1. Gen. CYCLOSTOMA, Lam. Cyclostome
 Jaune pâle, taché de fauve, strié longitudinalement;
 Péristome largement réfléchi. 1. payanum, Adams
 Péristome à peine réfléchi. 2. elegans, Mull.
 Rose, réticulé de lignes nombreuses. 3. sulcatum, Mull.
 3. Gen. CHOANOPOMA, Pfeiffer
 Tours de la spire denticulés à leur bord supérieur. 1. angustre, Ad.
 Spire déprimée, ses tours convexes, sans dents. 2. Wilhelmi, Op.
 4. Gen. CYCLOPHORUS, Montf. Cyclophore
 Tours de la spire disciformes, carénés sur leurs bords. 1. oculus, Montf.
 Tours de la spire arrondis. 2. Polynema, Pf.
 7. Gen. CHONDROPOMA
 Lignes spirales blanches avec bandes brunes. 1. plicatum, Op.
 Point de lignes spirales blanches. 2. payanum, Arb.
 8. Gen. HELICINA, Lam. Hélicine
 Blanc pur, en cône obtus. 1. turbinata,
 Jaunâtre brun ou blanchâtre; 2. subfusca, Mk.
 Bord de l'ouverture simple. 3. substriata, Gray
 Bord de l'ouverture épaissi, étalé.
 11. Gen. ALCADIA, Gray
 Dent de la base du péristome sillonnée. 1. palliata
 Dent simple, sans sillon. 2. hispida, Ap.
- Fam. XXXIV. ACICULIDAE
 Gen. Acicula
 Fam. XXXV. PLEUROBRANCHIDAE
 Gen. Umbrella, Chemnitz. Umbrella indica, Lam.
 Fam. XXXVI. HYALEIDAE
 Gen. Hyalea, Lam. tridentata, Gmel.
 Fam. XXXVII. TEREBRATULIDAE
 Coquille unie: Gen. TEREBRATULINA d'Orb. caput-serpentis, Lin.
 Coquille striée longitudinalement: Gen. MEGERLIA, King. truncata, King

(Fam. des Cylandrelliides p.)

Gen. CLAUSILIA, Drap.

Ouverture avec 3 dents lamellaires.

1. Braunii Kock

Ouverture avec 2 dents lamellaires;

Ouverture ovale, arquée.

2. ventricosus, D...

Ouverture pyriforme, droite.

3. nigricans, Jeff.

LAMELLIBRANCHES - BIVALVES

FAM. XXXVIII. : OSTREIDAE

Coquille sans côtes longitudinales ni stries concentriques;

Coquille opaque, feuilletée.

1. OSTREA

Coquille semi-diaphane, plus ou moins lisse;

Charnière à 2 dents en forme de V.

2. PLACUNA

Charnière sans dent.

3. ANOMIA

Coquille avec côtes longitudinales ou stries concentriques;

Coquille à charnière allongée, rectiligne, auriculée;

Coquille lisse, à stries concentriques.

4. AMUSIUM

Coquille sans stries concentriques;

Côtes longitudinales non foliacées.

5. PECTEN

Côtes longitudinales foliacées-épineuses.

6. SPONDYLUS

Coquille à charnière courte, non auriculée;

Côtes longitudinales plus ou moins épineuses.

7. LIMA

Côtes longitudinales simplement rugueuses.

8. PLICATULA

1. Gen. OSTREA, L. Huître

Impression musculaire brun-foncé.

1. Virginiana, List.

Impression musculaire jaunâtre.

2. Ctenusyi

3. Gen. ANOMIA L.

Coquille passablement bombée, jaunâtre.

1. ephippium

Coquille très aplatie;

Coquille très mince, blanche en dedans.

2. lampe

Coquille assez épaisse, rose en dedans.

3. cepa

5. Gen. PECTEN. Peigne

Côtes longitudinales réduites à des lignes peu prononcées. 1. tenuicostatus

Côtes longitudinales grosses, fortement prononcées;

Côtes non épineuses;

Valve inférieure concave près de la charnière.

2. maximus

Valve inférieure plus ou moins convexe;

Valve supérieure fortement convexe;

Blanche sans aucune tache.

3. gibbus

A taches brunâtres en séries irrégulières.

4. dislocatus

Valve supérieure peu convexe;

Sillons intercostaux sans lignes longitudinales.

5. irradians

Sillons intercostaux avec lignes longitudinales;

Bandes concentriques d'un roussâtre rosé.

6. subrufus

De couleur uniforme, blanc sale.

7. magellanicus.

- Côtes plus ou moins épineuses;
D'un beau jaune orange. 8. *concentrica*
De couleurs variées; 9. *pallium*
Taches brunes, roses et blanches en séries irrégulières. 10. *opercularis*
Taches roses sur fond blanc. 11. *varius*
Coloration non en taches séparées; 11. *Islandicus*
Sillons intercostaux simples. 1. *regius*
Sillons intercostaux avec lignes soulevées. 2. *gaederoppus*
6. Gen. SPONDYLUS 3.
- Les côtes non foliacées densément épineuses.
Les côtes non foliacées à peine épineuses.
Les côtes toutes à peu près semblables. 7. Gen. LIMA, Lime 1. *hians*
- Valves largement entre ouvertes postérieurement. 2. *squamosa*
Valves closes, à peine entre ouvertes. 8. Gen. PLICATULA. Plicatule 1. *cristata*
Lèvres plus ou moins colorées en dedans. 2. *ramosa*
Lèvres non colorées en dedans. FAM. XXXIX. AVICULIDAE
- Charnière longue, rectiligne, auriculée;
Coquille à épiderme lisse ou à peu près; 1. AVICULA
Valves fortement convexes, longuement auriculées. 2. MELEAGRINA
Valves déprimées, brièvement auriculées; 3. PERNA
Impression postérieure du pied couverte par celle de l'adducteur. 4. MALLEUS
Impression musculaire double. 5. PINNA
Coquille à épiderme feuilleté, charnière auriculée des 2 côtés.
- Charnière courte, courbe, non auriculée. 1. Gen. AVICULA. Avicule
- Valves échancrées postérieurement;
Oreilles postérieures ne dépassant pas les valves. 1. *atlantica*
Oreilles postérieures longuement prolongées au delà des valves. 2. *sterna*
- Valves à peu près droites postérieurement, dépassant à peine les oreilles. 3. *asellus*
4. Gen. MALLEUS. Marteau 1. *albus*
- Oreilles longues, coquille blanchâtre. 2.
Oreilles courtes, coquille noir de corne. 5. Gen. PINNA Lamboneau (appartient aux Mytilloides)
- Valves unies, sans verrues épineuses. 1.
Valves plus ou moins épineuses;
Bord de la charnière droit. 1. *Caroliniensis*
Bord de la charnière sinué en approchant du bec. 3. *muricatus*

FAM. XL. MYTILLIDAE

- Crochets terminaux, forme allongée, valves non carénées. 1. MYTILUS
 Crochets terminaux; valves carénées, aplaties
 en dessous. 4. DREISSENA, Van Ben.
- Crochets non terminaux, forme subtransverse;
 Bords de la charnière lisses. 2. MODIOLA
 Bords de la charnière crénelés, coquille courte, tumide. 3. CRENELLA
 1. Gen. MYTILUS. Moule
- Valves non striées longitudinalement;
 Intérieur blanc, nacré;
 Valves épaisses;
 Coquille noire, fortement oblique. 1. edulis
 Coquille bleuâtre, presque droite, très convexe. 2. Californicus
 Valves minces, d'un corné roussâtre en dessous. 3. galloprovincialis
 Intérieur noir, dessus violet près des crochets. 4. palliopunctatus
- Valves striées longitudinalement. 5. radiatus
 2. Gen. MODIOLA, Modiole
- Valves sans stries longitudinales;
 D'un corné jaunâtre, crochets blancs. 1. tulipa
 D'un violet distinctement prononcé;
 Très convexe, bord supérieur soulevé en bosse. 2. modiolus
 Peu convexe, bord supérieur uniforme, byssus
 très abondant. 3. barbatus

FAM. XLI. ARCADIDAE

- Dents de la charnière en ligne droite;
 Toutes les dents parallèles. 1. ARCA
 Dents du milieu parallèles, celles des extrémités obliques. 2. CUCULLAEA
- Dents de la charnière en ligne courbe. 3. PECTUNCULUS
- Dents en une ligne anguleuse; crochets rapprochés;
 Forme trigonale, bord supérieur arrondi 4. NUCULA
 Forme oblongue, bord supérieur creusé et prolongé postérieurement 5. LEDA
 1. Gen. ARCA, Arche
- Valves parfaitement closes;
 Côtes longitudinales fortement prononcées;
 Facette de la charnière à lignes en trapèze
 bien prononcées. 1. multicostata
- Facette sans lignes bien distinctes;
 Côtes longitudinales tuberculées par les
 stries transverses;
 Coquille équivalve. 2. tuberculata
 Coquille inaequivalve. 3. inaequalvis
- Côtes longitudinales non tuberculeuses;
 Facette très petite, crochets rapprochés. 4. grandis
 Facette grande, crochets distants;
 Coquille équivalve;
 Bord cardinal saillant en angle aux 2 extrémités. 5. ponderosa
 Bord cardinal arrondi aux 2 extrémités. 6. Americana
 Coquille inéquivalve. 7. transversa

- Côtes longitudinales remplacées par des lignes multiples;
 Epiderme très velu. 8. barbata
 Epiderme non velu;
 Epiderme écailleux. 9. squamosa
 Epiderme à peu près lisse. 10. lactea
- Valves plus ou moins ouvertes en dessous: BYSSO-ARCA;
 Bord postérieur arrondi, sans sinus au milieu. 17. Port Saïd.
 Bord postérieur sinué au milieu sans être prolongé en pointe;
 Facette noire, intérieur brunâtre. 11. Noae
 Facette brune, intérieur blanc;
 Lignes transverses fauves irrégulières,
 non continues. 12. Holbingii
 Lignes transversales fauves continues, distinctes;
 Lignes fauves en zigzags. 13. pacifica
 Lignes fauves non en zigzags. 14. zebra
- Bord postérieur prolongé en pointe inférieurement;
 Extrémité antérieure obtuse. 15. umbonata
 Extrémité antérieure pointue. 16. imbricata.
3. Gen. PECTUNCULUS. Pectoncle.
- A teinte fortement violacée;
 Sans côtes longitudinales distinctes. 2. peloronta
 Avec côtes longitudinales distinctes;
 Côtes fortes distantes. 3. pectinatus
 Côtes fines, rapprochées. 4. glycimeris
4. Gen. NUCULA. Nucule.
- Oblongue à bandes rayonnantes obscures. 1. radiata
 Trigone sans bandes rayonnantes. 2. nucleus
5. Gen. LEDA, Leda
- Bord postérieur déprimé et longuement prolongé. 1. parvula
 Bord postérieur droit, à peine prolongé. 2. minuta.
- FAM. XLIII. UNIONIDAE
- Dents à la charnière;
 Dents cardinales et postérieures (latérales). 1. UNIO
 Dents cardinales seulement, les latérales oblitérées. 2. MARGARITANA
- Point de dents à la charnière;
 Coquille close. 3. ANODONTA
 Coquille ouverte en avant. 4. MYCETOPUS
1. Gen. UNIO, Lin. Mulette
- Coquille à côtes rayonnantes;
 Coquille à bords unis;
 Crochets fortement proéminents. 1. plicatus
 Crochets non proéminents. 2. undulatus
- Coquille à bords dentelés postérieurement,
 petite convexe. 3. formosus
- Coquille plus ou moins verruqueuse;
 Un seul rang de verrues sur chaque valve. 4. cornutus
 Verrues éparses ou à plusieurs rangs;

- Intérieur teint de violet;
 Stries concentriques prononcées, verrues
 peu nombreuses. 5. graniferus
- Stries concentriques peu prononcées, verrues
 nombreuses. 6. verrucosus
- Intérieur blanc;
 Coquille très allongée, sinueuse en dessous, à
 verrues très nombreuses. 7. tuberculatus
- Coquille courte, sub-trigonale;
 Verrues nombreuses. 8. pustulatus
- Verrues peu nombreuses;
 Coquille oblique, crochets antérieurs. 9. metanevrus
- Coquille presque droite, crochets médians. 10. lachrymosus
- Coquille sans côtes rayonnantes ni verrues;
 Crochets prolongés en ailes des deux côtés. 11. laevissimus
- Crochets non prolongés en ailes;
 Coquille longue, crochets antérieurs;
 Plus large en arrière qu'en avant;
 Sans rayons verts, très comprimée. 12. compressus
- Avec rayons verts très distincts, peu comprimée;
 Bord supérieur arrondi au delà de la charnière;
 Sans côtes concentriques ombos érodés. 13. radiatus
- Avec côtes concentriques, ombos à $\frac{1}{2}$ épiderme/
 verdâtre. /jaune roussâtre. 18. siliquoidea. 14. luteolus
- Bord supérieur anguleux au delà de la charnière. 14. Lappianus.
- Non ou à peine plus large en arrière qu'en avant;
 Fortement convexe;
 Pointue postérieurement;
 Epiderme vert, crochets verruqueux. 16. pictorum
 requieni, Drap.
- Epiderme brun, crochets à stries sinueuses. 34. littoralis
- Arrondie postérieurement;
 Bord inférieur droit. 17. parvus
- Bord inférieur sinué en dessous /biffé/
 35. nanus 18. luteolus /biffé/
- Peu convexe, comprimée;
 Très allongée, à bord postérieur rétréci;
 Sans cavité au dessous des dents. 19. nasutus
- Avec cavité au dessous des dents. 20. anodontoides
- Médiocrement allongée, à bord postérieur non rétréci;
 Intérieur violet. complanatus
- Les deux dents latérales parallèles,
 plus cylindrique, plus convexe. purpureus
- La dent latérale interne s'écartant de l'autre. 22. gibbosus
- Intérieur blanc. 23. ligamentinus.
- Coquille presque aussi large que longue;
 Sommets très proéminents;
 Sommets à l'égalité du bord antérieur. 24. ebenus

- Sommets un peu en arrière du bord antérieur;
Coquille trigonale à bord inférieur sinué
postérieurement. 25. *trigonus*
- Coquille elliptique, bord inférieur régulier;
Epiderme brun-foncé. 26. *alatus /biffé/*
Epiderme jaunâtre. 27. *ellipsis*
- Sommets peu proéminents;
Coquille fortement ventrue;
Sommets érodés. 25. *ventricosus*
- Sommets avec leur épiderme;
Sommets à stries droites. 29. *occidens*
Sommets à stries sinueuses. 30. *multiradiatus*
- Coquille peu ventrue;
Les sommets et une partie de la coquille érodés. 31. *cariosus*
Les sommets couverts de leur épiderme;
Coquille presque circulaire. 32. *circulus*
Coquille allongée. 33. *Novae-eboraci*
2. Gen. MARGARITANA. Perlière
- Elliptique allongée;
Bord postérieur avec côtes transversales. 1. *rugosa*
Bord postérieur lisse, sans côtes transversales. 2. *marginata*
- Presque aussi large que longue; charnière prolongée en aile. 3. *complanata*
3. Gen. ANODONTA. Anodonte
- Charnière allongée en aile anguleuse postérieurement;
Aile très développée, élevée au dessus des sommets,
comprimée. 1. *Oregonensis*
- Aile médiocre, pas plus haute que les sommets; convexe;
Ovale, presque aussi large que longue. 2. *salmonea*
- Elliptique, beaucoup plus longue que large;
Bord postérieur allongé en pointe rétrécie;
Crochets tuberculeux. 3. *Ferrussaciana*
Crochets à stries ondulées. 4. *imbecilis*
- Bord postérieur plus ou moins arrondi;
Sommets érodés; peu convexe, nacre blanche. 5. *fluviatilis*
très convexe, nacre salmonée. 6. *Footiana*
Sommets conservant leur épiderme. 7. *ovata*
- Charnière arrondie postérieurement ne formant pas un angle;
Sommets conservant leur épiderme;
Sommets lisses. 8. *gracilis*
Sommets fortement ridés. 9. *edentula*
- Sommets érodés;
Comprimée, allongée. 10. *subcylindracea*
Convexe, peu allongée. 11. *Lewisii*
- FAM. XLIV. CHAMIDES
Gen. CHAMA, Lin. Chame
- Equivalve ou à peu près. 1. *arcinella*
Inéquivalve;
Une dent dans chaque valve, intérieur blanc. 2. *sulcata*
Deux dents dans chaque valve; intérieur marginé de jaune. 3. *macrophylla*

FAM. XLV. TRIDACNIDES

Valves avec un sinus byssal en avant.

1. TRIDACNA

Valves closes en avant.

2. HIPPOPUS.

FAM. XLVI. CARDIADÉIDES

Coquille à dents cardinales et latérales sur chaque valve.

1. CARDIUM

Coquille à 2 dents cardinales et 1 latérale dans chaque valve.

2. CARDITA

1. Gen. CARDIUM, Lin. Bucarde

Coquille à côtes radiaires distinctes;

Côtes minces, aiguës, lisses.

1. costatum

Côtes aplaties, rugueuses, verruqueuses ou épineuses;

Côtes épineuses;

Epines recourbées, simples.

2. echinatum

Epines en varices.

3. consors

Côtes simplement rugueuses par les stries transverses;

Troncature postérieure plane.

4. magnum

Troncature postérieure avec les bords de la commissure relevés;

Côtes avec points épineux.

5. penicillatum

Côtes sans points épineux;

Test d'un blanc rosé.

6. bullatum

Test d'un blanc varié de rose et de jaune.

7. citronum

Test d'un blanc sale;

Coquille sub-équilatérale;

Commissure à peine saillante postérieurement.

8. nodosum

Commissure distinctement saillante postérieurement.

9. minimum

Coquille oblongue, à partie postérieure plus longue;

Coquille arrondie postérieurement;

Crochets droits.

10. muricatum

Crochets inclinés en avant.

11. Islandicum

Coquille anguleuse postérieurement.

12. edule

Coquille lisse, à côtes radiaires obsolètes.

13. Norvegicum

2. Gen. CARDITA, Brug. Cardite

Coquille étroite, transverse.

1. Florida

Coquille presque aussi large que longue;

Côtes distantes avec une ligne soulevée dans les sillons.

2.

Sillons sans lignes soulevées;

Sillons profonds, côtes fortes, arrondies.

3. sulcata

Sillons peu profonds;

Bord postérieur allongé en pointe.

4.

Bord postérieur arrondi.

5.

FAM. XLVII. LUCINIDES

Test sillonné, le plus souvent avec lignes radiaires.

1. LUCINA

Test sans sillons distincts;

Ligament caché;

Test blanchâtre sale.

2. CODAKIA

Test rosé.

3. KELLIA

- Ligament apparent;
 Ligament double. 4. FELANIA
 Ligament simple;
 Lunule très petite. 5. LORIPES
 Lunule grande. 6. UMBONIUM
 1. Gen. LUCINA, Brug. Lucine
 Test treillisé par des rayons droits. 1. tigrina
 Test à rayons obliques, denticulé. 2. dentata
 Test sans rayons, sans dents;
 Intérieur orange. 3. chrysostoma
 Intérieur blanc. 4. Pennsylvanica
- FAM. XLVIII. CYCLADIDES
 Test sans sillons concentriques;
 Coquille équilatérale, plus longue que large. 1. CYCLAS
 Coquille équilatérale, bombée, sub-sphérique. 2. SPHAERIUM
 Coquille inéquilatérale, la partie antérieure plus longue. 1. PISIDIUM
 Test à rayons concentriques, fort, à épiderme rude. 4. CYRAENA
 Test à rayons concentriques; dents latérales allongées
 et striées en travers. 5. CORBICULA
 1. Gen. CYCLAS, Brug. Cyclade
 Charnière ailée;
 Bord supérieur droit anguleux aux extrémités. 1. dubia
 Bord supérieur courbe, arrondi aux extrémités. 2. palustris
 Charnière non ailée, courbe. 3. rivicola
 2. Gen. SPHAERIUM, Scop. Sphérie
 Crochets saillants;
 Charnière arrondie non prolongée en ailes;
 Bord antérieur avec une petite lunule. 1. striatinum
 Bord antérieur sans lunule;
 Test avec 2 ou 3 sillons concentriques dans le bas. 2. simile
 Test sans sillons concentriques;
 Exactement équilatérale. 3. aequilaterale
 Côté postérieur un peu plus long. 4. secure
 Charnière légèrement prolongée en aile;
 Distinctement transversale. 5. transversum
 Presque aussi large que longue. 6. partumeium
 Crochets à peine soulevés;
 Valves convexes;
 A stries concentriques;
 Sillons à peine marqués. 7. rhomboideum
 Sillons très distincts. 8. sulcatum
 Sans stries concentriques. 9. altile
 Valves comprimées. 10. fabale
 3. Gen. PISIDIUM Pfr. Pisidie
 Orbiculaire. 1. abditum
 Plus haut que long. 2. compressum
 Plus long que haut. 3. Virginicum

4. Gen. CYRENA, Lam. Cyrène

Sans sillons radiaires;

Sub-orbiculaire.

La moitié postérieure allongée et rétrécie.

A sillons radiaires.

1. Mexicana
2. Floridana
3. orientale

FAM. XLIX. CYPRINIDES

Crochets droits ou courbes, mais non spirales;

Forme sub-orbiculaire;

Ligament externe, apparent;

Trois dents cardinales.

Deux dents cardinales.

Ligament interne.

Forme triangulaire.

Crochets en spirales.

1. Gen. CIRCE, Schum. Circé

Renflée, sillons concentriques peu prononcés.

Légèrement comprimés; sillons bien prononcés.

2. Gen. ASTARTE, Sowerb. Astarté

Sillons concentriques fortement prononcés;

Lunule distincte;

Sillons séparés par les côtes arrondies;

Sillons sur toute la surface.

Sillons effacés inférieurement.

Sillons peu profonds ne formant pas de côtes arrondies.

Lunule indistincte.

Sillons concentriques 0 ou à peine distinctes;

Epiderme lisse, épais, persistant.

Epiderme fugace; test marqué de stries obliques.

3. Gen. LIOCARDIUM, Conr. Liocarde

Valves à 3 ou 4 lignes de croissance enfoncées.

Valves lisses, à stries à peine distinctes.

1. CIRCE
2. ASTARTE
3. LIOCARDIUM
4. GOULDIA
5. ISOCARDIA

1. gibbus
2. pectinata

1. sulcata
2. elliptica
3. Banksii
4. undata

5. castanea
6. lactea

1. serratum
2. substriatum

FAM. L. VENERIDES

Lèvre finement crénelées;

Trois dents dans chaque valve;

Sinus palléal petit peu profond; ligament proéminent.

Sinus palléal profond, anguleux;

Lunule profonde.

Lunule 0.

Quatre dents dans chaque valve.

Lèvres unies, lisses;

Sinus palléal anguleux;

Arrondie postérieurement.

Anguleux postérieurement avec épines ou pointes.

Sinus palléal arrondi;

Crochets sub-médians;

Sinus profond, ascendant.

Sinus oblique, peu ascendant.

1. VENUS

2. ARTEMIS

3. CYCLINA

4. VASUM

5. CYTHEREA

6. DIONE

7. DOSINIA

8. PACHYDESM

- Crochets antérieurs;
 Sans lamelles concentriques. 9. TAPES
 Avec lamelles concentriques. 10. VENERUPIS
 1. Gen. VENUS, Lin. Vénus
- Test à côtes ou lignes radiaires;
 Rayons traversés par des lignes concentriques lamelleuses;
 Lamelles grandes, en dents régulières. 1. gnidia
 Lamelles en cordons crénelés;
 Bord postérieur anguleux;
 Troncature postérieure courbe. 2. purpera
 Troncature postérieure droite. 14. Chione amathusia
 Bord postérieur arrondi;
 Lignes concentriques, continues, saillantes;
 Troncature arrondie. 3. cancellata
 Troncature anguleuse. 15. simillima
 Lignes concentriques interrompues dans les sillons. 4. columbiensis
- Rayons sans autres lignes que celles de croissance;
 Rayons très peu prononcés, effacés supérieurement. 5. mercenaria
- Test sans côtes ni lignes radiaires;
 Test à lignes concentriques verruqueuses. 7. verrucosa
- Lignes concentriques non verruqueuses;
 Epiderme dépoli, plus ou moins rugueux. 8. Mortoni
 Epiderme poli, lisse;
 Sillons concentriques formant des cordons arrondis. ANOMALOCARDIA
 Sillons profonds, cordons larges et très saillants. 9. paphia
 Sillons peu profonds;
 La côte du bord postérieur précédée d'un sillon;
 Valves striées dans la partie supérieure. 10. subrugosa
 Valves sans stries; côte postérieure dentelée. 11. dentifera
 Bord postérieur sans sillon;
 Crochets courbés en avant. 12. gallina
 Crochets à peu près droits. 13. luctuosa
 2. Gen. ARTEMIS, Poli. Artémis
 6. Gen. DIONE. Dione
- Angles de la troncature avec longues épines. 1. lupinaria
 Angles de la troncature avec petits tubercules. 2. rosea
 7. Gen. DOSINIA, Gray. Dosinie
- Sans stries concentriques. 1. discus
- A stries concentriques;
 Stries fortes, très distinctes. 2. concentrica
 Stries très fines. 3. Dunkeri
 10. Gen. TAPES, Mühlf. Tapes
- A stries radiaires;
 Stries multiples et rapprochées;
 Stries radiaires simples;
 Stries régulièrement alternant avec les sillons. 1. staminea
 Stries inégales, les unes plus fines, les autres plus grosses. 2. decussata

- Stries treillissées par des lignes concentriques;
 Sub orbiculaire. 3. histrionica
 Allongée postérieurement. 1001
- Sans stries radiaires;
 Convexe à peine transverse. 5. pullastra
 Comprimée, fortement transverse;
 Test jaunâtre pointillé de brun;
 Charnière prolongée en aile anguleuse. 6. sulcaria
 Charnière arrondie postérieurement. 7. litterata
 Test blanchâtre avec lignes brunes;
 Lignes brunes en zigzags. 8.
 Lignes brunes simplement ondulées. 9. geographica
- FAM. LI MACTRIDES
 Gen. MACTRA, Lin. Mactre
- Lunule distincte, ligament extérieur;
 Troncature postérieure sans carènes. 1. solidissima
 Troncature postérieure bordée d'une carène. 5. stultorum
- Lunule indistincte, ligament renfermé;
 Tronquée postérieurement;
 Comprimée;
 Sans bandes radiaires; 3. rancutta
 Avec bandes radiaires blanchâtres. 4. similis
 Convexe. 5. stultorum
 6. lactuca
 7. polynema
- Arrondie postérieurement; à bandes radiaires brunâtres.
- FAM. LII. TELLINIDES
- Coquille comprimée, transverse;
 Arrondie en avant et anguleuse en arrière;
 Sommet sub-médian;
 Valves non striées obliquement;
 Bord supérieur sans dentelures;
 Dents latérales 1-1. 1. TELLINA
 Dents latérales 0. 2. MACOMA
 Bord supérieur tout garni de dentelures. 3. TELLINIDORA
 Valves portant des stries obliques. 4. STRIGILLA
 Sommet en avant du milieu. 5. CALLISTA
 Sommet en arrière du milieu;
 Coquille mince, très fragile. 6. ANGULUS
 Coquille consistante, assez épaisse. 7. DONAX
- Arrondie en avant et en arrière;
 Comprimée, épiderme corné, persistant;
 Ligament porté sur un support proéminent. 8. SANGUINOLARIA
 Ligament ordinaire, proéminent, sans support spécial. 9. PSAMMOBIA
 Convexe;
 Avec sillons rayonnants. 10. CAPSA
 Avec sillons rayonnants, lisse. 11. IPHIGENIA

1. Gen. TELLINA, Lin. Telline
- A stries concentriques;
- Valve droite sans pli en arriere. 1. anternata
- Valve gauche avec un pli en forme de carène en avant. 2. interrupta
- Sans stries concentriques bien distinctes;
- Test lavé de rose;
- Rose en bandes rayonnantes. 3. radiata
- Rose en bandes concentriques. 4. carnaria
- Test plus ou moins orange;
- Intérieur orange, pli postérieur très prononcé. 5. incarnata
- Intérieur rose, pli postérieur peu distinct. 6. magna
- Test blanc ou blanc jaunâtre;
- Pli postérieur en carène très distincte. 7. planata
- Pli 0, ou à peine distinct;
- Bord postérieur allongé et rétréci;
- A bandes jaunâtres concentriques;
- Plus étroites stries plus prononcées. 8. nitida
- Plus large, stries indistinctes. 1024. explanata
- D'un blanc jaunâtre à peu près uniforme. 9. lateralis
- Bord postérieur arrondi;
- Test épais;
- Non poli. 10. Groenlandica
- Poli, charnière postérieure. 1026. cumana
- Test poli, mince, sub-hyalin. 11. exilis
2. Gen. MACOMA, Brod. Macome
- Bord postérieur allongé en pointe. 1. nasuta
- Bord postérieur arrondi. 2. Tampanensis
5. Gen. CALLISTA, Calliste
- A bandes brunes rayonnantes. 1. gigantea
- A taches brunes détachées. 2. maculata
7. Gen. DONAX, Lin. Donace
- Cylindrique, test mince, fragile. 1. anatina
- Plus ou moins en coin, test consistant;
- Sans stries rayonnantes;
- Sommets concolores. 3.
- Sommets violets. 2. politus
- A stries rayonnantes plus ou moins prononcées;
- Convexe, peu allongé;
- Test à bandes concentriques bleuâtres. 4. dentifera
- Test blanchâtre ou à bandes jaunâtres. 5. punctatostriata
- Comprimé, distinctement transverse;
- Troncature postérieure déprimée, enfoncée. 6. navicula
- Troncature non enfoncée;
- Passablement convexe, bord postérieur très court. 7. variabilis
- Comprimé, bord postérieur assez long. 8. Conradi
8. Gen. SANGUINOLARIA.
- Intérieur violet. 1.
- Intérieur à peine lavé de rose. 2.

9. Gen. PSAMMOBIA, Lam. Psammobie
 Médiocrement comprimée, variée de rose et de blanc. 1. vespertina
 Très comprimée, blanchâtre, sans taches. 2. feiroensis

FAM. LIII. SOLENIDES.

- Charnière terminale. 1. SOLEN
 Charnière en avant du milieu mais non terminale;
 Sans pli ombonal bien marqué à l'intérieur. 2. CERATISOLEN
 Pli ombonal s'étendant à l'intérieur à travers chaque valve. 3. MACHAERA
 1. Gen. SOLEN, Lin. Rasoir
 Raie oblique des valves concolore. 1. ensis
 Raie oblique des valves à taches transverses violettes. 2. siliqua
 3. vagina
 3. Gen. MACHAERA, Gould. Machère
 Sommets blanchâtres. 1. costata
 Une tache triangulaire brune à chaque sommet. 2. patula

FAM. LIV. MYACIDES

- Valves baillantes à chaque extrémité; comprimé, oblongue;
 Valve gauche avec une grande dent en palette. 1. MYA
 Valves sans dents très développées. 2. GLYCIMERIS
 Valves closes, de forme orbiculaire, convexe. 3. CORBULA
 3. Gen. CORBULA, Brug. Corbeille
 Coquille subéquivalve, plus longue postérieurement. 1. nasuta
 Coquille fortement inéquivalve;
 Valve droite à côte en forme de carène postérieurement;
 Bord postérieur à peine plus long. 2. nucleus
 Bord postérieur distinctement plus long. 3. Mediterraneus
 Valve droite sans côte carénale en arrière. 4. inaequalvis

FAM. LV. ANATINIDES

- Sinus palléal peu profond. 1. THRACIA
 Sinus palléal profond. 3. COCHLODESMA
 Ligne palléale simplement sinuée, valve gauche convexe,
 la droite aplatie avec 2 sillons divergents. 2. PANDORA

FAM. LVI. GASTROCHENIDES

- Valves libres; ligne palléale sinuée, non continue. 1. SAXICAVA
 Valves soudées à un tube écaillé, petites. 2. ASPERGILLUM

FAM. LVII. PHOLADIDES

- Gen. PHOLAS, Lin. Pholade
 Bord dorsal uni. 1. ptidactylus
 Bord dorsal anguleux. 2. anatifera

CIRRHIPÈDES

- Gen. ANATIFA. Anatife
 Valves à bords dentelés. 1. dentifera
 Valves non dentelées, striées. 2. striata
 Valves lisses, ni dentelées, ni striées. 3. laevis

LOCALITY RECORDS FOR OKLAHOMA MOLLUSCA

BRANLEY A. BRANSON

Eastern Kentucky University, Richmond, Kentucky 49675

Preparatory to starting a manuscript on the Zonitidae of Oklahoma, I have carefully sorted through my collections in order to glean additional distribution records for numbers of this family. In so doing, I discovered unpublished locality data for 74 molluscan species, including representatives of 19 families and 35 genera. The following are sites from which mollusks were secured, and in the text specimens are referred to these stations by numeral.

COLLECTING SITES

1. July 14, 1961. Mud flat, Big Grassy Lake, near Tom, McCurtain Co., Okla.
2. June 3, 1961. Blue River at Connaville, Johnston Co., Okla.
3. April 26, 1953. Two mi. N. of Talequah, Cherokee Co., Okla.
4. No date. Little River crossing U.S. highway 71, south of Broken Bow, McCurtain Co., Okla.
5. August 29, 1963. Spring River crossing State Highway 10, 5 mi. E. Miami, Ottawa Co., Okla.
6. No date. Hillside near Ft. Gibson Reservoir dam, Cherokee Co., Okla.
7. August 20, 1963. Kiamichi Mountains, 0.9 mi. N. Honobia, Pushmataha Co., Okla.
8. August 23, 1963. Limestone hillside, 1¼ mi. N. Watts, Adair Co., Okla.
9. August 24, 1963. Tenkiller Dam, Sequoyah Co., Okla.
10. June 13, 1963. Banks of Lost Creek, 2 mi. E. Wyandotte, Ottawa Co., Okla.
11. August 20, 1963. Pipe Springs, west end of Rich Mountain, LeFlore Co., Okla.
12. August 20, 1963. West end of Rich Mountain, 1.7 mi. S. Page, LeFlore Co., Okla.
13. August 21, 1963. Jackfork Mountain (lowlands), 26.6 mi. S. Hartshorne, Pittsburgh Co., Okla.
14. May 9, 1963. Low hills near west end of dam, Ft. Gibson Reservoir, Wagoner Co., Okla.
15. August 21, 1963. Hills at Lake Talihina, near dam, 2 mi. W. Talihina, Latimer Co., Okla.
16. August 27, 1963. Osage Hills State Park, bluffs of Sand Creek, Osage Co., Okla.
17. August 24, 1963. Western end of Tenkiller Dam, Sequoyah Co., Okla.
18. August 20, 1963. Round Mountain, 9.5 mi. N.W. of Walnut Tower, LeFlore Co., Okla.
19. April 16, 1963. Flint Creek, 2 mi. E. Westville, Adair Co., Okla.
20. August 20, 1963. Walnut Mountain, 5.9 mi. N.W. of Walnut Tower, LeFlore Co., Okla.
21. August 19, 1963. Walker Mountain, 2.8 mi. S. and 11.1 mi. E. of Page, LeFlore Co., Okla.
22. August 19, 1963. Base of Poteau Mountain, 4 mi. S.E. of Monroe, LeFlore Co., Okla.
23. August 21, 1963. Kiamichi Mountain, 0.2 mi. W. Kiamichi tower, LeFlore Co., Okla.
24. August 22, 1963. Blue Mountain, 0.5 mi. E. on Holson Valley Road from junction with Highway 271, LeFlore Co., Okla.
25. June 4, 1963. Shaded bluffs, 7.4 mi. E. of highways 259 and 59 junction, Adair Co., Okla.
26. August 23, 1963. Crow's Nest, 11 mi. N.W. Walnut tower, LeFlore Co., Okla.
27. August 23, 1963. Brush Mountain, 5 mi. E. of Stillwell, Adair Co., Okla.
28. August 26, 1963. Disney Dam, Mayes Co., Okla.
29. August 27, 1963. Bluffs of Rock Creek, 2 mi. S. Eufaula, Mac Intosh Co., Okla.
30. August 29, 1963. Burned over hillside, 3 mi. W. Bernice, Ottawa Co., Okla.
31. August 21, 1963. Potatoe Hills, 5 mi. W. Talihina, Latimer Co., Okla.
32. August 29, 1963. Bluffs of Neosho River, Langley, Mayes Co., Okla.
33. August 25, 1963. Shaded hillsides, 5.5 mi. E. Salina, Mayes Co., Okla.

34. August 22, 1963. Billy Creek area, 0.5 mi. E. Muse, LeFlore Co., Okla.
35. August 16, 1963. Valley, 1.3 mi. E. Flint, Delaware Co., Okla.
36. August 20, 1963. North side of Rich Mountain, 5.6 mi. E. Page, LeFlore Co., Okla.
37. May 16, 1963 Bluffs of Lost Creek, 15 mi. S.E. Miami, Ottawa Co., Okla.
38. September 21, 1963. Lowlands, 2 mi. E. Wyandotte, Ottawa Co., Okla.
39. August 19, 1965. Robber's' Cave State Park (lowlands), 5 mi. N. Wilburton, Latimer Co., Okla.
40. August 28, 1963. Hillside, 0.8 mile N. Childers, Nowata Co., Okla.
41. August 23, 1963. Cavanal Mountain, 2 mi. W. of Poteau LeFlore Co., Okla.
42. August 23, 1963. San Bois Mountain, 6.1 mi. N.W. Wilburton, LeFlore Co., Okla.
43. July 27, 1963. Bluffs Limestone Creek, 19 mi. N. Atoka, Atoka Co., Okla.
44. August 26, 1963. Bluffs of Spavinaw Creek, Spavinaw, Mayes Co., Okla.
45. September 21, 1963. Banks Elk River, 2 mi. E. and 0.1 mi. N. Turkey Ford, Delaware Co., Okla.
46. August 21, 1963. Buffalo Mountain, 0.6 mi. N., 2 mi. S. of Talihina, Latimer Co., Okla.
47. June 4, 1963. Lowlands, 7.4 mi. E. junction of highways 259 and 59, LeFlore
48. August 24, 1963. Shaded talus, east border of Ten Killer State Park, Sequoyah Co., Okla.
49. August 28, 1963. Bluffs of Verdigris River, 4 mi. E. Nowata, Nowata Co., Okla.
50. August 27, 1963. Sandstone bluffs on Sand Creek, Osage Hills State Park, Osage Co., Okla.
51. June 17, 1960. Banks of Canadian River, 4 mi. N.E. Thomas, Custer Co., Okla.
52. October 13, 1963. Bluffs of Arkansas River, 0.5 mi. E. Keystone Dam, Tulsa Co., Okla.
53. August 22, 1963. Indian Trail, 0.9 mi. N. Honobia, Pushmataha Co., Okla.
54. September 12, 1963. Campus pool, Northeastern State College, Talequah, Cherokee Co., Okla.
55. April 23, 1963. Elk River, near mouth, Delaware Co., Okla.
56. August 18, 1963. Forest floor, 0.5 mi. W. junction Highway 259, and Winding Stair Mountain Road, LeFlore Co., Okla.
57. August 28, 1963. 'Goody's Bluff,' 4 mi. E. Nowata, Nowata Co., Okla.
58. May 31, 1959. Elk City, Beckham Co., Okla.

59. August 24, 1963. Lowlands, 1 mi. E. Baron, Adair Co., Okla.
60. August 18, 1963. Haw Creek, 5 mi. W. Page, LeFlore Co., Okla.
61. December 29, 1963. Low Hillock, S. 33, R 20 W, T 5 N North fork Red River, Greer Co., Okla.
62. February 29, 1964. Banks of Charley Creek, 0.5 mi. N. W. Burbank, Osage Co., Okla.

ANNOTATIONS

Under 'collections,' the figures outside the parentheses are the number of specimens collected; those inside are station numbers.

Polygyra leporina (Gould)

Collections: 1(5), 1(10), 3(13), 4(29).
These 6 shells averaged: 6.3 mm in diameter (6.0-7.0), 3.8 mm in height (3.0-5.5), and possessed 4 1/3 to 3 3/4 whorls.

Polygyra texasiana (Moricand)

Collections: 1(29), 3(51), 9(62).
The specimen from station 29 has a reddish submarginal band on the body whorl. The base is entirely smooth, and sculpturing is nearly lacking above on the first 4 whorls and is only slightly developed on the last 1 1/2, being best developed immediately behind the reflected lip. This specimen is (disregarding the band) very similar to some topotypes of the putative species *P. tamaulipasensis* Lea, considered a full species by Hubricht (1961) and as merely a variant by Branson (1962).

The specimens from the other localities also possess the red band, but, although the base is more or less smooth, the striations are rather coarse above. Collectively, the shells averaged 9.1 mm in diameter (8.0-10.0), 4.2 mm in height (3.5-5.0), and possessed 3 4/5 to 5 3/4 whorls.

Polygyra jacksoni (Bland)

Collections: 20(27).
In all specimens, the callus was adnate rather than being raised, and the umbilicus was quite small, approximately 4.5 times in the shell diameter. Diameter 8.4 mm (7.5-9.0); height 5.4 mm (4.0-5.0); whorls 5 1/4-6.

Polygyra deltoidea (Simpson)

Collections: 1(14).
The specimen, possessing 5 7/8 whorls

and measuring 9.6 mm in diameter and 4.5 mm in height, is imperforate and the parietal lip is elevated.

Polygyra dorfeuilleana (Lea)

Collections: 1(19), 1(31), 6(42) 3 (56).

The regional variations of this species were recently analyzed by Branson (1970).

Stenotrema labresum (Bland)

Collections: 20(8), 48(9), 10(13), 4(14), 2(19), 6(22), 5(23), 11(33), 10(37), 5(38), 50(44).

In eastern Oklahoma, *S. labresum* is second in abundance only to the next species, as far as stenotremes are concerned. Diameter 10.9 mm (10.0-12.0); height 6.1 mm (5.0-7.0); whorls 5-5½.

Stenotrema stenotrema (Pfeiffer)

Collections: 13(32), 1(45)

Stenotrema leai Ward

Collections: 4(22), 1(40)

The specimens from station 22 bore numerous short periostracal hairs.

Stenotrema fraternum (Say)

Collections: 3(18), 5(20), 2(23), 9 (25), 5(26), 1(34), 5(36), 1(42), 27(56).

Other than having the parietal tooth somewhat arched and an impressed base, all specimens resemble *S. fraternum imperforatum* (Pilsbry, 1940) closely. Diameter 9.9 mm (8.0-11.0); height 6.8 mm (5.6-8.0); whorls 5½ - 6 2/3.

Mesodon thyroidus (Say)

Collections: 1(2), 2(5), 6(8), 2(10), 1(16), 17(21), 1(22), 1(29), 15(32), 5(38), 3(41), 7(45), 2(52).

Widespread in Oklahoma, shells from the eastern part of the state average slightly larger than ones from the flatlands. Approximately 15 per cent of the shells from these regions have the umbilicus about one-third closed. The following were measured in specimens with fully produced lips: Diameter 21.5 mm (18.0-25.5); height 13.9 mm (11.0-16.5); whorls 5 - 5 2/3.

Mesodon clausus (Say)

Collections: 20(8), 2(9), 1(10), 5 (38).

A fairly common species in wooded ravines. Diameter 16.2 mm (14.5 - 18.5); height 11.4 mm (10.6-12.5); whorls 4 1/5-5½.

Mesodon zaletus (Binney)

Collections: 5(9), 1(11), 2(12), 2(20), 5(25), 2(32), 11(33), 1(35), 6(36), 5(37), 3(38), 9(56).

In Oklahoma, as elsewhere, *M. zaletus* is often confused with *Triodopsis albolarbris* when only shells are available. However, the living animal is easily distinguished from the last-named species by the intensely melanistic mantle pattern. In the two specimens from station 19, shell spiral sculpturing was very distinct, particularly on the base, and the 5 shells from station 25 all possess small parietal teeth. Diameter 24.8 mm (22.5-32.0); height 16.4 mm (12.5-20.5); whorls 5-6½.

Mesodon elevatus (Say)

Collections: 2(6), 2(37), 4(10), 1(22), 13(32), 3(44).

All of these imperforate shells are of heavy construction, and the triangular parietal tooth is also heavy. The low lamina along the basal lip is well-developed as is the spiral, incised sculpture. Diameter 22.1 mm (21.0 - 23.0); height 15.6 mm (14.5-17.0); whorls 5½-6½.

Mesodon indianorum (Pilsbry)

Collections: 6(13), 4(16), 19(29), 19 (31), 2(32), 88(39), 3(42), 17(43), 6(52).

The spire varies from depressed to slightly everted, but the periphery is uniformly angular and the lip is expanded throughout. The sculpture has a silky appearance, and the umbilicus varies from barely open to completely closed. (See discussion under *M. binneyanus*). Diameter 19.2 mm (16.2 - 23.5); height 9.9 mm (8.0-12.1); whorls 4½-5½.

Mesodon binneyanus

Collections: 14(12), 6(15), 4(21), 12 (22), 2(23), 19(24), 1(25), 1(31), 1(34), 2(46), 18(56).

In most of the above-listed specimens, the lip is reflected to its lower and upper insertions upon the body whorl, and the umbilicus varies from nearly completely open to about two-thirds open. In the past, I (1962) have considered *M. binneyanus* as merely an upland ecophenotype of *M. indianorum*, and I am still not convinced that this is untrue. However, the shells are separable in most places, even though the two putative forms are seldom found together. Diameter 23.3 mm (17.5-26.5); height 13.2 mm (9.0-16.3); whorls 4 2/3 - 6½.

W. Talihina, Latimer Co., Okla.
22 August 29, 1963. Bluff of Neosho
River, Langley, Mayes Co., Okla.
22 August 25, 1963. Sided hillsides,
5 mi. E. Salina, Mayes Co., Okla.

Mesodon kicwaensis (Simpson)

Collections: 12(21).

Mesodon kicwaensis is primarily a pine-woods species, preferring the dry hill tops to slopes. The small umbilicus is round and open; the upper lip is scarcely expanded, and the lower portion though expanded is but little reflected. Although the transverse growth striae are rather distinct, the spiral sculpturing is faint. Diameter 15.8 mm (15.2-16.0); height 9.0 mm (8.5-9.8); whorls 5 $\frac{1}{2}$ -5 $\frac{2}{3}$.

Mesodon inflectus (Say)

Collections: 1(5), 3(6), 3(7), 89(8), 39(9), 81(10), 4(12), 29(13), 21(14), 2(17), 4(18), 5(19), 7(20), 95(22), 19(23), 21(24), 22(25), 2(26), 2(27), 2(28), 51(30), 82(32), 88(33), 9(34), 45(35), 9(36), 33(37), 14(38), 89(41), 1(42), 26(43), 67(44), 6(45), 4(47), 5(56).

Mesodon inflectus is a variable species in Oklahoma, as elsewhere. In the samples reported here, the parietal tooth varies (in shells with fully formed lips and armature) from thin and short (failing to reach the level of the upper lip tooth) to rather heavy and long. The umbilicus varies from nearly wide open to completely closed. Also, when long series of shells are viewed, almost continuous variation is observed from the putative form *M. inflectus edentata* Sampson to typical *M. inflectus* (Branson, 1970). Archer (1933) considered these edentate forms as variants merely, and Branson (1962) has elsewhere indicated that such shells are immature ones. In the present series, edentate shells occur at a frequency of 4 percent. Diameter 10.7 mm (7.0-12.8); height 5.7 mm (4.5-7.0); whorls: 4 $\frac{1}{2}$ -5 $\frac{3}{4}$.

Triodopsis cagani Call

Collections: 13(16).

In these specimens, which came from a locality near the western limits of the species' range, the sculpture is somewhat coarser than seen in more easterly populations. Diameter 9.0 (all specimens); height 4.9 mm (4.8-5.0); whorls 4 $\frac{1}{2}$ -5.

Triodopsis albolabris (Say)

Collections: 3(6), 4(10), 3(14), 1(18), 6(22), 2(23), 3(25), 1(26), 28(30), 5(32), 7(35), 5(37).

Diameter 28.0 mm (23.0-32.0); height 16.6 mm (14.0-23.5); whorls 5 $\frac{1}{4}$ -5 $\frac{1}{2}$.

Triodopsis divesta (Gould)

Collections: 1(32), 3(35), 26(44).

Diameter: 19.6 mm (17.5-23.0); height 10.8 mm (8.7-17.0); whorls 4 $\frac{1}{2}$ -5 $\frac{1}{2}$.

Triodopsis lioderma (Pilsbry)

Collections: 1 live (57).

Because of an inability to distinguish between *Mesodon undatum* and *M. lioderma*,

conchologically, Branson (1962) concluded the latter form to be untenable as a named race. However, Hubricht (1967) dissected living specimens and discovered that *lioderma* is not a *Mesodon* at all, but a *Triodopsis* most closely related to *T. divesta*. Since neither Pilsbry (1940) nor Hubricht (1967) discussed the soft anatomy, the following features should be of interest.

The mantle color pattern consists of a longitudinal series of black dashes on the right with some grayish-brown blotches above. The left side is reticulated by grayish-brown, and on the midline there is a black line connected to the reticulum by thinner lines.

Diameter, 18.0 mm; height 8.5 mm; whorls 4 $\frac{1}{2}$.

Bulimulus dealbatus (Say)

Collections: 2(22), 2(27), 11(29), 17(43).

Shells from the southern part of the state are slightly more obese and grayer than ones from the north. Measurements for southern shells: height 17.0 mm (14.0-20.2); diameter, 13.3 mm (11.5-15.1); length of aperture 9.7 mm (8.5-11.4); whorls 5 $\frac{2}{3}$ -6 $\frac{1}{2}$. Measurements of northern shells: height 20.1 mm (18.5-21.0); diameter 14.6 mm (13.0-15.3); length of aperture, 10.3 mm (9.3-11.0); whorls 6 $\frac{1}{2}$ -6 $\frac{3}{4}$.

Haplotrema concavum (Say)

Collections: 11(32).

Since this locality lies at the western limits of distribution for the species, the following measurements may be of interest.

Diameter	Height	Whorls
11.7 mm	6.4	4 1/3
15.5	6.5	4 7/8
15.7	8.2	5 1/5
15.7	8.0	4 7/8
17.0	7.8	5 1/5
18.1	8.0	5 1/3

Euconulus chersinus (Say)

Collections: 3(62).

Retinella indentata (Say)

Collections: 1(8).

The shell (live) is 5.0 mm in diameter and possesses 6 $\frac{1}{2}$ whorls. The animal is very pale gray, almost white.

Hawaxia minuscula (Binney)

Collections: 5(61), 1(62).

Ventridens ligera (Say)

Collections: 5(61), 1(62).

The umbilicus is completely closed. The shell is sharply striate above, and spiral sculpture is well-developed on the base. Diameter 10.0-11.3 mm; height 6.5-7.0 mm; whorls 6 $\frac{1}{5}$ -6 $\frac{1}{2}$.

- Zonitoides arboreus* (Say)
Collections: 3(62).
- Limax flavus* Linnaeus
Collections: 1(19).
Total length 72.5 mm (extended); width of sole 8.0 mm.
- Anguispira alternata* (Say)
Collections: 3(12) 1(13) 8(16) 2(26) 22(52) 3(56) 5(62).
The specimens from stations 12, 13, 26, and 56, are very similar to those described by Walker as *A. alternata crassa*. The shell is very depressed and the riblets are few in number and quite strongly developed. The base has only a single row of widely spaced color dashes along the periphery, and the upper surface possesses relatively few blotches. The periphery is almost carinate.
- Helicodiscus parallelus* (Say)
Collections: 7(51) 6(52) 6(62).
- Helicodiscus notius* Hubricht
Collections: 11(16).
- Helicodiscus nummus* (Vanatta)
Collections: 1(51).
- Helicodiscus tridens* (Morrison)
Collections: 1(61).
- Pallifera marmorea* Pilsbry
Collections: 1(8).
- Pallifera ragsdalei* Webb
Collections: 5(19).
In life, the edge of the foot was rusty colored, but quickly faded to gray in alcohol.
- Succinea luteola* Gould
Collections: 1(62).
- Succinea concordialis* Gould
Collections: 3(16).
- Succinea pseudavara* Webb
Collections: 1(48).
Height 7.5 mm; greatest diameter 6.5 mm; length of spire 3.1 mm; 2½ whorls.
- Succinea vaginacontorta* Lee
Collections: 1(28), 12(29).
- Catinella vermeta* (Say)
Collections: 2(8), 1(19), 1(31), 1(33), 1(43), 1(45), 10(49).
- Catinella vagans* (Pilsbry)
Collections: 1(16).
- Strobilops labyrinthica* (Say)
Collections: 1(14) 2(16), 2(30), 4(37), 6(40), 3(50).
The riblets vary from coarse to fine, and the basal ones from nearly lacking to well-developed. Diameter 2.3 mm (2.0-2.6); height 1.7 mm (1.3-2.2); whorls 5¼-6½.

- Strobilops aenea* Pilsbry
Collections: 1(8), 1(10), 1(16), 3(23).
This is not a common species in Oklahoma, particularly beyond the eastern tier of counties. It appears to be most abundant in the southeastern portion of the state. In the specimens reported here, the base is nearly smooth, and the internal lamellae are equal in length to nearly so. Diameter 2.3 mm (2.0-2.5); height 1.5 mm (0.9-2.0); whorls 4 2/3 - 6½.
- Gastrocopta armifera* (Say)
Collections: 9(8) 17(13) 13(16), 3(23) 1(31) 43(40) 2(44) 28(49) 5(50) 1(52) 1(62).
Diameter 2.3 mm (1.7-2.7); height 4.2 mm (3.0-5.0); whorls 6-7½.
- Gastrocopta contracta* (Say)
Collections: 9(16), 1(29), 1(30), 1(33) 6(40) 1(48) 8(49) 1(52) 4(62).
Diameter 1.4 mm (1.1-1.8); height 2.4 mm (2.0-3.3); whorls 4½-6.
- Gastrocopta pentodon* (Say)
Collections: 1(9).
- Gastrocopta corticaria* (Say)
Collections: 1(24).
Diameter 1.8 mm; height 2.3 mm; 5 whorls.
- Gastrocopta procera* (Gould)
Collections: 1(44) 2(50) 1(61).
- Gastrocopta cristata* (Pilsbry and Vanatta)
Collections: 14(50) 1(51) 1(58).
- Gastrocopta pellucida* (Pilsbry)
Collections: 1(50) 2(61).
- Pupoides albilabris* (Adams)
Collections: 2(13) 4(16) 2(27) 1(29) 1(40) 4(44) 1(50) 14(61).
- Vertigo milium* (Gould)
Collections: 1(2).
- Vertigo rugosula* Sterki
Collections: 1(16).
Orangish-brown, striated, and very glossy. Diameter 2.0 mm; height 1.2 mm; 4 2/3 whorls.
- Vertigo ovata* (Say)
Collections: 3(1).
- Carychium exiguum* (Say)
Collections: 2(14).
- Oligyra orbiculata* (Say)
Collections: 6(8), 6(10) 19(27), 3(30) 2(35).
In most specimens the opercular nucle-

us is nearly white, and this is followed by a brief yellowish band that darkens to orange. The lining of the aperture is orangish to brown. Externally, there are 6 or 7 light reddish to brownish, widely spaced revolving bands above, and usually 2 light-colored revolving bands on the base and one at the periphery. The soft anatomy is profusely reticulated with black. Diameter 7.4 mm (6.3-8.4); height 6.3 mm (5.7-6.9); whorls 4 1/3 - 5 1/4.

Physa virgata Gould

Collections: 2(16), 15(28), 4(31), 2(51), 1(59).

Physa gyrina Say

Collections: 4(19).
Diameter 10.5-16.0 mm; height 12.0-20.0 mm; 4 2/3 - 5 1/2 whorls.

Lymnaea columella Say

Collections: 6(54).

Lymnaea humilis Say

Collections: 4(54).

Helisoma trivolvis (Say)

Collections: 2(51).

Helisoma anceps (Menke)

Collections: 1(51), 1(60).

Menetus dilatatus (Gould)

Collections: 1(44).
Diameter 3.0 mm; height 1.5 mm; 3 whorls.

Ferrissia rivularis (Say)

Collections: 1(19), 6(59), and 2 from Big Cabin Creek, 5 mi. E. of Big Cabin, Craig County, State Highway 85; 13 April 1963.

Length 4.9 mm (3.5-5.8); height 2.0 mm (1.8-2.1); width 3.0 mm (1.5-4.0).

Ferrissia fragilis (Tryon)

Collections: 1(16).

Laevapex fuscus (C. B. Adams)

Collections: 1(8), 60(60).
Length 4.4 mm (4.0-4.8); width 3.6 mm (3.4-4.0).

Mudalia potosiensis (Lea)

Collections: 1(19), 8(44), 26(55), 1(59).

The apex is nearly entire in the specimens from station 44, and these shells are quite like those of the nominate form

M. livescens. Height 14.3 mm (13.0-15.5); diameter 9.3 mm (9.0-10.2); length of aperture 6.5 (6.0-7.0); whorls 6 1/2-7 1/3.

Oxytrema canaliculatum (Say)

Collections: 2(19).

Length 15.5-16.0 mm; diameter 10.0-10.6 mm; whorls 4 5/6-7 1/2.

Sphaerium partumeium (Say)

Collections: 11 from an unnamed brook, near Oaks, Cherokee County; 10 March 1964.

Sphaerium striatinum (Lamarck)

Collections: 1(16).

Sphaerium transversum (Say)

Collections: 8(16); 3 from a farm pond at Locust Grove, Adair County.

Lampsilis luteola (Lamarck)

Collections: 1(60).

LITERATURE CITED

ARCHER, A. F. (1933) A study of *Polygyra inflecta* (Say). -- Occ. Papers Mus. Zool. Univ. Michigan 276: 1-8.

BRANSON, B. A. (1970) Distribution and annotations for some Arkansas, Missouri, and Kansas mollusks. -- Trans. Kansas Acad. Sci., 72: 386-393.

BRANSON, B. A. (1962) The Recent Gastropoda of Oklahoma, Part IV. Terrestrial species, families Polygyridae and Bulimulidae. -- Proc. Oklahoma Acad. Sci. 42: 60-80.

BRANSON, B. A. (1970) Shell variability in *Polygyra dorfeuilliana*. -- Nautilus 83: 120-133.

HUBRICHT, L. (1961) Eight new species of land snails from the southern United States. -- Nautilus 75: 26-33.

HUBRICHT, L. (1967) Some land snail records from Oklahoma and Arkansas. -- Nautilus 81: 65-67.

MANUSCRIPT RECEIVED OCTOBER 26, 1970.

THE LAND SNAILS OF SOUTH CAROLINA

LESLIE HUBRICHT

This paper lists all of the records for South Carolina in the collection of the author. As in previous papers in this series, only the counties are given as this is usually sufficient for plotting distribution.

HELICELLA VENTRICOSA (Draparnaud). Charleston.

HELIX ASPERSA Müller. Charleston.

POLYGYRA CEREOLUS (Mühlfeld). Charleston, Georgetown, Horry.

POLYGYRA SEPTEMVOLVA (Say). Georgetown.

Although the presence or absence of an internal lamina is not a reliable character for the separation of *P. cereolus* and *P. septemvolva* there are other characters which can be used. *P. septemvolva* differs from *P. cereolus* in its larger central hole of the umbilicus and in its smaller caliber whorls. *P. septemvolva* prefers wetter habitats, but the two species sometimes occur together. *P. septemvolva* occurs from Georgetown, South Carolina to Moss Point, Mississippi. *P. cereolus* ranges from Horry Co., South Carolina to southern Texas. In view of the extreme variation in size, shape, angulation of the periphery, and sculpture to be found in many large lots, the recognition of subspecies seems hardly worthwhile.

POLYGYRA POSTELLIANA (Bland). Charleston.

POLYGYRA PUSTULA (Férussac). Beaufort, Dorchester.

POLYGYRA PUSTULOIDES (Bland). Beaufort, Clarendon, Edgefield, Georgetown, Jasper, McCormick, Saluda.

STENOTREMA BARBIGERUM (Redfield). Edgefield, McCormick.

STENOTREMA BARBATUM (Clapp). Calhoun, Chester, Chesterfield, Kershaw, Newberry, Sumter.

STENOTREMA STENOTREMA STENOTREMA (Pfeiffer). Abbeville, Greenwood, McCormick.

STENOTREMA MAGNIFUMOSUM (Pilsbry). Oconee.

STENOTREMA PILULA (Pilsbry). Greenville.

MESODON THYROIDUS (Say). Abbeville, Aiken, Anderson, Bamberg, Calhoun, Chero-

kee, Chester, Chesterfield, Darlington, Dillon, Edgefield, Fairfield, Florence, Greenville, Greenwood, Horry, Kershaw, Laurens, Lexington, Marion, Newberry, Oconee, Richland, Saluda, Spartanburg, Union, York.

MESODON NORMALIS (Pilsbry). Greenville, Oconee.

MESODON CHRISTYI (Bland). Greenville.

MESODON APPRESSUS (Say). Greenville, Spartanburg.

MESODON PERIGRAPTUS (Pilsbry). Abbeville, Aiken, Beaufort, Berkeley, Chester, Chesterfield, Darlington, Edgefield, Fairfield, Georgetown, Greenville, Greenwood, Horry, Jasper, Laurens, Lee, McCormick, Oconee, Richland, Saluda, York.

MESODON RUGELI (Shuttleworth). Oconee.

MESODON INFLECTUS (Say). Abbeville, Aiken, Anderson, Chester, Fairfield, Greenville, Greenwood, Laurens, McCormick, Newberry, Richland, Saluda, Union, York.

TRIODOPSIS TRIDENTATA (Say). Greenville, Greenwood.

TRIODOPSIS JUXTIDENS (Pilsbry). Aiken, Chester, Darlington, Edgefield, Greenville, McCormick, Newberry, Richland.

TRIODOPSIS FALLAX FALLAX (Say). Aiken, Chester, Chesterfield, Fairfield, Kershaw, Lexington, Newberry, Richland, Saluda, Spartanburg, Sumter, York.

TRIODOPSIS FALLAX AFFINIS Hubricht. Abbeville, Allendale, Anderson, Calhoun, Cherokee, Edgefield, Greenville, Greenwood, Laurens, Lexington, McCormick, Newberry, Richland, Saluda, Spartanburg, Union, York.

TRIODOPSIS ALABAMENSIS (Pilsbry). Abbeville, Anderson, McCormick; Oconee, Saluda.

TRIODOPSIS VANNOSTRANDI (Bland). Aiken, Bamberg, Barnwell, Berkeley, Calhoun, Edgefield, Lexington, McCormick, Orangeburg, Richland, Sumter.

TRIODOPSIS HOPETONENSIS (Shuttleworth). Aiken, Bamberg, Beaufort, Berkeley, Charleston, Clarendon, Colleton, Darlington, Dorchester, Florence, Georgetown, Hampton, Horry, Jasper, Orangeburg, Richland, Sumter, Williamsburg.

TRIODOPSIS MESSANA Hubricht. Berkeley,

Darlington, Dillon, Florence, Lee, Marion, Marlboro.

Triodopsis fallax and its relatives can be divided into two groups. One group contains *T. messana*, *T. obsoleta*, and *T. soelneri*. The members of each group may hybridize with each other, but members of one group will not hybridize in nature with members of the other. Members of both groups may hybridize with the ancestral *T. fallax*. The main barriers to hybridization are geographical and ecological.

Triodopsis fallax fallax (Say) is restricted to the Piedmont except in the northern part of its range where it also occurs on the Coastal Plain. It is a species of roadsides and clearings. I never found it in deep woods. It is a common urban snail.

Triodopsis fallax affinis Hubricht is almost exclusively an urban snail. The few places where I found it away from towns were in the vicinity of trash which had been dumped near the roadside. It is a population resulting from hybridization between *T. fallax fallax* and *T. alabamensis*. Despite its hybrid origin it is remarkably uniform, which would indicate that it is being strongly selected to fit its peculiar habitat.

Triodopsis alabamensis (Pilsbry) is a woodland species which rarely occurs as an urban snail. Its range is southwest of that of *T. fallax fallax* with little if any overlap.

Triodopsis vannostrandi (Bland) is a species of the Coastal Plain where it occupies dryer habitats than *T. hopetonensis*. It sometimes occurs as an urban snail. In southeastern Alabama it is found in the same area as *T. alabamensis* but is always found in wetter habitats at lower elevations.

Triodopsis hopetonensis (Shuttleworth) is the most widely distributed species on the Coastal Plain. It is found in places which are a little wetter than where *T. vannostrandi* occurs, but not as wet as the places where *T. obsoleta* is found. It is a common urban snail. In Alabama, Mississippi, and east Tennessee, where it has been widely introduced, it is almost exclusively an urban snail. The few times that I found it away from towns it was always in the vicinity of dumps.

Triodopsis messana Hubricht is a species of the Coastal Plain. Its range is north of that of *T. vannostrandi* and it is found in much the same habitat. It is a common urban snail, and is sometimes found associated with *T. hopetonensis*.

Triodopsis obsoleta (Pilsbry) is restricted to Pleistocene land. It likes wetter habitats than *T. hopetonensis*. It was found associated with *T. hopetonensis* at only one place, but in several towns it was found on one vacant lot while *T. hopetonensis* was found on another across the street. On the Delmarva Peninsula, where

T. obsoleta occurs, and may have been introduced, it has hybridized with *T. fallax fallax* and has produced *T. hopetonensis*-like and *T. messana*-like forms.

Triodopsis soelneri (J. B. Henderson) is a species of swamps but has been found in pine woods in the vicinity of dumps.

TRIODOPSIS DENOTATA (Férussac). Berkeley, Darlington.

TRIODOPSIS CAROLINIENSIS (Lea). Chester.

TRIODOPSIS ALBOLABRIS (Say). Lexington, Oconee.

TRIODOPSIS MAJOR (Binney). Abbeville, Aiken, Barnwell, Calhoun, Chester, Chesterfield, Darlington, Jasper, Lexington, McCormick, Orangeburg, Richland Saluda.

RUMINA DECOLLATA (Linné). Aiken, Beaufort, Lexington, Richland.

OPEAS PYRGULA Schmacker & Boettger. Charleston.

GULELLA BICOLOR (Hutton). Charleston.

EUGLANDINA ROSEA (Férussac). Beaufort, Berkeley, Charleston, Colleton, Dorchester, Horry, Williamsburg.

HAPLOTREMA CONCAVUM (Say). Aiken, Bamberg, Beaufort, Berkeley, Calhoun, Chester, Darlington, Edgefield, Greenville, Horry, Jasper, Laurens, Newberry, Richland, Williamsburg.

EUCONULUS CHERSINUS CHERSINUS (Say). Beaufort, Berkeley, Charleston, Colleton, Georgetown, Jasper, McCormick, Orangeburg, Saluda, Sumter.

EUCONULUS DENTATUS (Sterki). Edgefield.

GUPPYA STERKII (Dall). Aiken.

GLYPHYALINIA CUMBERLANDIANA (Clapp). Greenville.

GLYPHYALINIA RHODSI (Pilsbry). Abbeville, Aiken, Barnwell, Charleston, Clarendon, Colleton, Edgefield, McCormick, Orangeburg, Saluda.

GLYPHYALINIA INDENTATA (Say). Aiken, Barnwell, Beaufort, Berkeley, Calhoun, Charleston, Chester, Colleton, Edgefield, Greenville, Horry, Jasper, Laurens, Lexington, McCormick, Newberry, Richland, Saluda, York.

GLYPHYALINIA CAROLINIENSIS (Cockerell). Oconee.

GLYPHYALINIA SOLIDA (H. B. Baker). Charleston, Clarendon, Colleton, Darlington, Greenville, Horry, Jasper, Lexington, Sumter.

- MESOMPHIX PERLAEVIS Pilsbry. Greenville.
- MESOMPHIX GLOBOSUS MacMillan. Aiken, Bamberg, Barnwell, Berkeley, Calhoun, Clarendon, Edgefield, Jasper, McCormick, Newberry, Williamsburg.
- MESOMPHIX PILSBRYI (Clapp). Chester, Darlington, Edgefield, Greenville, Greenwood, McCormick, Richland.
- HAWAIIA MINUSCULA MINUSCULA (Binney). Aiken, Beaufort, Berkeley, Calhoun, Charleston, Chester, Colleton, Dorchester, Edgefield, Georgetown, Richland, Williamsburg.
- GASTRODONTA INTERNA INTERNA (Say). Greenville, Oconee.
- VENTRIDENS GULARIS (Say). Abbeville, Aiken, Calhoun, Chester, Edgefield, Greenville, Greenwood, Laurens, McCormick, Newberry, Richland, Saluda, York.
- VENTRIDENS CERINOIDEUS (Anthony). Bamberg, Beaufort, Berkeley, Charleston, Chesterfield, Clarendon, Colleton, Georgetown, Hampton, Horry, Jasper, Lexington, Marion, Orangeburg, Richland, Sumter, Williamsburg.
- VENTRIDENS PILSBRYI Hubricht. Oconee.
- VENTRIDENS INTERTEXTUS (Binney). Aiken, Anderson, Bamberg, Berkeley, Cherokee, Chester, Dillon, Edgefield, Greenville, Greenwood, Horry, Lexington, McCormick, Newberry, Oconee, Orangeburg, Richland, Saluda, Sumter.
- VENTRIDENS ELLIOTTI (Redfield). Greenville, Oconee.
- ZONITOIDES ARBOREUS (Say). Aiken, Anderson, Beaufort, Berkeley, Charleston, Chester, Chesterfield, Colleton, Dorchester, Edgefield, Greenville, Horry, Jasper, Laurens, Lexington, McCormick, Orangeburg, Richland, Saluda, Sumter, Williamsburg.
- ZONITOIDES PATULOIDES (Pilsbry). Greenville.
- STRIATURA MERIDIONALIS (Pilsbry & Ferriss). Aiken, Beaufort, Berkeley, Greenville, Laurens, McCormick, Union.
- ANGUISPIRA STRONGYLODES (Pfeiffer). Abbeville, Calhoun, Edgefield, Fairfield, Greenwood, Laurens, Lexington, Richland, Sumter.
- ANGUISPIRA FERGUSONI (Bland). Horry, Richland.
- DISCUS PATULUS PATULUS (Deshayes). Chester, Saluda, York.
- HELICODISCUS FIMBRIATUS (Wetherby). Oconee.
- HELICODISCUS SALUDENSIS (Morrison). Greenville.
- HELICODISCUS NOTIUS NOTIUS Hubricht. Anderson, Charleston, Edgefield, Greenwood, Laurens, McCormick, Saluda, Williamsburg.
- HELICODISCUS PARALLELUS (Say). Aiken, Barnwell, Beaufort, Berkeley, Charleston, Colleton, Darlington, Edgefield, Georgetown, Jasper, Lexington, Orangeburg, Richland, Saluda, Sumter, Williamsburg.
- PUNCTUM MINUTISSIMUM (Lea). Abbeville, Aiken, Beaufort, Berkeley, Calhoun, Charleston, Greenville.
- PHILOMYCUS CAROLINIANUS (Bosc). Abbeville, Bamberg, Berkeley, Darlington, Dillon, Edgefield, Horry, Laurens, Newberry, Oconee, Saluda.
- PHILOMYCUS VENUSTUS Hubricht. Greenville.
- PALLIFERA MUTABILIS Hubricht. Abbeville, Darlington, Horry, Newberry, Saluda.
- PALLIFERA MEGAPHALLICA Grimm. Calhoun, Jasper, McCormick, Richland, York.
- SUCCINEA WILSONI Lea. Charleston.
- SUCCINEA CONCORDIALIS Gould. Charleston.
- SUCCINEA INDIANA Pilsbry. McCormick.
- SUCCINEA CAMPESTRIS (Say). Charleston, Horry.
- CATINELLA VERMETA (Say). Colleton, Greenville, Hampton, Horry.
- CATINELLA OKLAHOMARUM (Webb). Abbeville, Bamberg.
- CATINELLA HUBRICHTI Grimm. Colleton.
- CATINELLA PUGILATOR Hubricht. Charleston.
- STROBILOPS LABYRINTHICA (Say). Laurens, McCormick, Union.
- STROBILOPS TEXASIANA Pilsbry. Abbeville, Aiken, Charleston, McCormick.
- STROBILOPS AENEA Pilsbry. Bamberg, Chester, Colleton, Hampton, Horry, Jasper, McCormick, Saluda, Sumter.
- GASTROCOPTA CONTRACTA (Say). Berkeley, Jasper, McCormick, Richland, Williamsburg.

GASTROCOPTA PENTODON (Say). Aiken, Beaufort, Chester.

GASTROCOPTA TAPPANIANA (C. B. Adams). Aiken, Bamberg, Beaufort, Berkeley, Horry, Jasper, Laurens, Orangeburg.

GASTROCOPTA RUPICOLA (Say). Beaufort, Berkeley, Charleston, Williamsburg.

GASTROCOPTA PROCERA PROCERA (Gould). Edgefield.

PUPOIDES ALBILABRIS (C. B. Adams). Charleston, Edgefield, Horry, McCormick.

VERTIGO MILIUM (Gould). Bamberg, Beaufort, Charleston, Colleton, Georgetown, Hampton, Jasper.

VERTIGO OSCARIANA Sterki. Aiken, Beaufort, Colleton, Hampton.

VERTIGO ORALIS Sterki. Bamberg, Beaufort, Colleton, Hampton, Orangeburg.

VERTIGO OVATA OVATA (Say). Bamberg, Beaufort, Colleton, Georgetown, Horry, Orangeburg, Williamsburg.

VERTIGO TESKEYAE Hubricht. Williamsburg.

PUPISOMA DIOSCORICOLA (C. B. Adams). Bamberg, Beaufort, Charleston, Colleton, Jasper.

PUPISOMA MINUS Pilsbry. Bamberg, Beaufort, Jasper.

PUPISOMA MACNEILLI (Clapp). Charleston, Jasper.

CIONELLA MORSEANA Doherty. Greenville.

CARYCHIUM EXILE H. C. Lea. Chester, Edgefield, Laurens.

CARYCHIUM FLORIDANUM G.H. Clapp. Aiken, Beaufort, Berkeley, Calhoun, Charleston, Colleton, Jasper, Orangeburg.

CARYCHIUM CLAPPI Hubricht. Aiken, Greenville.

CARYCHIUM EXIGUUM (Say). Georgetown.

POMATIOPSIS LAPIDARIA (Say). Bamberg.

ADDITIONAL LAND SNAILS FROM NORTH CAROLINA

LESLIE HUBRICHT

Due to some inexplicable error the following species were omitted from 'The Land Snails of North Carolina' *STERKIANA* 39: 11-15.

STENOTREMA FRATERNUM FRATERNUM (Say). Caswell, Davidson, Warren.

MESODON ELEVATUS (Say). Haywood.

GLYPHYALINIA SOLIDA (H. B. Baker). Bladen, Brunswick, Cabarrus, Chatham, Craven, Guilford, Mitchell, Rutherford, Sampson.

PHILOMYCUS TOGATUS (Gould). Burke, Cabarrus, Caldwell, Cleveland, Davidson, Davie, Forsyth, Guilford, Person, Rockingham, Rowan, Stokes, Swain, Wilkes.

PHILOMYCUS FLEXUOLARIS (Rafinesque). Cherokee, Graham, Henderson, Macon, Mitchell, Rutherford, Swain, Yancey.

MANUSCRIPT RECEIVED AND ACCEPTED FOR PUBLICATION, FEBRUARY 17, 1971.

BENJAMIN TAPPAN, JR. (1773-1857) AS
A NATURALIST AND A MALACOLOGIST¹

RALPH W. DEXTER

Professor of Biological Sciences, Kent State University, Kent, Ohio

I. BRIEF BIOGRAPHICAL SKETCH²

Benjamin Tappan, Jr. was born 25 May 1773 at Northampton, Massachusetts, the eldest of seven sons. After a common public school education, he worked with his father, a merchant at Northampton, as a goldsmith and silversmith until he was apprenticed to learn copperplate engraving and printing. His hobbies were portrait painting, which he studied under the famous Gilbert Stuart, and natural history. Following his student days at Yale, he studied law for three years and was admitted to the Bar at Hartford, Connecticut, in 1799.

That same year he came out to northeastern Ohio to claim land in Ravenna Township (10,291 acres) owned by his father. This was about two-thirds of what constituted Ravenna Township. Young Tappan became the founder and first settler of the village and township of Ravenna named after an Italian city--the first of nine communities in the U.S. to adopt this name. While it had been suggested by friends that the new settlement be named after Tappan, he preferred the name of Ravenna, suggested by his brother John, who had been to Ravenna, Italy.

The next year he returned to Connecticut where he was married to Nancy Wright 20 March 1801. They left at once for Ohio to settle in Ravenna Township.

Between 1803-05 Tappan was the representative for the Trumbull District in the Ohio Senate. In 1807, with creation of Portage County from a portion of Trumbull County, Tappan's house was designated as the County Courthouse. Until that time he traveled to Warren in order to attend court. In 1808 Tappan laid out the town plan for Ravenna, but the next year he left that community for Steubenville where he was invited to practice law. However, he continued to serve as prosecuting at-

torney for Portage County. During the war of 1812 he served as aide-de-camp to General Wadsworth as Major Commander of the First Brigade, 4th Division, Ohio Militia.

Between 1816-23 Tappan was Circuit Court Judge for the Third Common Pleas District of Ohio which included eight counties. In 1822 his wife died, and the following year he was married to Betsy Frazer who died in 1840. In 1823 he was appointed a member of the Ohio Canal Commission which he served for 11 years, and three years later he ran unsuccessfully for governor of Ohio.

In 1831 he published the first law reports in Ohio entitled 'Cases Decided in the Courts of Common Pleas in the 5th Circuit of Ohio' which became widely known as 'Tappan's Reports' and were frequently quoted in subsequent legal cases. Two years later he was appointed Federal District Judge by President Jackson, but served for a short time only since his appointment, along with other Democrats, was not confirmed by the Senate.

Between 1839-45 he was a U.S. Senator and a Jacksonian Democrat in politics. He joined the Free-Soil movement and became known widely for his anti-slavery sentiments. His law partner in Steubenville at that time was Edwin M. Stanton, who became Secretary of War under President Lincoln.

For several years (1846-48) he published editorials in the Columbus Free Press, which had been established by his second son, Eli. For the next five years he founded and operated with his brother William, the Tappan Female Institute located in Ravenna. William Hegeman was brought from Nantucket to conduct the school in which Tappan was keenly interested.³

Tappan had two sons. By his first wife was Dr. Benjamin Tappan, a physician at Steubenville. By his second wife was Eli Todd Tappan (1824-88), lawyer, editor, and educator. After teaching mathematics at

several institutions, he served as president of Kenyon College 1869-75. He also served as president of the Ohio State Teachers Association and the National Education Association. In addition to the newspaper he founded, he published works on mathematics and education.

Benjamin Tappan, Jr. died at Steubenville 12 April 1857, four years after the incorporation of Ravenna which he had founded. An unpublished autobiography covering the first 50 years of his life is deposited in the Ohio Historical Society in Columbus, and his personal papers are in the Manuscript Division of the Library of Congress in Washington, D.C.

II. TAPPAN AS A NATURALIST AND A MALACOLOGIST

Tappan developed a lifelong interest in natural history. He became an amateur naturalist in his own right, and in his political life he played a leading part in developing scientific institutions. In the collection of his manuscripts at the Ohio Historical Society there are many lists and descriptions of shells which he copied from various publications. In 1828 he published an article 'On the Boulders of Primitive Rock Found in Ohio, and other Western States and Territories.'⁴ In this article, he questioned the theory that boulders of foreign origin were brought down from the north by currents of water. He suggested that possibly they fell in place or were thrown up by volcanic action. He admitted that little was known on the subject, and Tappan apparently was not acquainted with glacial action which undoubtedly was the real cause.

In 1833 he published 'A Discourse Delivered before the Historical and Philosophical Society of Ohio at the Annual Meeting of said Society in Columbus, December 22, 1832.'⁵ Tappan was President of the Society at the time and stated that, '... the opinion was formed, that something more should be aimed at in the organization of the State Society than collecting materials for a civil history of the State; its natural history, it was thought, was as important, as useful, and as necessary to be developed, and explained; hence was passed 'an act incorporating the Historical and Philosophical Society of Ohio' under the authority of which we are now assembled.--Neither can such a society compose full and complete treatises, upon subjects of natural history, but they may do more than can be done by isolated individuals in collecting materials and in storing up facts. We have several exam-

ples in our country, the Academy of Natural Sciences of Philadelphia and the New York Lyceum of Natural History have shown that much may be done by such societies to enlarge the boundaries of science. -- A full history of the people (native Indians) who have immediately preceded us in the occupancy of the soil of Ohio (some of whom yet remain among us) is of more interest--they have been constantly receding from the presence of the whites, and melting away from existence as a people. -- Let the members of the Society who may be favorably situated for the purpose explore their history--by ascertaining, all which can be known of the history, laws, usages, manners, and habits of these people; the philosophic inquirer will be furnished with materials, on a knowledge of which may be constructed a more rational and better system of treatment. -- Antiquarian investigations, traditional and authentic history of the Indians; and the history of the rise and progress of this state, though interesting and important, are yet in my estimation of minor interest, and of secondary importance to a thorough investigation of its natural history. -- If the geography of this continent is yet imperfectly understood, is not much less known of its zoology and still less of its botany? ... to the lovers of botany our woods and prairies invite us to an unexplored field where new genera and species of plants will be found to reward with new beauties their tasteful labors. The uses economical and medicinal of our forest trees and plants should be investigated. The geology of Ohio remains also an unexplored field. -- We want geological maps and descriptive memoirs of every county in the state. -- In zoology much has been done in the other states, and something in our own, yet it is believed that we have birds which have eluded the industrious researches of Wilson, Bonaparte, and Audubon, and animals which have not been classified by Harlan, nor described by any other writer--the diligent student will find new species in the various families to reward his labors and enrich the collections. The fishes of America--have been drawn and described by our associate [Charles] Lesueur. The insects of Ohio have been collected by our associate [Thomas] Say -- The same gentleman is now engaged in a new and splendid work on the shells of America. -- It is hoped and expected that it will unite all the lovers and cultivators of natural science and bring them into communication with each other, and by means of a journal of their pro-

ceedings and discoveries in communication with fellow laborers everywhere. -- What has placed scientific France at the head of civilized nations? -- I should answer it is her garden of plants [Jardin des Plantes in Paris], her unrivaled Museum of Natural History, the effect and the cause of scientific associations.'

When Dr. Samuel P. Hildreth, physician-naturalist of Marietta, was on an excursion in northeastern Ohio in the spring of 1835,⁶ he paid a visit to Judge Tappan at Steubenville. Dr. Hildreth wrote in his account. 'May 7 -- I spent a part of the forenoon in examining Judge Tappan's cabinet of natural history. He has a fine collection of minerals, shells, and fossil organic remains. The minerals embrace nearly 1,200 species arranged in natural families. The fresh water shells amount to nearly 100 species, the great number of which are peculiar to our streams. The family of the Unios alone contains about 90 species, all natives of the Western waters. His collection of marine shells is also very fine. The library of the Judge embraces, besides a due proportion belonging to his own profession, many of the most valuable writings of Cuvier and Brongniart, in their original language [French], on the animal kingdom, as well as fossil organic remains. It is truly gratifying to see even a small part of the wealth of our country, and a share of its most brilliant intellect, devoted to the study and the development of natural history of 'the West'; a subject deeply interesting, but until recently shrouded in much darkness; within a few years, however, many bright lights have been kindled, with promise to illustrate the hidden arcana of nature. The conchology and botany of the great valley have been pretty thoroughly examined while Entomology, one of the most fertile branches, has been but partially investigated, although the indefatigable Say made a very fair beginning. The study of fossil vegetable and animal remains of which the valley of the Mississippi is one vast cemetery, yet remains an almost entirely unexplored field. But the time is not distant when this vast cabinet of natural history, formed by a benevolent creator for the study and admiration of man, will be classed, and arranged by our own naturalists.'

'Among the minerals in the cabinet of Judge T. [Tappan] I observed a specimen of native sennabar, or sulphuret of mercury, in acicular crystals, being a fragment of a rolled mass of nearly a pound weight. This rare and beautiful mineral was found on the waters of Paint Creek, amongst the

debris and rolled masses of primitive rocks, which abound through the Tertiary deposits, from Cillicothe to the shores of Lake Erie, and must have been brought from the region north of Lake Huron or Superior.

'The day before I reached Steubenville, an extensive collection of human skeletons, in a fine state of preservation had been found on the opposite side of the Ohio River, a few rods from the shore, and nearly against the lower part of the town. They were very probably placed here by the Mingo tribe of Indians, who for many years inhabited this spot and the country below, which still retains the name of 'the Mingo Bottom. -- These skeletons not less than 50 or 60 in number were of all ages and of both sexes -- no relics, implements or ornaments of a metallic nature were discovered. Many interesting memorials of their own arts and of their affection for their relatives were found, consisting of pots and vases of coarse earthenware; some of them were formed with much taste and beauty of outline -- a number of the vases still contained relics of the food consisting of the bones of turkeys, opossums, etc. left for their departed friends while on their journey to the land of spirits. Stone pipes were also found -- flint arrowheads were very numerous.'

Isaac Lea named a clam *Unio tappanianus* after Benjamin Tappan, but this is now regarded as a synonym of *Lasmigona viridis* Rafinesque by some authors.⁷ Tappan questioned the validity of the name *Unio viridis* Rafinesque as applied to his specimens. He wrote to Isaac Lea of Philadelphia on 14 August 1836, 'Dr. Kirtland will publish a description of this shell probably, and name it *tappanii*.' It was Lea, however, rather than Kirtland who finally proposed this name. In the same letter, Tappan wrote to Lea that, 'Since I saw you I have had a visit from Dr. Kirtland and have spent a day with Hildreth; we have agreed to the following nomenclature of the Unios, vis.'⁸ A list of 118 names then follows. On 9 October 1836 Tappan wrote to Robert Buchanan of Cincinnati, 'We might after a while learn the proper specific names of the Unios if the Philadelphians [i. e. T. A. Conrad, Curator at the Academy of Natural Science of Philadelphia] would let them alone, but while Conrad, etc. are laboring to father them all upon Rafinesque, and Lea is appropriating the discoveries of his predecessors to himself, we get little more than confusion. I am getting to think with Troost that it is best to follow Lea, however, generally; he makes too many species, but

he will give way to reason and evidence and in his late synopsis has improved upon himself.⁹

In 1839 Tappan published a 'Description of some new Shells.'¹⁰ This included the original description of *Physa sayii* Tappan and *Unio sayii* Ward, the latter of which was prepared by Dr. Charles J. Ward of Roscoe, Ohio; also, the original description of *Paludina heterostropha* Kirtland prepared by Dr. Jared P. Kirtland. The specimens of this new species were deposited in the cabinets of Thomas Say, Kirtland, Ward, and Tappan. *Unio sayii* is now known as *Elliptio sayana* (Conrad). In 1842 Zadock Thompson, in his book *History of Vermont: Natural, Civil, and Statistical*, described as a new species *Pupa tappaniana* known as *Bifidaria tappaniana* and *Gastrocopta tappaniana*). The type locality is given as Vermont and the range is from Ontario and Maine to Virginia and Alabama, west to South Dakota, Kansas, and Arizona.

During Tappan's service in the U.S. Senate, he was a member of the Library Committee, and he took leadership in establishing the Smithsonian Institution, the creation of which passed the Senate, but was not acted upon by the House of Representatives. It was accomplished, however, by the 29th Congress (1845-47). Arrangements for the museum were essentially those which had been proposed by Tappan. However, Tappan had included plans for a School of Agriculture and Mechanic Arts, experimental gardens, and a Library of Science. Tappan led the opposition when the National Institute, which was a private body, offered to care for scientific collections obtained by the government. He made an attack on the body thinking incorrectly that the National Institute was planning to take charge of publications of scientific results of government expeditions. Actually the National Institute wanted only to arrange exhibits for the public, utilizing the government collections. Finally a bill was passed establishing the Smithsonian Institution which took charge of all government scientific collections and publications based upon them. This final bill was sponsored by Senator Robert Dale Owen of Indiana.¹¹

While serving as a Senator from Ohio, Tappan was appointed as the agent for the Library Committee to superintend the publication of reports based upon the Wilkes Expedition of 1838-1842. This was the first U.S. naval world-wide scientific expedition. He worked with Commander Charles Wilkes in arranging for publication of the voluminous reports.¹²

Allison Cusick of Kent State University has called my attention to four herbarium specimens which had been collected by Benjamin Tappan, Jr. Two of these are in the Herbarium at the University of Michigan, while the other two are in the Herbarium of the Academy of Natural Sciences of Philadelphia. They were collected along the Ohio River in 1836.

Benjamin Tappan has been honored in recent years by having his name given to several things. Tappan Elementary School in Ravenna, the Village of Tappan in Harrison County, and Tappan Dam near Steubenville have all been named after Benjamin Tappan, Jr. Tappan Reservoir created by Tappan Dam covers 2,350 acres and is located in the Muskingum Conservancy District in Harrison County. It is an impoundment of a tributary to the Tuscarawas River.

Benjamin Tappan, Jr. was not only the founder of Ravenna, a leader in legal, military, and civil matters, but was also a pioneer in the natural history of Ohio and the nation.

NOTES

1. This paper was read at a meeting of the Portage County Historical Society held at Ravenna, Ohio, 27 October 1967.

2. Compiled from the following sources: *Appleton's Cyclopaedia of American Biography*; *Dictionary of American Biography*; *Portage Heritage*; Howe, Henry, *Historical Collections of Ohio*; Upton, H. T., *History of the Western Reserve*.

3. McCormick, E. L. 1962. Melville's Third Captain. *Historic Nantucket*. 9(4): 62-65.

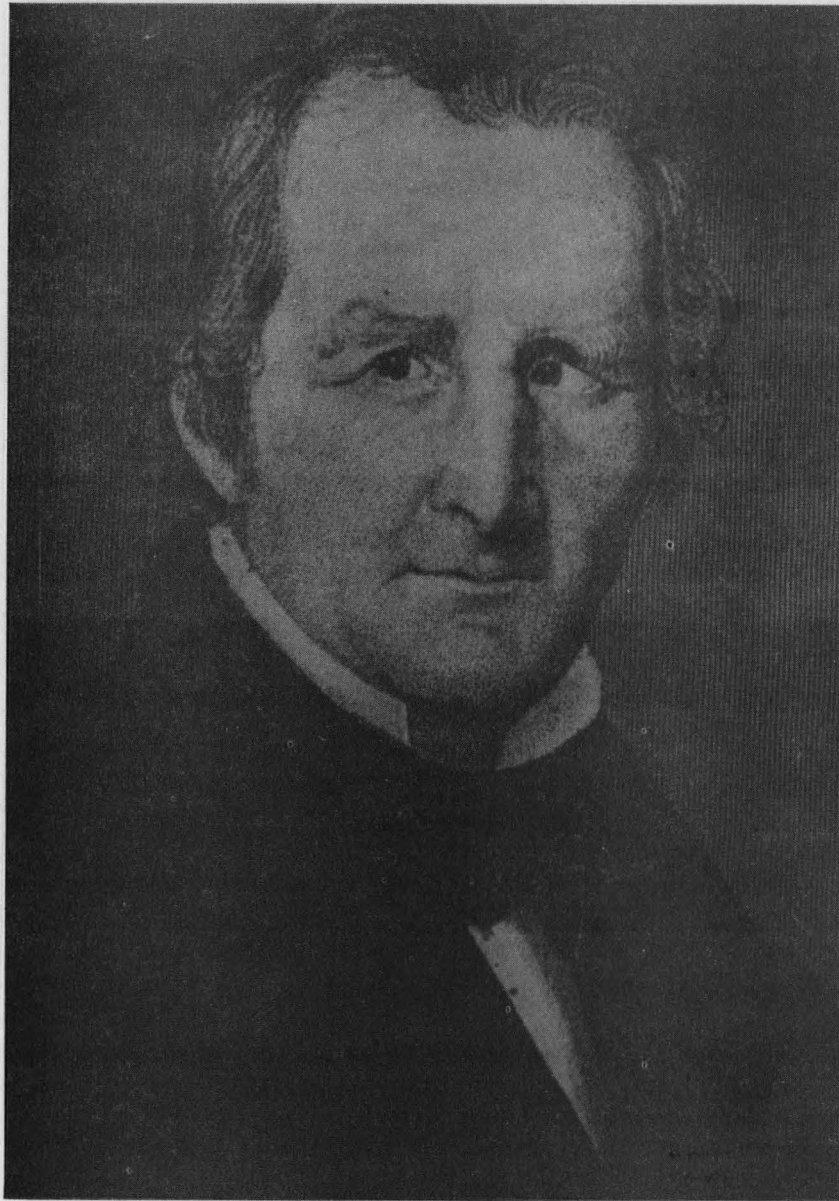
4. Tappan, Jr., Benjamin. 1828. On the Boulders of Primitive Rocks found in Ohio and other Western States and Territories. *Amer. Jour. Sci. and Arts*. 14(2): 291-297.

5. Tappan, Jr., Benjamin 1833. A Discourse delivered before the Historical and Philosophical Society of Ohio at the Annual Meeting of said Society in Columbus, December 22, 1832. 16 pp. Privately printed.

6. Hildreth, Samuel P. 1837. Miscellaneous Observations made during a Tour in May, 1835, to the Falls of the Cuyahoga near Lake Erie; Extracted from the Diary of a Naturalist. *Amer. Jour. Sci. and Arts*. O.S. 31(1): 1-84.

7. Haldeman, S.S. 1841. Remarks on the Identity of *Unio viridis* and *U. tappaniana*. *Proc. Acad. Nat. Sci. Phila.*, 1(7): 104

8. Letter of Benjamin Tappan to Isaac Lea 14 August 1836. Original in library



BENJAMIN TAPPAN, JR., (1773-1857)

of Academy of Natural Sciences of Philadelphia (Collection 98), and quoted with permission.

9. Letter of Benjamin Tappan to Robert Buchanan 9 October 1836. Original in Library of Historical Society of Pennsylvania, Philadelphia, and quoted with permission.

10. Tappan, Jr., Benjamin. 1839. Description of some new Shells. *Amer. Jour. Sci. and Arts. O.S.* 35(2): 168-270.

11. Goode, George B. 1901. The Genesis of the U.S. National Museum. *Ann. Rept., Smithsonian Institution for 1897. Vol. 2*, pp. 83-192.

12. Haskell, D. C. 1942. The U. S. Exploring Expedition, 1838-1842, and its Publications, 1844-1874. New York Public Library, 188 pp.

MANUSCRIPT RECEIVED JANUARY 8, 1971

CORBICULA - SUMMARY NOTE

Aside from the spectacular infestations and vast benthic shell bars in streams the exotic Asian bivalve, *Corbicula*, has been more than a pest or a nuisance in North America. The economic losses have not been summarized but they have been severe in the field of water management.

A similar parallel exists in Europe in the Zebra Clam (*Dreissena*). A comprehensive bibliography for this species has recently been issued. A comparable bibliography for *Corbicula* is to complement the former.

Malacologists are in a good position to counsel industrial management regarding potential damaging aspects of this mollusc.

RALPH SINCLAIR, Environmental Protection Agency, Water Quality Office, National Training Center, 4676 Columbia Parkway, Cincinnati, OH 45226 would appreciate reprints or literature citations involving *Corbicula*. Copies of a current bibliography are available from him at the address above.

MOLLUSCAN DIGEST

The February number (vol. 1, no. 2) of *MOLLUSCAN DIGEST* has just been received. It promises to become a valuable reference aid for malacologists in any field since it notes the appearance of books and periodicals in malacology long before the usual bibliographies are assembled and printed. *STERKIANA* offers congratulations to the editors, Steven J. Long and Jack Brookshire.

The appearance of this publication reminds many of us that John Q. and Rose Burch had a good idea when they started mimeographing the Minutes of the Conchological Club of Southern California. Every new publication of this kind (*Sterkiana*, *Molluscan Digest*, the *Veliger*) is a compliment to their originality and energy. Long may they live and be imitated.

ANNOTATED CHECKLIST OF THE LAND SNAILS OF
MARYLAND AND THE DISTRICT OF COLUMBIA

F. WAYNE GRIMM¹

Although it is a small state which contains only twenty-three counties, Maryland has a fairly rich land snail fauna which has never been surveyed. Scattered collecting has been done by previous workers in all of the state's physiographic provinces, but most collectors simply pass through Maryland enroute to richer collecting grounds in other states. Between 1954 and 1969 I collected extensively throughout the state in order to gather sufficient material for a faunal survey. This paper lists all of the records for the state in my collection, which is now at the National Museum of Canada, as well as a few of the records in the collections of the United States National Museum and the Academy of Natural Sciences of Philadelphia. Erroneous or doubtful records have been placed in parentheses.

Unless the distribution of a species is limited to a small area within a county or a group of counties, only the counties are listed. Introduced species, most of which are quite limited in their distribution, are listed by county. The order of listing proceeds from northwest to southeast. The city of Baltimore, which is politically separated from, but adjacent to Baltimore County, and which contains several species which have not been found in the county, is listed as a separate unit.

I wish to express my gratitude to Dr. J. P. E. Morrison of the United States National Museum and Dr. R. T. Abbott, formerly of the Academy of Natural Sciences of Philadelphia for graciously encouraging me to use the facilities of these museums, to Ralph W. Jackson of Dailsville, Maryland, who permitted me to examine his collection, and to my father, G. F. Grimm, for his invaluable assistance in the field. I am most deeply indebted to Dr. Arthur H. Clarke, Jr., head of the Invertebrate Zoology Section, National Museum of Natural Sci-

ences, National Museums of Canada, for permitting me to use the facilities of the Museum and for encouraging the continuation of my work on terrestrial molluscs in every way.

CEPAEA NEMORALIS (Linn.). Frederick, D. C. Deliberately introduced to Frederick Co. from Warm Springs, Va., in July, 1969. An old record from D. C. in the U.S.N.M. has not been confirmed in recent years.

STENOTREMA HIRSUTUM (Say). Garrett, Allegany, Washington, Frederick, Montgomery, Carroll, Howard, Baltimore, Harford, St. Mary's, Cecil, Kent, D.C. It is quite rare on the Coastal Plain, and restricted to hilly districts. Pilsbry's (1940, p. 663) record from Dorchester Co. is based upon *S. barbatum*.

STENOTREMA BARBATUM (Clapp). Garrett, Allegany, Washington, Frederick, Montgomery, Howard, Baltimore, Harford, Anne Arundel, Prince Georges, Cecil, Kent, Dorchester, D. C.

STENOTREMA, new species. Garrett. A description of this species is in preparation.

(*STENOTREMA STENOTREMA*) (Fér.). Although there are specimens in the U.S.N.M. allegedly collected in the District of Columbia and Allegany Co., Md. many years ago, recent collecting has failed to confirm the presence of this species in these places.

STENOTREMA FRATERNUM (Say). Garrett, Allegany, Washington, Frederick, Montgomery (U.S.N.M.) East of the Blue Ridge complex, this species has been found only at Sugarloaf Mountain.

(*STENOTREMA LEAI LEAI*) (Binney). Garrett (Pilsbry, 1940, p. 678). All specimens from this county in the collections examined appear to be depauperate *S. fraternum*. Although many cool upland bogs and marshes appear to be suitable for this species, I have never observed it in Maryland. It is quite likely to be a member of the fauna.

1. Visiting investigator, National Museum of Natural Sciences, National Museum of Canada, Ottawa, Canada.

(*STENOTREMA LEAI ALICIAE*) Pilsbry. Allegany, D.C. (Pilsbry, 1940, p. 680). The shells of small, high spired *S. fraternum* from dry mountainsides throughout western Maryland and northern West Virginia resemble *aliciae* rather closely, but the whorls are not as tightly coiled. This is a species of the southern Interior Basin, the Ozarks and southeastern Great Plains, and the Gulf Coastal Plain.

MESODON APPRESSUS (Say). Queen Anne s, in drift (A.N.S.P.), Dorchester, introduced at several stations (Jackson - Grimm). These examples may be referred to the form *sculptior*, Chadwick. With the exception of *laevior*, all of the named forms of *M. appressus* intergrade over a wide range, and probably should have no nomenclatural standing. *M. laevior* and *M. appressus* do not interbreed and must be considered separate species.

MESODON LAEVIOR (Pilsbry). Baltimore City, on waste ground (introduced).

MESODON ZALETUS (Binney). Garrett.

(*MESODON ANDREWSAE ALTIVAGUS*) (Pilsbry). Garrett (Pilsbry, 1940, p. 718). This record is based upon *M. zaletus* which is not fully mature.

MESODON THYROIDUS (Say). All counties, D. C.

MESODON SAYANUS (Pilsbry). Garrett.

TRIODOPSIS ALBOLABRIS (Say). All counties, D. C.

TRIODOPSIS MULTILINEATA (Say). Garrett, along Bear Creek and Muddy Creek (C. East in U.S.N.M.)

TRIODOPSIS DENTIFERA (Binney). Garrett.

TRIODOPSIS DENOTATA (Fer.). Garrett, Allegany, Washington, (Allegheny ridges), Harford (Susquehanna Valley).

TRIODOPSIS CAROLINIENSIS (Lea). Wicomico (Sharptown, rare, probably introduced). This species has not been recorded north of northeastern South Carolina.

TRIODOPSIS FOSTERI (F. C. Baker). Wicomico, introduced at several stations, Worcester (Snow Hill).

TRIODOPSIS TRIDENTATA (Say). Garrett, Allegany, Washington (Allegheny ridges), Harford (Susquehanna Valley), Cecil (Susquehanna Valley).

TRIODOPSIS JUXTIDENS JUXTIDENS (Pilsbry). Allegany (eastern edge), Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Anne Arundel, Prince Georges, Charles, Calvert, St. Mary's, Cecil, Kent, Talbot (subfossil), Dorchester (subfossil), D.C. This and the preceding species occur together quite frequently where their ranges overlap. Both of them are frequently associated with *T. fraudulenta* in the Allegheny ridges, and with members of the *T. fallax* complex east

of the mountains. Pilsbry's (1940, p. 798) record for Garrett county is based upon *T. picea*.

TRIODOPSIS PICEA Hubricht. Garrett. This species prefers damp, shaded sandstone talus in the higher Allegheny Plateau, and ranges from Bedford County, Pennsylvania (C. F. Reed) to Nicholas County, West Virginia. Its genitalia are quite large, and it does not intergrade with *T. fraudulenta*, *T. juxtidentis*, or *T. vulgata*. Reliance upon shell characters however well they can be measured, to determine the relation between morphologically 'distinct' populations in this genus, may be misleading. Some species may be quite distinct, though it may be difficult to separate them from others by the appearance of the shell, and these possess constant, but fairly reliable, small differences from similar species. Others, which appear to be quite distinct, such as the extremely modified members of the *T. fallax* complex, often interbreed with each other in the laboratory, and occasionally in nature. The genitalia may differ in size, proportion, and internal papillation, but these differences are slight, for species of quite different complexes can mate in the laboratory, although they usually lay infertile eggs.

TRIODOPSIS FRAUDULENTA (Pilsbry). Garrett, Allegany, Washington (Allegheny ridges).

(*TRIODOPSIS VULGATA*) Pilsbry. The Cecil County record (Pilsbry, 1940, p. 806) is based upon *T. juxtidentis*, and the Garrett County records (*op. cit.*) upon *T. picea*. Specimens in A.N.S.P. and U.S.N.M., collected some time in the nineteenth century and labeled Washington, D. C. may not be accurately localized.

TRIODOPSIS FALLAX FALLAX (Say). Allegany, Frederick, Carroll, Baltimore, Baltimore city, Montgomery, Howard, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Cecil, Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Somerset, D. C. Examples from Somerset County show evidence of introgression from *T. fallax obsoleta*. In Allegany County it is restricted to a few stations along the western Md. Railway and may have been introduced.

TRIODOPSIS FALLAX OBSOLETA (Pilsbry). Anne Arundel, Wicomico, Somerset, Worcester. Most colonies on the Delmarva Peninsula show evidence of introgression from *T. f. fallax*. *T. hopetonensis chincoteauguensis* Pilsbry is based upon such a colony.

TRIODOPSIS FALLAX FALLAX X TRIODOPSIS FALLAX OBSOLETA. Dorchester, Wicomico, Somerset, Worcester. A sinistral specimen was collected at Sharptown, Wicomico Co. Many colonies on the southern half of the Delmarva Peninsula appear to have stabil-

ized at some point of intermediacy between the two subspecies, indicating that hybridization has been taking place for some time. There is no cline. Laboratory reared hybrids between pure strains of the two subspecies resemble the Delmarva populations.

(*TRIODOPSIS HOPETONENSIS*) (Shuttieworth). My own record (Grimm 1960, p. 12) of this species from the Delmarva Peninsula is based upon *T. fallax obsoleta* with large teeth, a sign of introgression from *fallax*. In nature, *T. f. obsoleta* does not appear to cross with *T. f. hopetonensis*, although it will do so in the laboratory, when two individuals are isolated and caged together. A report concerning hybridization experiments with *Triodopsis* is being prepared.

(*TRIODOPSIS MESSANA* Hubricht). Hubricht's (1953, p. 119) records from the Delmarva Peninsula are based upon colonies of relatively uniform hybrids between *fallax* and *obsoleta* which resemble *T. f. messana* quite closely.

ALLOGONA PROFUNDA (Say). Garrett, Allegany, Washington.

OPEAS PYRGULA Schmacker & Boettger. Baltimore, Baltimore city, D. C.

LAMELLAXIS MICRA (d'Orb.) D. C. greenhouse.

CECILIOIDES ACICULA (Müll.). Carroll, Baltimore city.

HAPLOTREMA CONCAVUM (Say). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Harford, Prince Georges, Anne Arundel, Charles, Cecil, D. C.

EUCONULUS POLYGYRATUS (Pilsbry). Garrett, Allegany, Washington, Frederick, Baltimore, Baltimore city, Harford, Cecil, Dorchester (subfossil).

EUCONULUS DENTATUS (Sterki). Frederick, Howard, Baltimore, Prince Georges, Anne Arundel, Calvert, Charles, St. Mary's, Caroline, D. C.

EUCONULUS FULVUS (Müll.). Garrett.

GUPPYA STERKII (Dall). Allegany, Washington, Frederick, Baltimore, Harford, Prince Georges, Calvert, St. Mary's, Talbot (subfossil).

VITRINA LIMPIDA Gould. Garrett, along the Casselman River.

OXYCHILUS DRAPARNALDI (Beck). Frederick, Carroll, Baltimore, Baltimore City, D. C.

OXYCHILUS CELLARIUS (Müll.). Garrett, Allegany, Frederick, Baltimore, Baltimore city, Harford, Cecil, Kent, D. C. This species is preyed upon by the preceding one, and they cannot coexist at the same station for long.

NESOVITREA ELECTRINA (Gould). Garrett, Frederick, Carroll, Baltimore, Dorchester (subfossil), Worcester, D. C. This species

is infrequently found east of Garrett County, although when found it is usually abundant. It appears to be at the southeastern periphery of its range in Maryland.

GLYPHYALINIA BURREINGTONI (Pilsbry). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Baltimore, Harford, Prince Georges, Charles, Calvert, St. Mary's, Cecil, Kent, Dorchester (subfossil), D. C.

GLYPHYALINIA CUMBERLANDIANA (Clapp). Garrett.

GLYPHYALINIA WHEATLEYI (Bland). Frederick.

GLYPHYALINIA RADERI (Dall). Allegany. Known only from this county.

GLYPHYALINIA NIOADSI (Pilsbry). Garrett, Allegany, Washington, Frederick, Carroll, Baltimore, Harford, Charles, Cecil. Mature examples of this species may be found in early Autumn, when most species in the genus are still juveniles.

GLYPHYALINIA INDENTATA (Say). Garrett, Allegany, Washington, Frederick, Montgomery, Carroll, Howard, Baltimore, Baltimore city, Harford, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Cecil, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset, D. C.

GLYPHYALINIA SCULPTILIS (Bland). Garrett.

GLYPHYALINIA SOLIDA H. B. Baker. Garrett, Allegany, Washington, Frederick, Carroll, Baltimore, Baltimore city, Harford, Prince Georges, Anne Arundel, Charles, St. Mary's, Cecil, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset, D. C. This species is more widespread than most people think. Specimens in the N.M.C. collection range from Ontonagon County, Michigan, south to southern Louisiana, and east to Delaware and northern Florida.

GLYPHYALINIA LUTICOLA Hubricht. Frederick, Howard, Baltimore, Baltimore city, Harford, Anne Arundel, Charles, Cecil, Dorchester, Wicomico. Not previously reported north of coastal North Carolina.

MESOMPHIX CUPREUS (Rafinesque). Garrett, Allegany, Washington (Allegheny ridges), Harford (Susquehanna valley), Cecil (Susquehanna valley).

MESOMPHIX PERLAEVIS (Pilsbry). Garrett. This species has been frequently confused with *M. vulgatus* H. B. Baker.

MESOMPHIX INORNATUS (Say). Garrett, Allegany.

PARAVITREA MULTIDENTATA (Binney). Garrett Allegany.

PARAVITREA LAMELLIDENS (Pilsbry). Garrett.

PARAVITREA, new species. Garrett.

HAWAIIA MINUSCULA (Binney). Garrett, Allegany, Washington, Frederick, Carroll,

Howard, Baltimore, Baltimore city, Harford, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Cecil, Kent, Queen Anne's, Caroline, Talbot, Dorchester, Wicomico, Worcester, Somerset, D. C.

VENTRIDENS SUPPRESSUS (Say). Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Harford, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Cecil, Kent, Queen Anne's, D. C. This species is quite rare on the Delmarva Peninsula.

VENTRIDENS VIRGINICUS Vanatta, Garrett, Allegany, Washington (Allegheny ridges). I have found this species living with *V. suppressus* several times in Washington County, as well as at several stations in Virginia.

VENTRIDENS GULARIS CERINOIDEUS (Anthony). Howard, Montgomery, St. Mary's, Queen Anne's. It is likely that this species was introduced to the Piedmont. It is very rare on the Coastal Plain, where it is at the northern periphery of its range.

VENTRIDENS DEMISSUS (A. Binney). Garrett.

VENTRIDENS LIGERUS (Say). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Harford, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Cecil, Queen Anne's, Talbot, Dorchester, Wicomico, D. C. A sinistral specimen was found at Hagerstown, Washington Co.

VENTRIDENS INTERTEXTUS (Binney). Garrett, Allegany, Washington (Allegheny ridges), Harford, (Deer Creek and Susquehanna valleys), Cecil (Susquehanna valley).

ZONITOIDES NITIDUS (Müll.). Garrett, Baltimore city (only in marsh of Patapsco estuary).

ZONITOIDES ARBOREUS (Say). All counties, D. C.

STRIATURA MILIUM (Morse). Garrett, Allegany, Washington, Frederick, Baltimore, Harford, Prince Georges, Calvert. East of the Blue Ridge this species is confined to cool, wet, shaded ravines.

STRIATURA MERIDIONALIS (Pilsbry & Ferriss). Washington, Frederick, Harford, Howard, Anne Arundel, Prince Georges, Calvert, Charles, St. Mary's, Cecil, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset.

STRIATURA FERREA Morse. Garrett, Allegany, Frederick, Prince Georges, Calvert. East of the Blue Ridge this species is confined to cool, wet ravines with traces of Appalachian flora.

STRIATURA EXIGUA (Stimpson). Garrett, Allegany.

ANGUISPIRA ALTERNATA (Say). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Harford, Calvert, Cecil, Talbot, Dorchester, Worcester, D. C. This species is not common on the Coastal Plain.

ANGUISPIRA FERGUSONI (Bland). Frederick, Montgomery, Howard, Baltimore, Harford, Prince Georges, Charles, Cecil, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Somerset, D. C. This species is often associated with *A. alternata*. It is more common on the Coastal Plain.

ANGUISPIRA CLARKI Vanatta, Garrett. This species has not been seen from the type locality since it was originally collected over thirty years ago, although several persons have searched for it. I found a single, fresh specimen in a limestone talus in Pendleton County, West Virginia, which is slightly larger than the type. It differs from *A. fergusonii*, to which it is most closely related, by having more tightly coiled whorls, a higher, more dome-shaped spire, and deeper sutures. Depauperate examples of *fergusonii* have one whorl less. See Pilsbry, 1948, p. 585.

ANGUISPIRA, new species. Garrett.

DISCUS PATULUS PATULUS (Deshayes). Garrett, Allegany, Harford (Susquehanna valley), Cecil (Susquehanna valley).

DISCUS CRONKHITTEI (Newcomb). Garrett, Allegany, Washington, Frederick, Carroll, Baltimore, Baltimore city, Harford, Howard, Montgomery (R. W. Jackson). About thirty years ago, this species was found near a culvert in Somerset County by R. W. Jackson. This station was visited by the author in 1968 and no specimens were found. It is likely that the colony is extinct.

DISCUS CATSKILLENSIS Pilsbry, Garrett. Seen only in the dry sugar maple forest at the summit of Savage Mountain.

HELICODISCUS PARALLELUS (Say). All counties, D. C.

HELICODISCUS SHIMEKI Hubricht, Garrett.

HELICODISCUS NOTIUS NOTIUS Hubricht, Allegany, Queen Anne's, Talbot, Dorchester. Both this species and the preceding one have been found with *H. parallelus* infrequently.

HELICODISCUS SINGLEYANUS (Pilsbry). Washington, Frederick, Carroll, Baltimore, Baltimore city, Talbot, Wicomico, Worcester.

HELICODISCUS INERMIS H. B. Baker. Baltimore, Baltimore city, Talbot, Dorchester, Wicomico, D. C. Found with *singleyanus* at several stations.

HELICODISCUS JACKSONI Hubricht, Garrett, Allegany, Washington, Frederick, Carroll, Howard, Baltimore, Harford, Talbot (subfossil), Dorchester (subfossil and fresh), Wicomico (drift). In museums this species is often confused with *Hawaitia minuscula*, from which it differs by having a proportionally wider umbilicus which is more shallow, whorls of smaller calibre, and a smoother shell. It is often found with *Hawaitia*, as well as with the preceding two species, and is quite easy to sort. The animal is pure white, and appears to be blind.

PUNCTUM MINUTISSIMUM (Lea). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Harford, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Cecil, Kent, Queen Anne's, Dorchester, Wicomico, Worcester.

PUNCTUM VITREUM H. B. Baker. Allegany, Washington, Harford.

PUNCTUM SMITHI Morrison. Washington, Frederick, Prince Georges, Charles, Calvert, St. Mary's.

ARION FASCIATUS (Nilsson). Garrett, Baltimore, Baltimore city.

ARION CIRCUMSCRIPTUS Johnston. Baltimore city. Externally, this species differs from the preceding, which is more common, by being fulvous gray on the back, with no trace of yellow at the sides. Internally, it differs by having a much larger genital atrium, and by having slightly different proportions in the size of other anterior genital structures. The differences between these species were discussed in detail by Lohmander (1937) and Hudec (1960). I am indebted to Mr. M.O.A. Krupka, of the Foreign Languages Division of the Department of the Secretary of State, Ottawa, for the translation of Hudec's paper from Czech to English.

ARION HORTENSIS Fér. Baltimore city.

ARION SUBFUSCUS (Drap.). Baltimore, Baltimore city, D. C.

ARION INTERMEDIUS (Normand). Garrett, Baltimore, Baltimore city, Talbot, Somerset. This species has not been reported before from Maryland.

DEROCERAS LAEVE (Müll.). All counties, D. C.

DEROCERAS AGRESTE (Linn.). Baltimore, Baltimore city, Talbot.

DEROCERAS RETICULATUM (Müll.). Garrett, Carroll, Baltimore, Baltimore city, Harford, Somerset.

LIMAX POIRIERI Mabille. Montgomery, Baltimore (greenhouse), Anne Arundel, Queen Anne's, Caroline, Talbot, Dorchester, Worcester, Somerset. Published records for *Limax marginatus* Müll. are based upon this species (Grimm, 1959b, p. 21; 1960, p. 13).

LIMAX MAXIMUS Linn. Carroll, Baltimore, Baltimore city, Prince Georges, Charles, Cecil, Queen Anne's, Wicomico, Worcester, Somerset.

LIMAX FLAVUS Linn. Baltimore city, Kent, D. C. (A.N.S.P.).

MILAX GAGATES (Drap.). Somerset.

PHILOMYCUS FLEXUOLARIS Rafinesque. Garrett, Allegany. The Carroll County record (Grimm, 1959a, p. 125) is based upon *P. togatus*. *P. flexuolaris* is restricted to the cool, wet woods of the higher Appalachians.

PHILOMYCUS TOGATUS (Gould). Garrett, Allegany, Washington, Frederick, Carroll,

Howard, Montgomery, Baltimore, Harford, Prince Georges, Anne Arundel, Cecil. This species has been found on the Coastal Plain only near the Fall Line. Occasionally in ravines on the Piedmont, it can be found with *P. carolinianus*. I have observed no intergradation between *togatus* and *carolinianus* where they occur together. Some colonies of *togatus* exhibit faint, irregular traces of a double row of dorsal black spots, but the color pattern on the mantle of these examples is not as bold as that of *carolinianus*, being washed with grayish brown, not blotched with black.

PHILOMYCUS CAROLINIANUS (Bosc). Washington, Frederick, Montgomery, Howard, Baltimore, Harford, Anne Arundel, Prince Georges, Charles, Calvert, St. Mary's, Cecil, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset. One-third of the specimens collected at Bodkin Neck, Anne Arundel Co., were albinos. The background color of the mantle in these examples was light creamy yellow, and the dorsal pattern was represented by a double row of bright lemon yellow spots. In alcohol they faded to a dull creamy white shade. The remainder of this population was normally pigmented.

PALLIFERA MUTABILIS Hubricht. Frederick, Montgomery, Howard, Baltimore, Harford, Prince Georges, Charles, St. Mary's, Cecil, Kent, Talbot, Wicomico, Worcester.

PALLIFERA DORSALIS (Binney). Garrett, Allegany, Washington, Frederick, Montgomery, Cecil. The Carroll County record (Grimm, 1959a, p. 125) is based upon *P. secreta*.

PALLIFERA SECRETA (Cockerell). Allegany, Frederick, Carroll, Howard, Baltimore, Harford, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Cecil, Kent, Caroline.

PALLIFERA MEGAPHALLICA Grimm. Carroll, Baltimore, Prince Georges, Anne Arundel, Charles, Calvert, St. Mary's, Kent, Caroline, Queen Anne's, Dorchester, Wicomico, Worcester, Somerset.

OXYLOMA EFFUSA (Pfeiffer). Anne Arundel, Charles (U.S.N.M.), Kent, Cecil, Caroline, Worcester.

OXYLOMA SUBEFFUSA Pilsbry. Anne Arundel, Calvert, Harford, Cecil, Caroline, D. C. (U.S.N.M.). Although there is intergradation in shell shape between this and the preceding species, they may be easily distinguished by the appearance and habits of the animal. *O. effusa* has a pale yellowish animal, and the mantle is marked with widely spaced black blotches and streaks, concentrated at the edge. It becomes mature in mid to late summer, and climbs marsh vegetation. *O. subeffusa* has a gray animal, and the mantle is suffused with gray as well as being marked with black streaks near the edge. It becomes mature in early spring, and dies off before the onset of summer. It lives on mud or at the bases of reeds, and climbs vege-

tation rarely. The shell of *O. effusa* is quite clean, whereas that of *subeffusa* is usually coated with mud. I have not dissected large enough series to come to any conclusions about anatomical differences. Both species were found at Leon, Anne Arundel County, mature in different seasons.

(*OXYLOMA DECAMPI GOULDI*) Pilsbry. Museum specimens so labeled from the Chesapeake Bay region appear to be mostly *O. subeffusa* or *Catinella hubrichti*. Examination and dissection of topotypes of *O. decampi decampi* (Tryon) from Marshall, Michigan, reveal it to be a synonym of *O. retusa* (Lea). The peculiar coloration of the type is likely to be due to staining from the body juices of the animal. The status of *gouldi* is still uncertain.

SUCCINEA OVALIS Say. Garrett. Allegany, Washington, Frederick, Howard, Baltimore, Harford, Anne Arundel, Prince Georges, Calvert, Cecil, Caroline, Worcester.

SUCCINEA WILSONI Lea. Harford, Baltimore, Baltimore City, Anne Arundel, Charles, Calvert, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Somerset. This species prefers marshes which are somewhat saline. In scattered, comparatively fresh, tidal marshes, it assumes the form of *S. pronophobus* Pilsbry. Many intermediate colonies were found, and no anatomical differences were observed between Chesapeake Bay region colonies or between topotypes of the two. More study is needed in this group.

SUCCINEA CONCORDIALIS Gould. Baltimore (greenhouse).

SUCCINEA INDIANA Pilsbry. Talbot, Queen Anne's. Only in the drainage of the Wye River.

(*SUCCINEA AVARA*) Say. Records for this 'species' are based upon *Catinella vermeta* or *C. oklahomarum*.

CATINELLA VERMETA (Say). Frederick, Baltimore, Harford, Anne Arundel, Prince Georges, Charles, Cecil, Kent, Caroline, Queen Anne's, Dorchester, Worcester.

CATINELLA OKLAHOMARUM (Webb). Garrett, Washington, Frederick, Howard, Harford, St. Mary's, Cecil, Dorchester, Wicomico, Worcester, Somerset.

(*CATINELLA PINICOLA*) Grimm. A synonym of *C. oklahomarum*.

CATINELLA HUBRICHTI Grimm. Harford, Anne Arundel, St. Mary's, Cecil, Caroline, Wicomico, Worcester, Somerset.

STROBILOPS LABYRINTHICA LABYRINTHICA (Say). Allegany, Washington, Frederick.

STROBILOPS LABYRINTHICA PARIETALIS Pilsbry. Howard, Baltimore, Anne Arundel, Prince Georges, Charles, Calvert, St. Mary's, Cecil, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset, D. C.

STROBILOPS AENEA Pilsbry. Garrett, Washington, Howard, Baltimore, Harford, Char-

les, Calvert, St. Mary's, Cecil, Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Worcester, Somerset, D. C.

GASTROCOPTA CONTRACTA (Say). All counties D. C.

GASTROCOPTA ARMIFERA (Say). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Baltimore, St. Mary's, Talbot, Dorchester, D. C.

GASTROCOPTA PENTODON (Say). Garrett, Allegany, Washington, Frederick, Montgomery, Baltimore, Baltimore city, Harford, Anne Arundel, Prince Georges, St. Mary's, Cecil, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester.

GASTROCOPTA TAPPANIANA (C. B. Adams). Washington, Prince Georges, Charles, Calvert, Caroline, Queen Anne's, Dorchester, Wicomico, Worcester, Somerset.

GASTROCOPTA CORTICARIA (Say). Allegany, Washington, Harford, Dorchester (subfossil).

GASTROCOPTA PROCERA (Gould). Allegany, Washington, Frederick, Carroll, Howard, Baltimore, Prince Georges, Charles, Cecil (A.N.S.P.), Talbot, Dorchester, Wicomico, Somerset.

GASTROCOPTA CRISTATA (Pilsbry & Vanatta). Washington (Chewsville), Talbot, Dorchester, Wicomico, Worcester, Somerset. Also found in Delaware (Newcastle and Sussex Counties) and peninsular Virginia. The occurrence of this species, which is common in the southwestern and south-central states, so far outside of its known range is puzzling. It is a common wasteground species, but has been found both living and subfossil in the shell mound at Elliott, Dorchester County. The age of this mound is unknown. To my knowledge, no populations of this species have been found between Maryland and Kansas.

GASTROCOPTA PELLUCIDA HORDEACELLA (Pilsbry). Dorchester (both living and subfossil in shell mound).

PUPILLA MUSCORUM (Linn.). Frederick, Carroll, Howard.

PUPOIDES ALBILABRIS (C. B. Adams). Allegany, Washington, Frederick, Carroll, Howard, Baltimore, Baltimore city, Prince Georges, Anne Arundel, Charles, Cecil, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset, D. C.

VERTIGO OSCARIANA Sterki. Dorchester (subfossil).

VERTIGO MILIUM Gould. Washington, Charles, Calvert, Cecil, Dorchester, Wicomico, Worcester, Somerset.

VERTIGO ORALIS Sterki. Talbot, Worcester. Not previously known north of coastal North Carolina.

VERTIGO OVATA OVATA (Say). Garrett, Baltimore, Baltimore city, Harford, Anne Arundel, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset, D. C.

VERTIGO TESKEYAE Hubricht. Queen Anne's, Dorchester (subfossil).

(*VERTIGO VENTRICOSA*) (Morse). The Carroll County record (Grimm, 1959a, p. 126) is based upon stout *V. pygmaea*.

VERTIGO PYGMAEA (Drap.). Garrett, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Prince Georges, Anne Arundel, Kent, Queen Anne's, Talbot, Dorchester, Wicomico, Worcester, Somerset. An anthropochorous calciphile, common on wasteground and in culverts. It may not be native.

VERTIGO TRIDENTATA Wolf. Allegany, Washington, Frederick, Carroll, Baltimore, Dorchester (subfossil).

VERTIGO GOULDI GOULDI Binney. Washington, Frederick, Harford.

VERTIGO BOLLESIANA (Morse). Dorchester (subfossil).

COLUMELLA cf. *EDENTULA* (Drap.). Garrett, Allegany, Washington, Frederick, Carroll, Harford, Charles, St. Mary's, Cecil, Kent. Most specimens from southeastern North America are smaller and more tapered than examples from Europe. This species is rare and local in Maryland, occurring in small numbers in deep leaf litter.

VALLONIA PULCHELLA (Müll.). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Baltimore, Baltimore city, Harford, Cecil, Kent, Talbot, Dorchester, Wicomico, Somerset. Anthropochorous.

VALLONIA EXCENTRICA Sterki. Garrett, Allegany, Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Prince Georges, Anne Arundel, Charles, St. Mary's, Kent, Queen Anne's, Caroline, Talbot, Dorchester, Wicomico, Worcester, Somerset, D. C. Anthropochorous. Both *pulchella* and *excentrica* have rounded and excentric forms. They differ, however, in size and sculpture, *pulchella* being the larger, rougher species. Adult *pulchella* always have a reflected lip, whereas that of *excentrica* is expanded and thickened. The differences between these species have been discussed by Hubendick (1950).

VALLONIA COSTATA (Müll.). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Charles, Harford, Kent, Talbot, Dorchester, Wicomico, Somerset, D. C. Anthropochorous.

VALLONIA PERSPECTIVA Sterki. Allegany, Washington, Talbot, Dorchester, Wicomico. On the Coastal Plain, this species appears to be confined to the vicinity of shell mounds.

CIONELLA LUBRICA (Müll.). Garrett, Allegany, Washington, Frederick, Carroll, Howard, Montgomery, Baltimore, Baltimore city, Charles, Harford, Kent, Queen Anne's, Caroline, Talbot, Wicomico, Somerset, D. C. East of Garrett County this species is synanthropic.

CIONELLA LUBRICELLA (Porro). Montgomery, Howard, Baltimore, Queen Anne's, Wicomico, Somerset. Synanthropic in Maryland. This widespread species has been reported previously from North America only as a Pleistocene fossil in southern Texas

(Hubricht, 1962, pp. 1-3). In that paper it was called *C. lubrica* f. *exigua* Menke.

CIONELLA MORSEANA Doherty. Garrett, Allegany, Washington, Frederick, Harford (coves in Susquehanna valley).

CARYCHIUM EXIGUUM (Say). Carroll, Baltimore, Harford, Anne Arundel, Calvert, Queen Anne's.

CARYCHIUM EXILE EXILE H. C. Lea. Garrett, Allegany, Washington, Frederick, Montgomery, Baltimore, Harford, Calvert, St. Mary's. Restricted to cool, shaded ravines on the Coastal Plain.

CARYCHIUM cf. *CANADENSE* Clapp. Washington, Frederick, Harford.

HENDERSONIA OCCULTA (Say). Allegany (U.S.N.M.). Represented by specimens collected many years ago. It has been found at several stations in West Virginia immediately across the Potomac, so it is likely to occur in the county.

POMATIOPSIS LAPIDARIA (Say). Harford, Anne Arundel, Cecil, Caroline, Wicomico.

REFERENCES

- GRIMM, F. Wayne (1959a) Land snails of Carroll County, Maryland. -- *Nautilus* 72(4): 122-127.
- (1959b) Land snails from Maryland and Virginia. -- *Nautilus* 73(1): 21-22.
- (1960) Two new succineids from Maryland, with notes on *Catinella vermeta*. -- *Nautilus* 74(1): 9-15.
- (1968) A note on *Catinella oklahomorum*. -- *Nautilus* 81(3): 84-85.
- HUBENDICK, Bengt (1950). The validity of *Vallonia excentrica* Sterki. -- *Proc. Malac. Soc. London* 28: 75-78.
- HUBRICHT, Leslie (1953) Land snails of the southern Atlantic Coastal Plain. -- *Nautilus* 66(4): 114-125.
- (1962) Land snails from the Pleistocene of southern Texas. -- *Sterkiana* 7: 1-3.
- HUDEEC, Vladimir (1960) Rozděl na pohlavních orgánech plzáků *Arion circumscriptus* a *Arion fasciatus* (Nilss.). -- *Časopis Národního Muzea (Prague)* 129: 204-205.
- LOHMANDER, H. (1937) Über die nordischen Formen von *Arion circumscriptus* Johnston. -- *Acta Soc. Fauna Flora Fennica*: 90-112.
- PILSBRY, H. A. (1939-1948) Land Mollusca of North America (North of Mexico). -- *Ac. Nat. Sci. Phila.*, Monogr. 3, 2 vols.