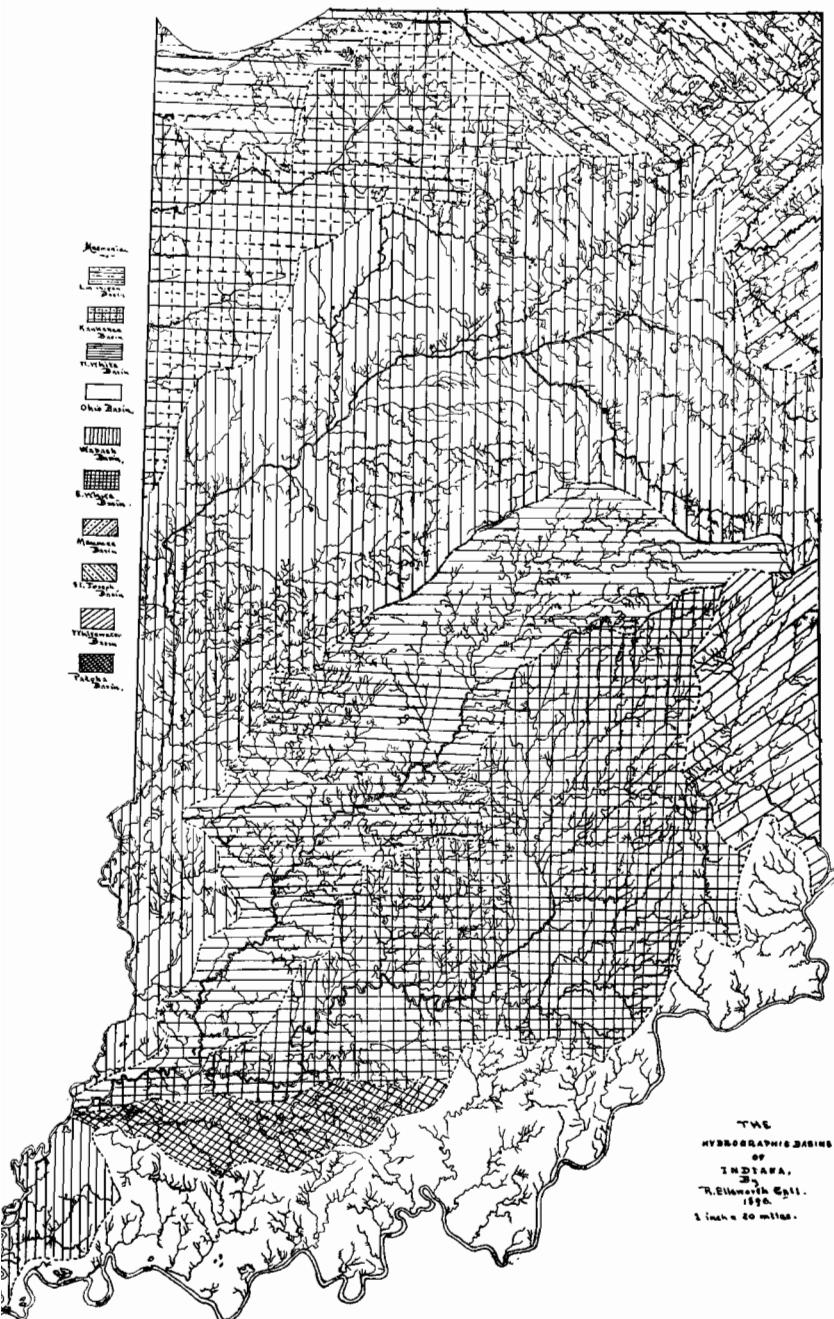


PLATES FOR PAPER ON
THE MOLLUSCA OF INDIANA.

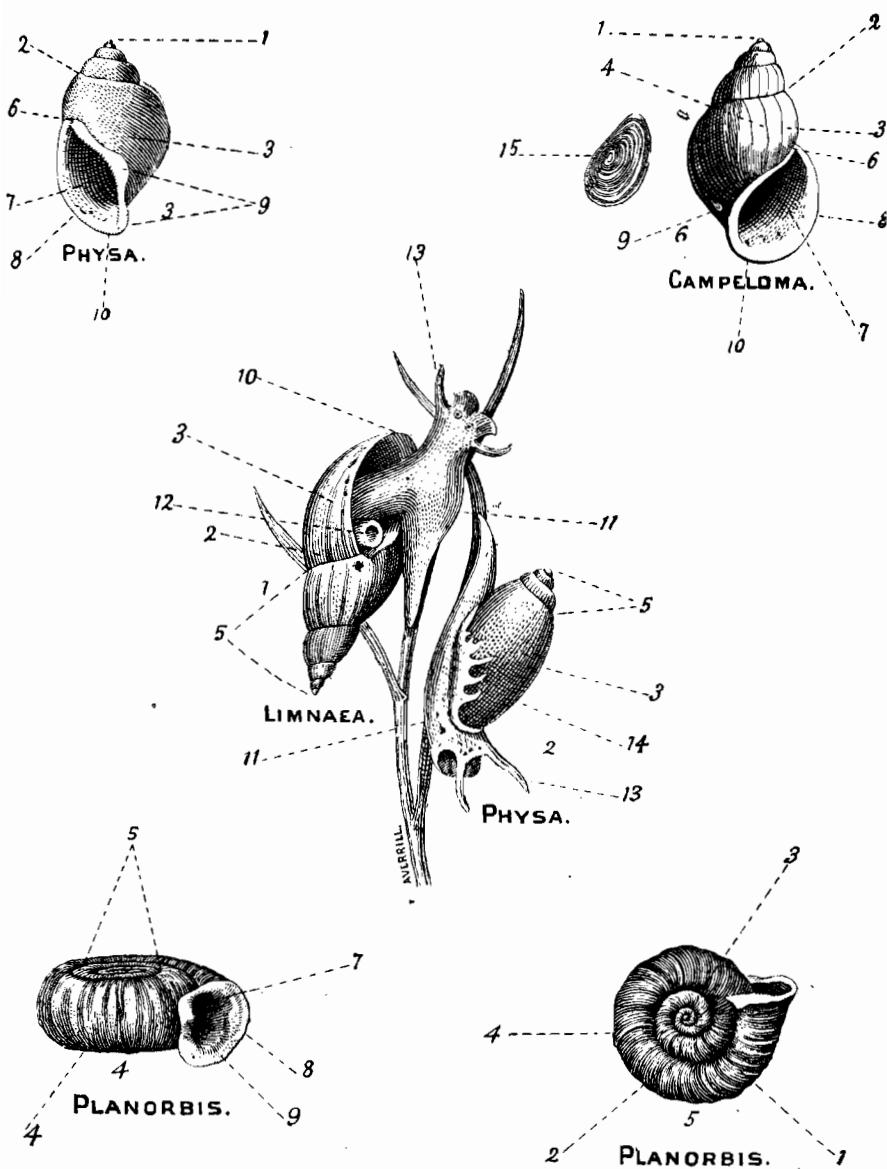


HYDROGRAPHIC MAP.

**EXPLANATION OF DESCRIPTIVE TERMS EMPLOYED
IN FRESH WATER UNIVALVES.**

PLATE 2.

- | | |
|--------------------------------|---|
| 1. Apex. | 9. Columella. |
| 2. Suture. | 10. Inferior angle of margin or peri-stome. |
| 3. Body whorl. | 11. Disk, or foot. |
| 4. Lines of growth. | 12. Breathing pore. |
| 5. Spire. | 13. Tentacle. |
| 6. Superior angle of aperture. | 14. Mantle, fimbriated in Physa. |
| 7. Aperture. | 15. Operculum. |
| 8. Peristome. | |



EXPLANATION OF DESCRIPTIVE TERMS EMPLOYED IN UNIO.

PLATE 3.

- | | |
|-----------------------------|--|
| 1. Umbone. | 12. Lateral hinge teeth. |
| 2. Lunule. | 13. Anterior or cardinal hinge teeth. |
| 3. Ligament. | 14. Anterior retractor pedis impression. |
| 4. Line of growth. | 15. Anterior adductor cicatrix or scar. |
| 5. Posterior umbonal slope. | 16. Protractor pedis muscular impres- |
| 6. Posterior margin. | sion. |
| 7. Sulcus, or emargination. | 17. Posterior retractor pedis impres- |
| 8. Ventral margin. | sion. |
| 9. Anterior margin. | 18. Posterior adductor impression. |
| 10. Anterior umbonal slope. | 19. Pallial line. |
| 11. Embryonic shell. | 20. Cavity of the beaks, or umbones. |
| | 21. Dorsal margin. |

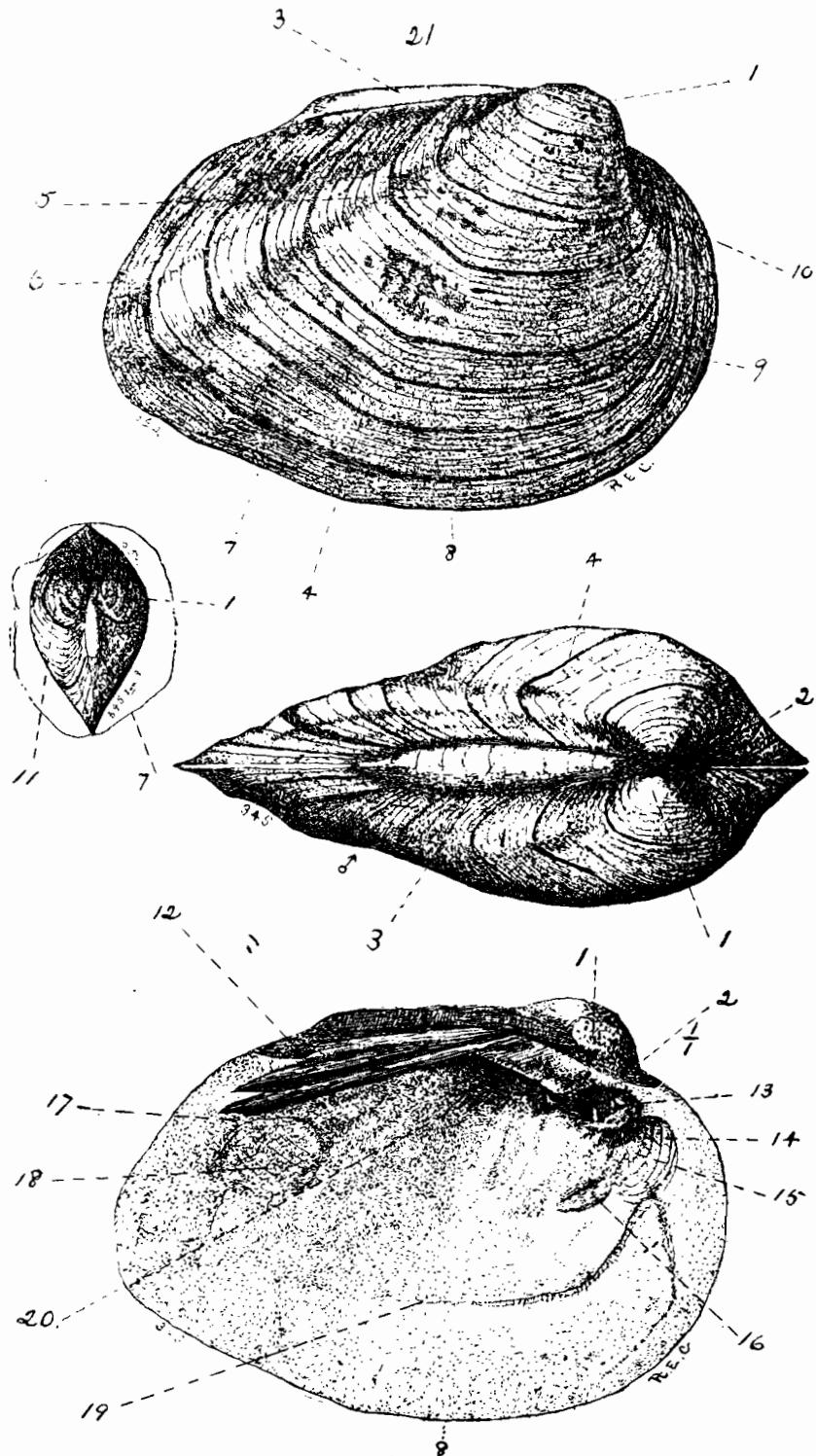


PLATE 4.

	Page.
Fig. 1. <i>Zonites arboreus</i> Say	375
Fig. 2. <i>Zonites (Conulus) fulvus</i> Draparnaud.....	376
Fig. 3. <i>Patula striatella</i> Anthony.....	381
Figs. 4 and 7. <i>Macrocyklis (Selenites) concava</i> Say	371
Figs. 5 and 6. <i>Helicodiscus lineatus</i> Say	382
Fig. 8. <i>Ferussacia subcylindrica</i> Linnaeus	401
Fig. 9. <i>Vallonia pulchella</i> Müller.....	395
Fig. 10. <i>Zonites friabilis</i> Binney.....	373
Fig. 11. <i>Zonites ligerus</i> Say	374
Fig. 12. <i>Zonites intertextus</i> Binney	374
Fig. 13. <i>Zonites fuliginosus</i> Griffith.....	373
Figs. 14 and 15. <i>Zonites inornatus</i> Binney.....	375
Fig. 16. <i>Zonites limatulus</i> Ward	376
Fig. 17. <i>Zonites (Gastrodonta) internus</i> Say	377
Fig. 18. <i>Limax campestris</i> Binney.....	371
Fig. 19. <i>Tebennophorus dorsalis</i> Binney.....	379
Fig. 20. <i>Patula solitaria</i> Say	379

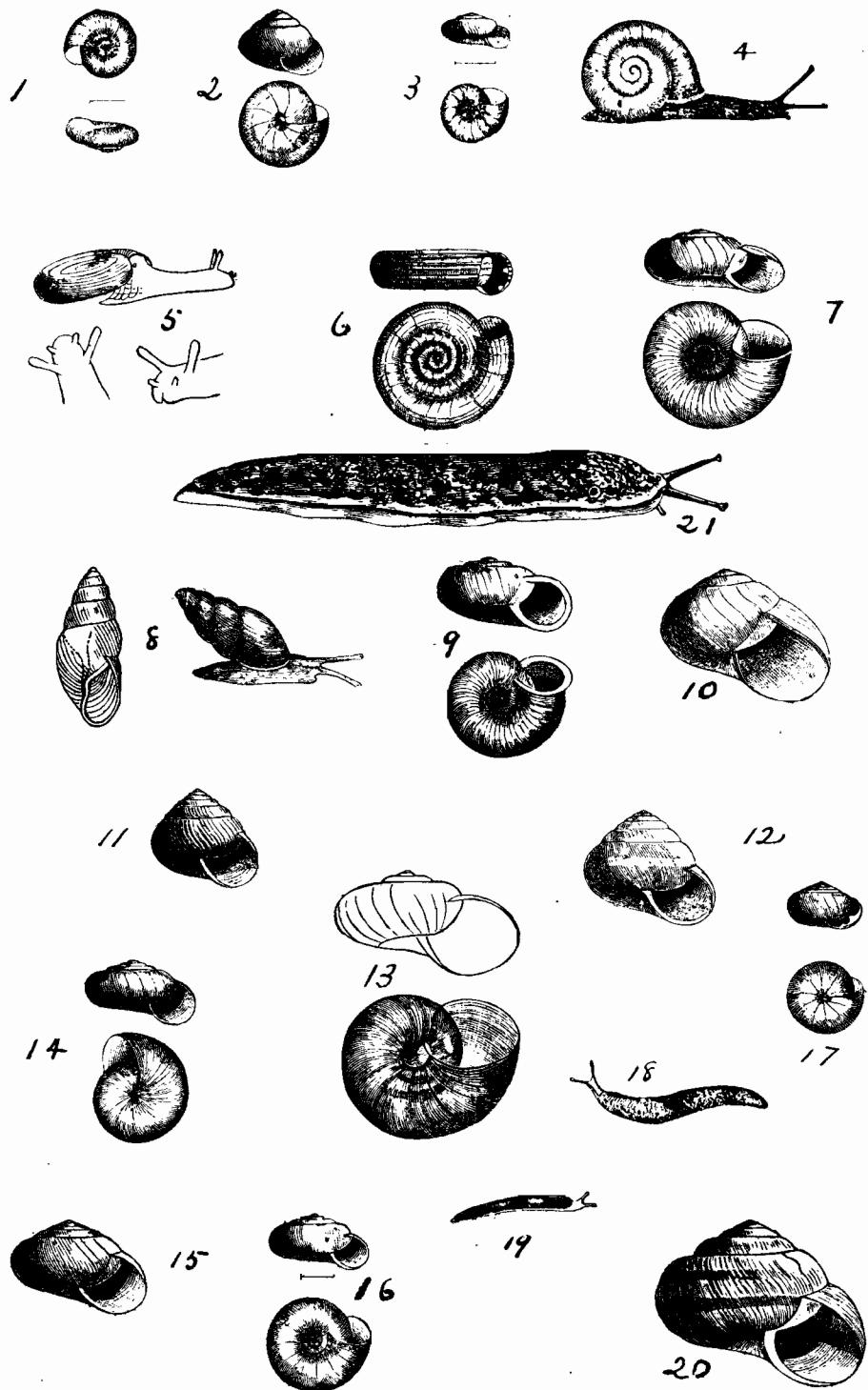


PLATE 5.

	Page.
Fig. 1. <i>Patula solitaria</i> Say. And animal.....	379
Figs. 2-3. <i>Patula alternata</i> Say.....	380
Fig. 4. <i>Patula perspectiva</i> Say	381
Figs. 5, 5a. <i>Strobila labyrinthica</i> Say	382
Fig. 6. <i>Stenotrema stenotremum</i> Ferussac.....	383
Fig. 7. <i>Stenotrema hirsutum</i> Say. Epidermal hairs removed.....	383
Fig. 8. <i>Stenotrema monodon</i> Rackett	384
Figs. 9, 9a. <i>Triodopsis palliata</i> Say.....	385
Fig. 10. <i>Triodopsis obstricta</i> Say	386
Figs. 11, 11a, 11b. <i>Triodopsis appressa</i> Say.....	386
Fig. 12. <i>Triodopsis inflecta</i> Say	387
Figs. 13, 13a. <i>Triodopsis tridentata</i> Say. 13a deformed.....	387
Fig. 14. <i>Triodopsis fallax</i> Say.....	388
Figs. 15, 15 a. <i>Mesodon albolabris</i> Say. 15a dentate variety.....	389
Figs. 16, 16a. <i>Mesodon multilineatus.</i> Say	390

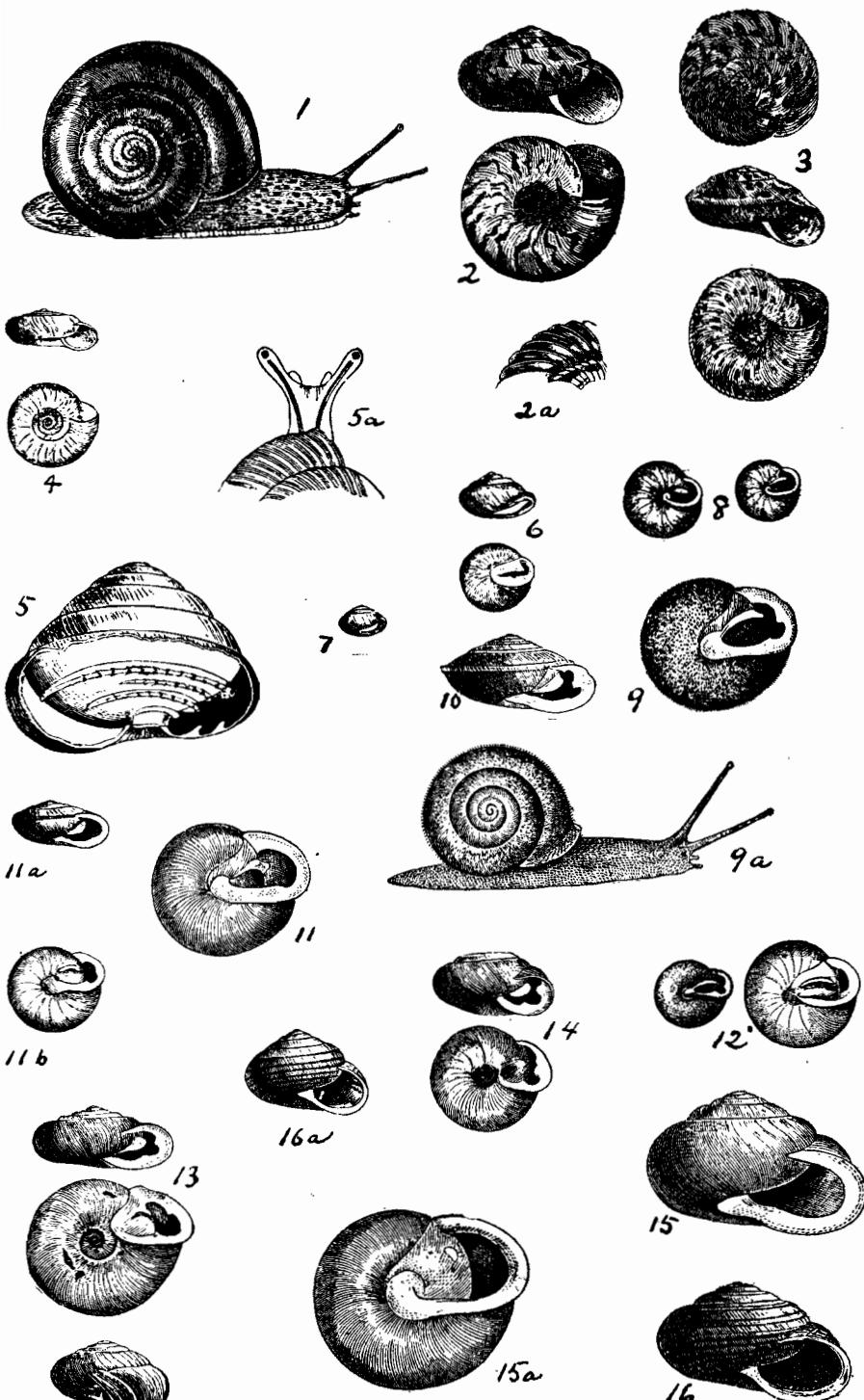


PLATE 6.

	Page.
Fig. 1. <i>Mesodon pennsylvanicus</i> Green.....	391
Fig. 2. <i>Mesodon mitchellianus</i> Lea.....	391
Fig. 3. <i>Mesodon elevatus</i> Say.....	392
Fig. 4. <i>Mesodon exoletus</i> Binney.....	393
Figs. 5, 5a, 5b. <i>Mesodon thyroideus</i> Say.....	394
Figs. 6, 6a. <i>Mesodon clausus</i> Say.....	392
Fig. 7. <i>Mesodon profundus</i> Say.....	395
Figs. 8, 8a. <i>Pupilla pentodon</i> Say	396
Fig. 9. <i>Leucochila fallax</i> Say.....	397
Fig. 10. <i>Leucochila contracta</i> Say.....	398
Figs. 11, 11a, 11b, 11c. <i>Leucochila armifera</i> Say.....	397
Figs. 12, 12a, 12b, 12c. <i>Leucochila corticaria</i> Say.....	399
Fig. 13. <i>Isthmia (Vertigo) ovata</i> Say.....	400

•

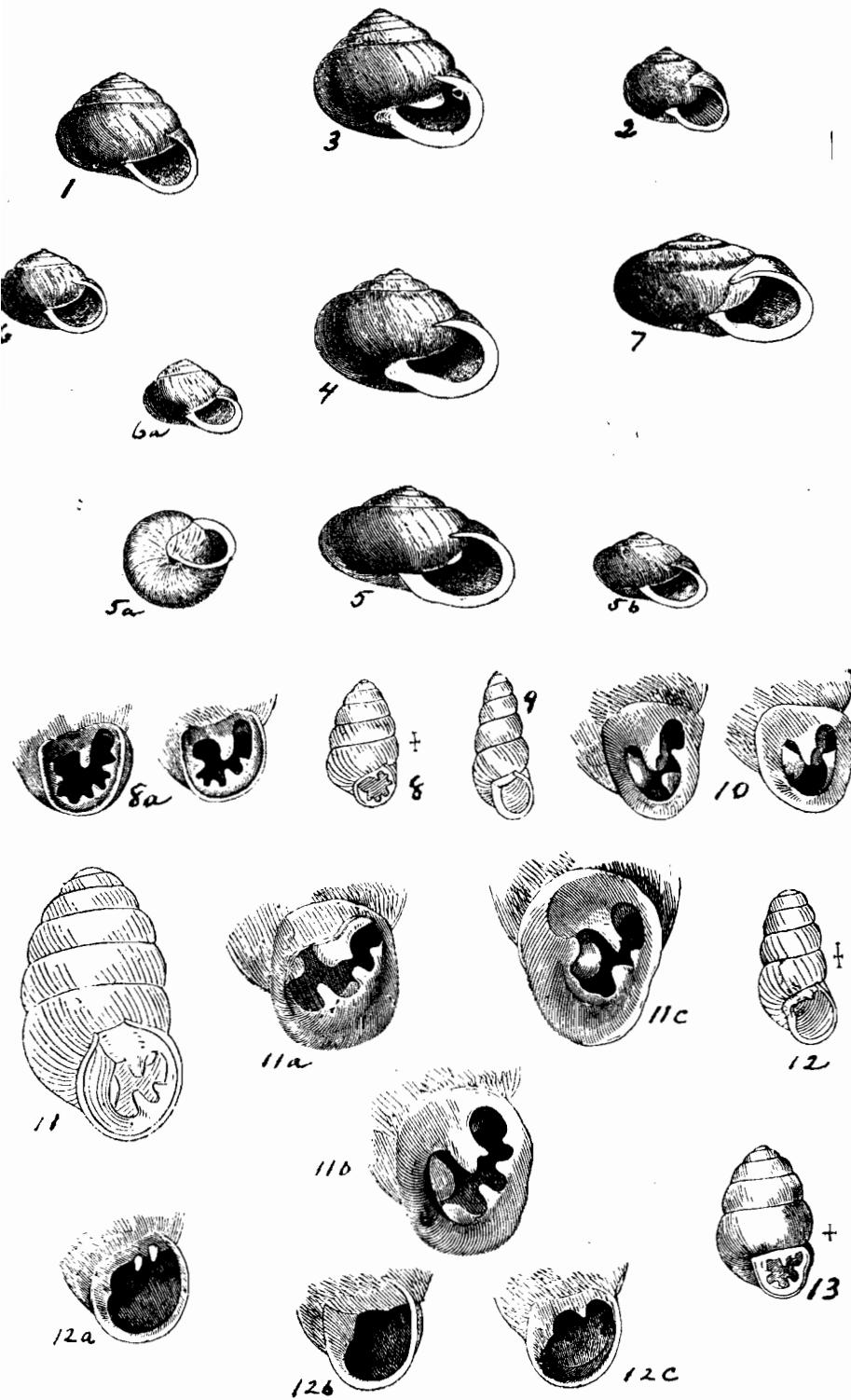


PLATE 7.

	Page.
Fig. 1. <i>Isthmia (Vertigo) ovata</i> Say	400
Fig. 2. <i>Succinea obliqua</i> Say.....	402
Fig. 3. <i>Succinea avara</i> Say.....	402
Fig. 4. <i>Succinea ovalis</i> Say	401
Fig. 5. <i>Limax flavus</i> Linnaeus. Introduced form	372

The remaining figures of this plate are self-explanatory. They all deal with the details of jaw structure, which are believed to be useful for purposes of classification. Only generic forms are here shown.

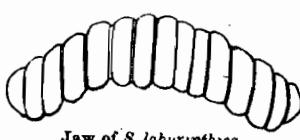
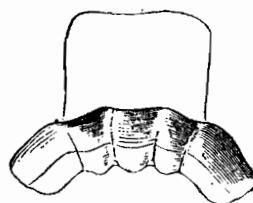
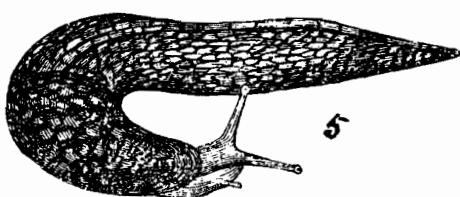
4

Jaw of *Z. arboreus*. (Morse.)

2



3

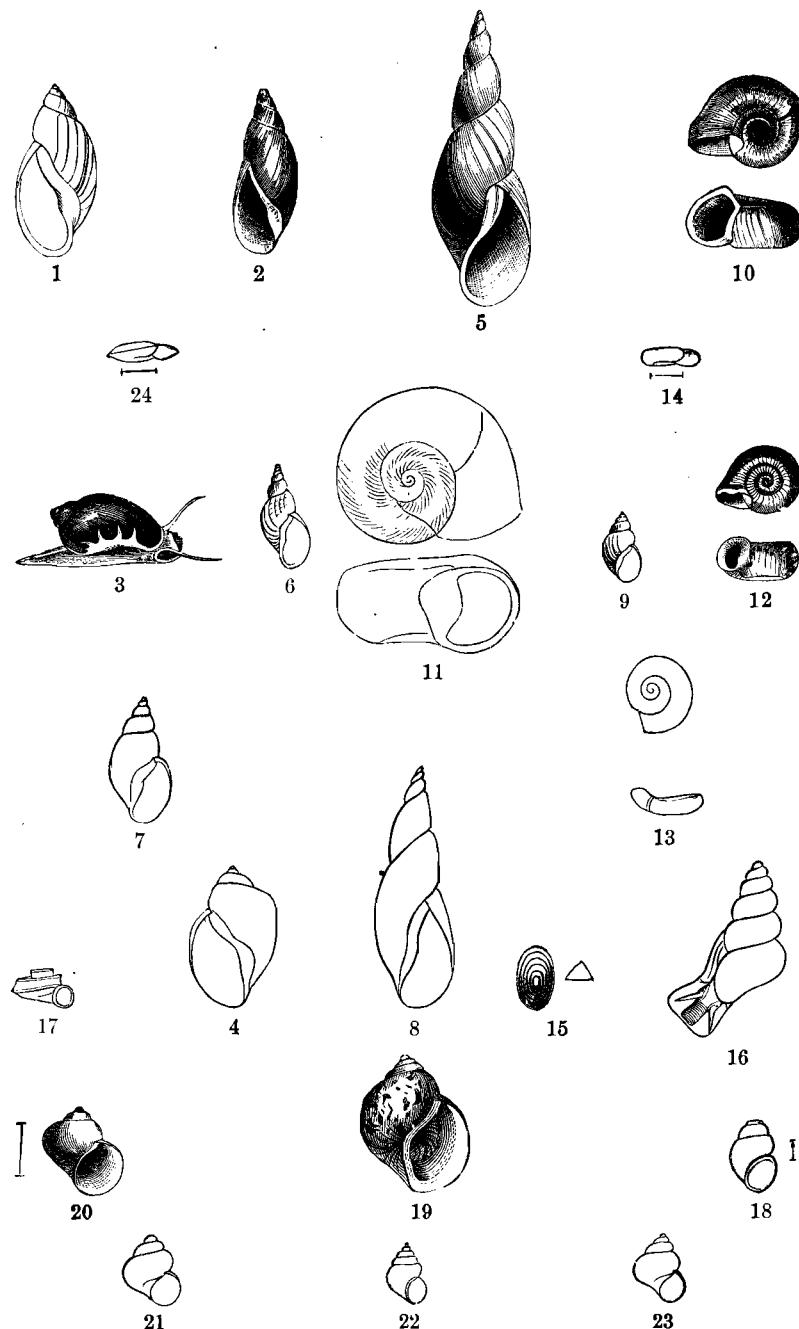
Jaw of *Pupa pentodon*.
(Morse.)Jaw of *lineatus*.Jaw of *F. subcylindrica*.Jaw of *T. appressa*.Jaw of *Vertigo
ovata*. (Morse.)Jaw of *L. flavus*.Jaw of *T. dorsalis*.Jaw of *S. labyrinthica*.Jaw of *S. Totteniana*. (Morse.)

5

Jaw of *S. monodon*. (Morse.)Jaw of *P. striatella*. (Morse.)

PLATE 8.

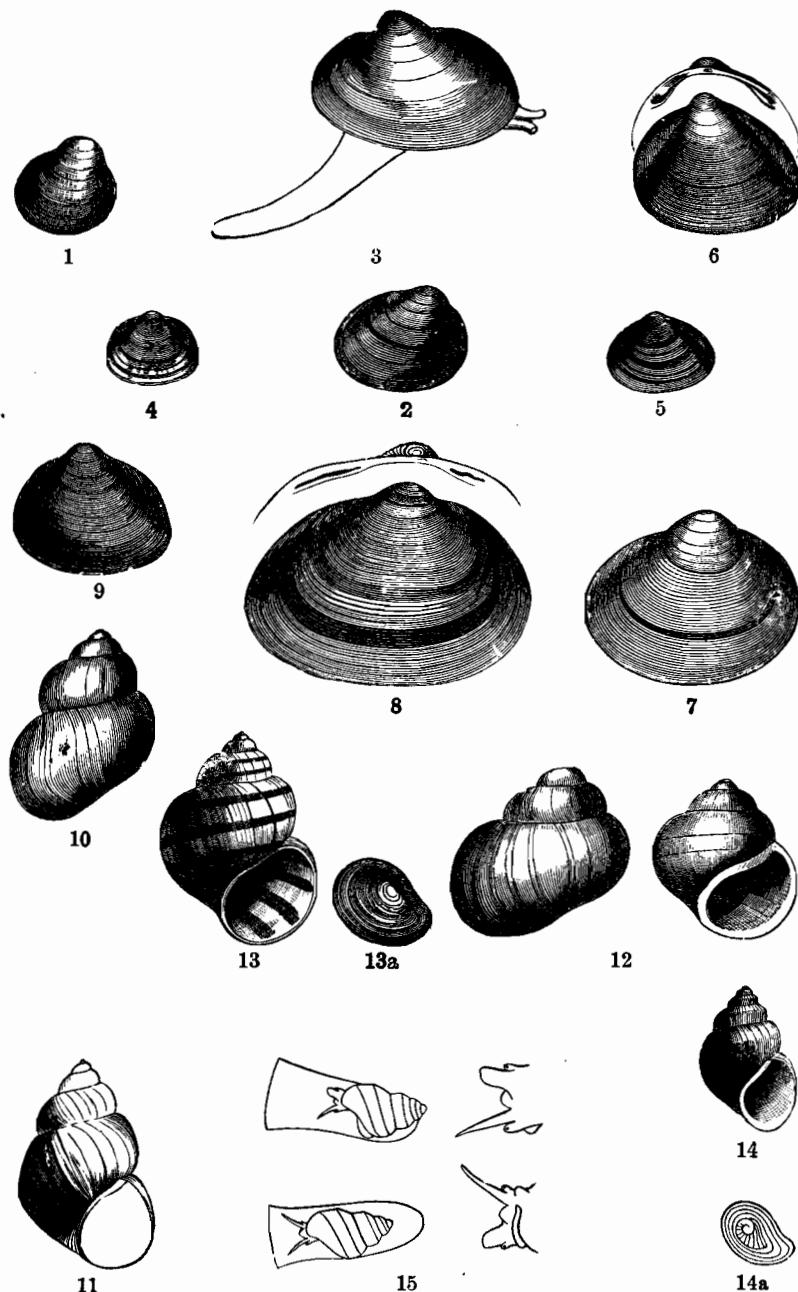
	Page.
Fig. 1. <i>Physa gyrina</i> Say.....	408
Fig. 2. <i>Bulinus hypnorum</i> Linnaeus.....	410
Fig. 3. <i>Physa heterostropha</i> Say. With animal	409
Fig. 4. <i>Physa ancillaria</i> Say.....	409
Fig. 5. <i>Limnophysa palustris</i> Müller.....	406
Fig. 6. <i>Limnophysa desidiosa</i> Say	407
Fig. 7. <i>Limnophysa caperata</i> Say.....	407
Fig. 8. <i>Limnophysa reflexa</i> Say.....	406
Fig. 9. <i>Limnophysa humilis</i> Say.....	408
Fig. 10. <i>Helisoma bicarinata</i> Say.....	411
Fig. 11. <i>Helisoma trivolvis</i> Say.....	411
Fig. 12. <i>Planorbella campanulata</i> Say.....	410
Fig. 13. <i>Gyraulus deflectus</i> Say.....	412
Fig. 14. <i>Gyraulus parvus</i> Say	413
Fig. 15. <i>Ancylus tardus</i> Say.....	413
Fig. 16. <i>Pomatiopsis lapidaria</i> Say.....	416
Fig. 17. <i>Valvata tricarinata</i> Say.....	417
Fig. 18. <i>Bythinella obtusa</i> Lea.....	414
Fig. 19. <i>Somatogyrus integer</i> Say.....	415
Fig. 20. <i>Somatogyrus isogonus</i> Say.....	415
Fig. 21. <i>Amnicola porata</i> Say.....	416
Fig. 22. <i>Amnicola cincinnatensis</i> Anthony.....	416
Fig. 23. <i>Amnicola limosa</i> Say.....	416
Fig. 24. <i>Menetus exacutus</i> Say.....	412

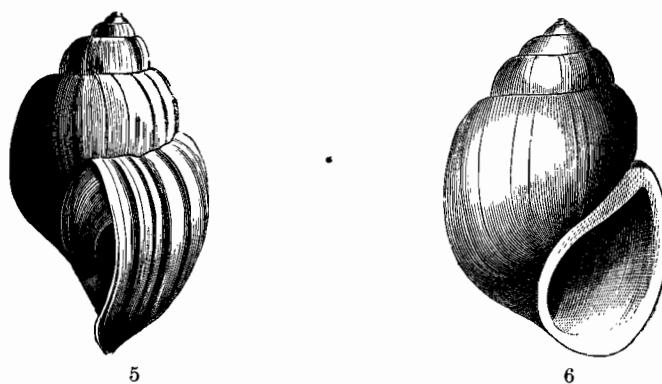
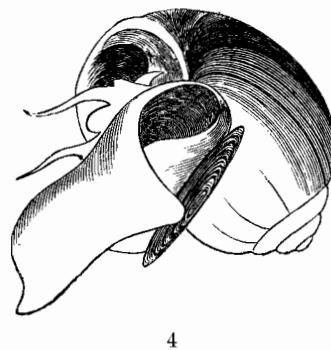
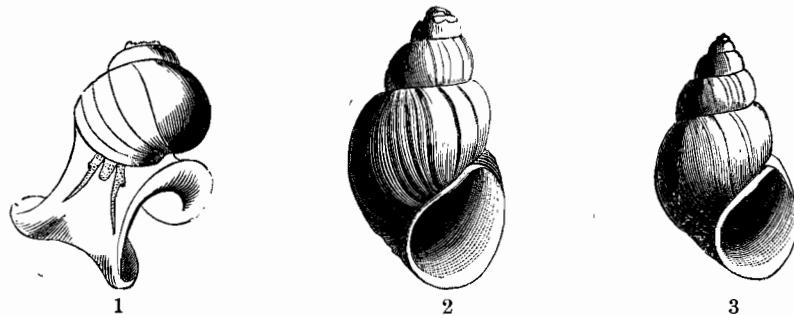


LIMNÆIDÆ, VALVATIDÆ AND RISSOIDÆ.

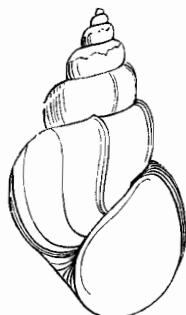
PLATE 9.

	Page.
Fig. 1. <i>Pisidium rotundatum</i> Prime	443
Fig. 2. <i>Pisidium virginicum</i> Bourguignat	442
Fig. 3. <i>Sphærium transversum</i> Say	441
Fig. 4. <i>Sphærium rhomboideum</i> Say	440
Fig. 5. <i>Sphærium solidulum</i> Prime.....	439
Fig. 6. <i>Sphærium striatinum</i> Lamarck	439
Fig. 7. <i>Pisidium abditum</i> Haldeman.....	442
Fig. 8. <i>Sphærium sulcatum</i> Lamarck	438
Fig. 9. <i>Sphærium stamineum</i> Conrad	440
Figs. 10, 11. <i>Vivipara subpurpurea</i> Say.....	418
Fig. 12. <i>Vivipara intertexta</i> Say	419
Figs. 13, 13a. <i>Vivipara coniectoides</i> Binney	418
Figs. 14, 14a. <i>Lioplax subcarinata</i> Say.....	419
Fig. 15. <i>Lioplax subcarinata</i> Say. Showing animals and sexes	419

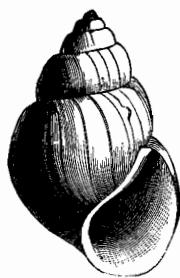




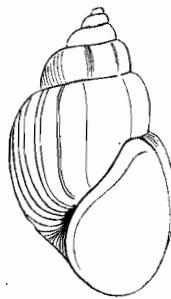
C. decisum, 1-3. C. ponderosum, 4-6.



11



10



12



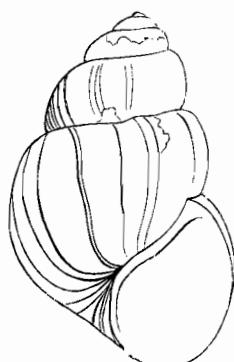
8



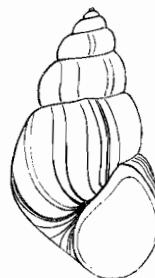
9



4



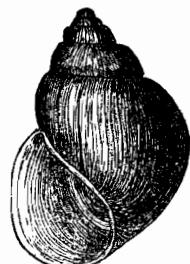
5



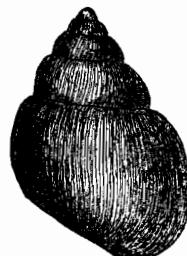
7



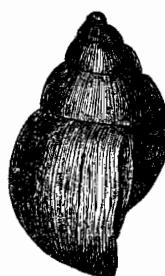
6



1



2

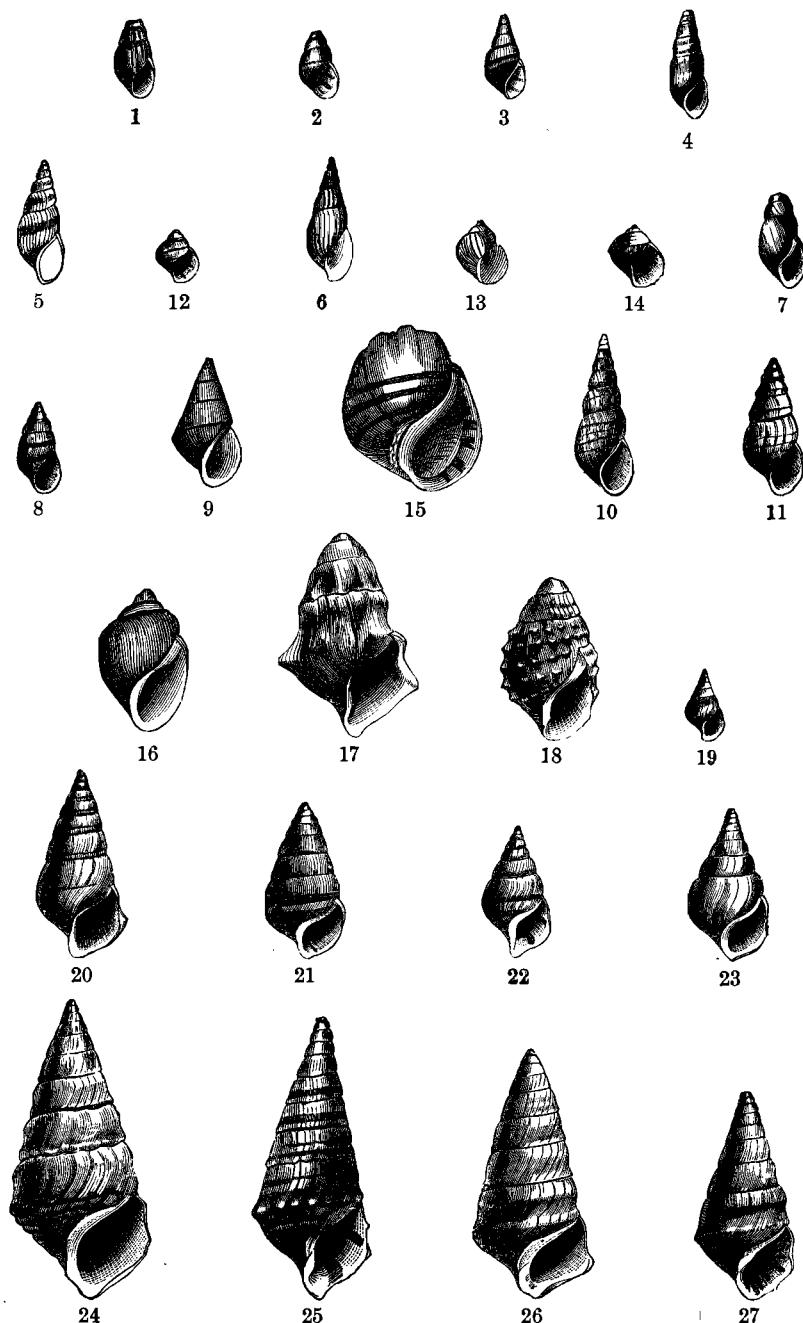


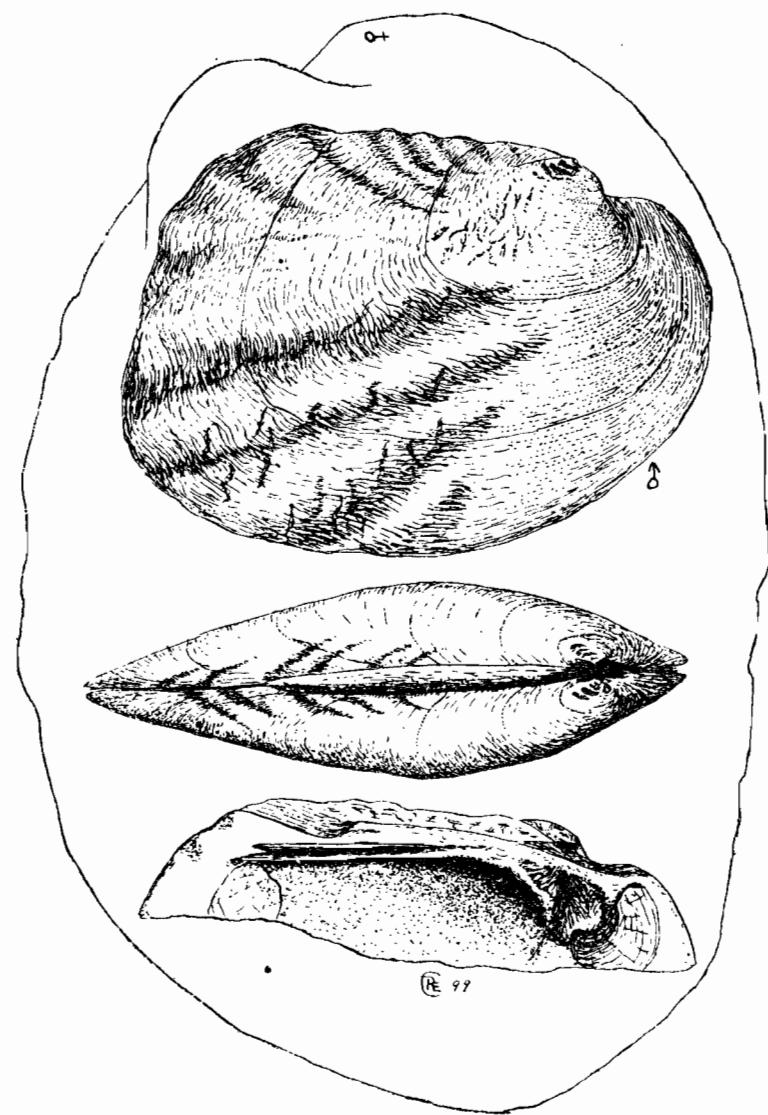
3

C. subsolidum, 1-7. C. rufum, 8-9. C. integrum, 10-12.

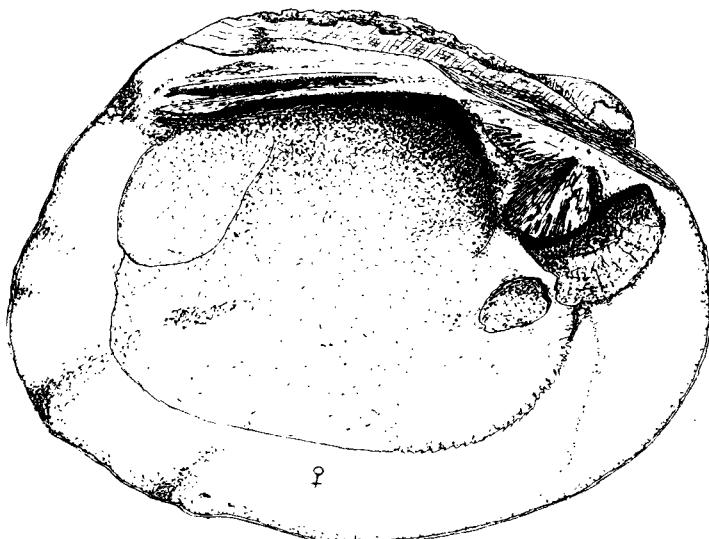
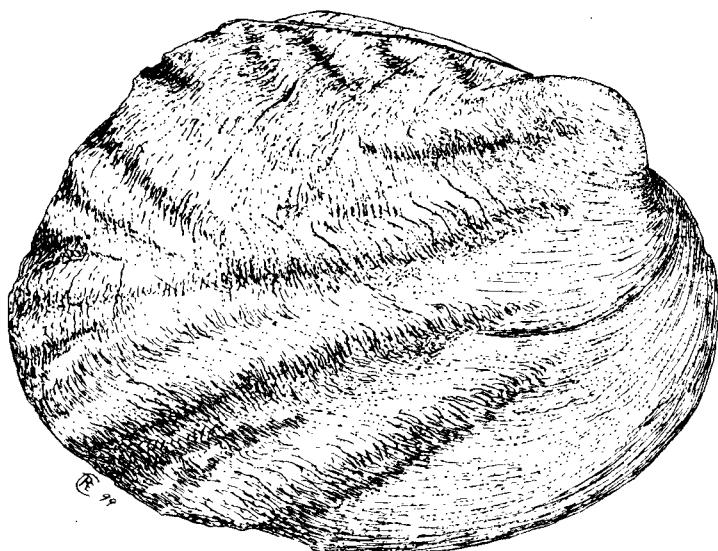
PLATE 12.

	Page.
Fig. 1. <i>Goniobasis intersita</i> Haldeman	433
Fig. 2. <i>Goniobasis infantula</i> Lea.....	434
Figs. 3 and 8. <i>Goniobasis depygis</i> Say.....	432
Fig. 4. <i>Goniobasis informis</i> Lea	435
Fig. 5. <i>Goniobasis pulchella</i> Anthony	434
Fig. 6. <i>Goniobasis interlineata</i> Anthony.....	434
Fig. 7. <i>Goniobasis louisvillensis</i> Lea	435
Fig. 9. <i>Goniobasis cubicoides</i> Anthony.....	432
Fig. 10. <i>Goniobasis semicarinata</i> Say.....	435
Fig. 11. <i>Goniobasis livescens</i> Menke	433
Fig. 12. <i>Anculosa trilineata</i> Say	436
Fig. 13. <i>Anculosa viridis</i> Lea	—
Fig. 14. <i>Anculosa costata</i> Anthony.....	435
Fig. 15. <i>Anculosa prarosa</i> Say.....	436
Fig. 16. <i>Lithasia obovata</i> Say	431
Fig. 17. <i>Angitrema armigera</i> Say	430
Fig. 18. <i>Angitrema verrucosa</i> Rafinesque.....	430
Figs. 19, 21–23. <i>Pleurocera canaliculatum</i> Say	428
Fig. 20. <i>Pleurocera elevatum</i> Say	429
Fig. 24. <i>Pleurocera undulatum</i> Say	427
Fig. 25. <i>Pleurocera moniliferum</i> Say	428
Figs. 26, 27. <i>Pleurocera canaliculatum</i> Say	428

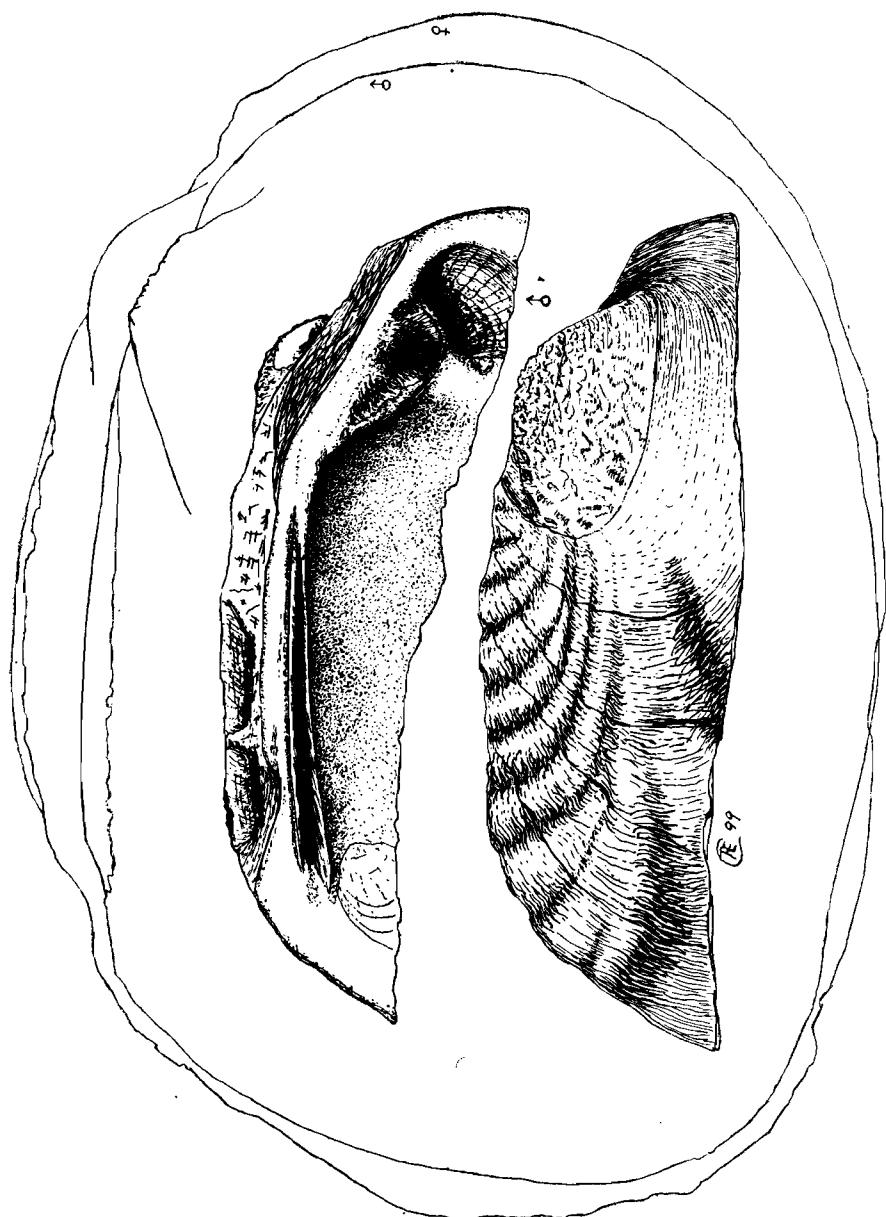




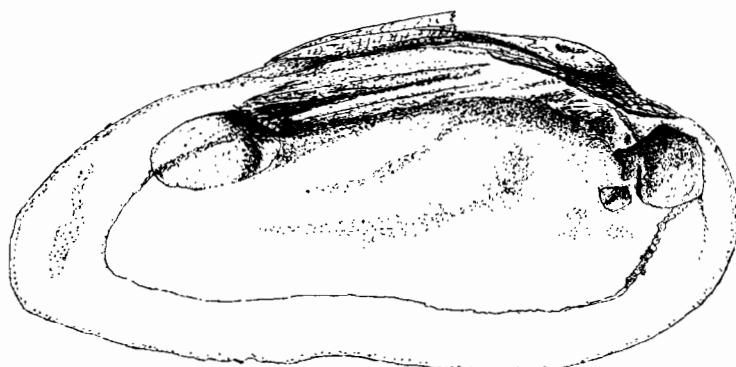
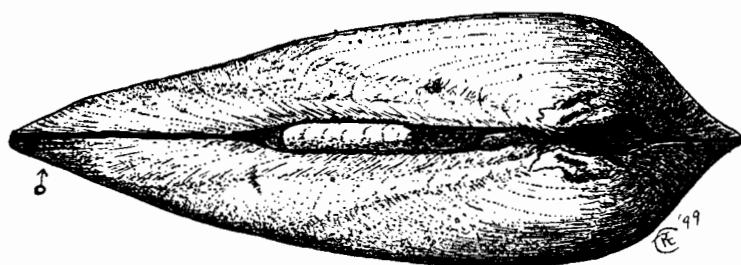
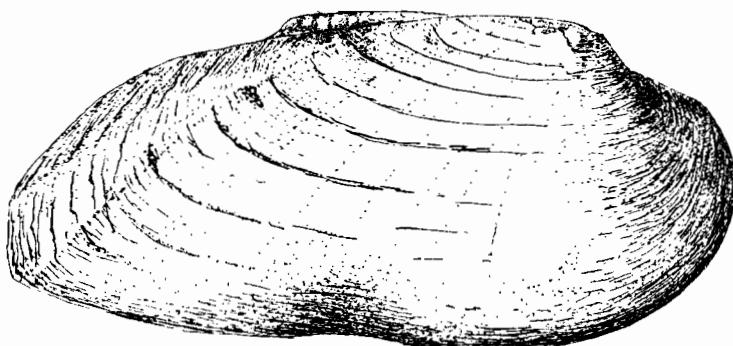
UNIO UNDULATUS Barnes.



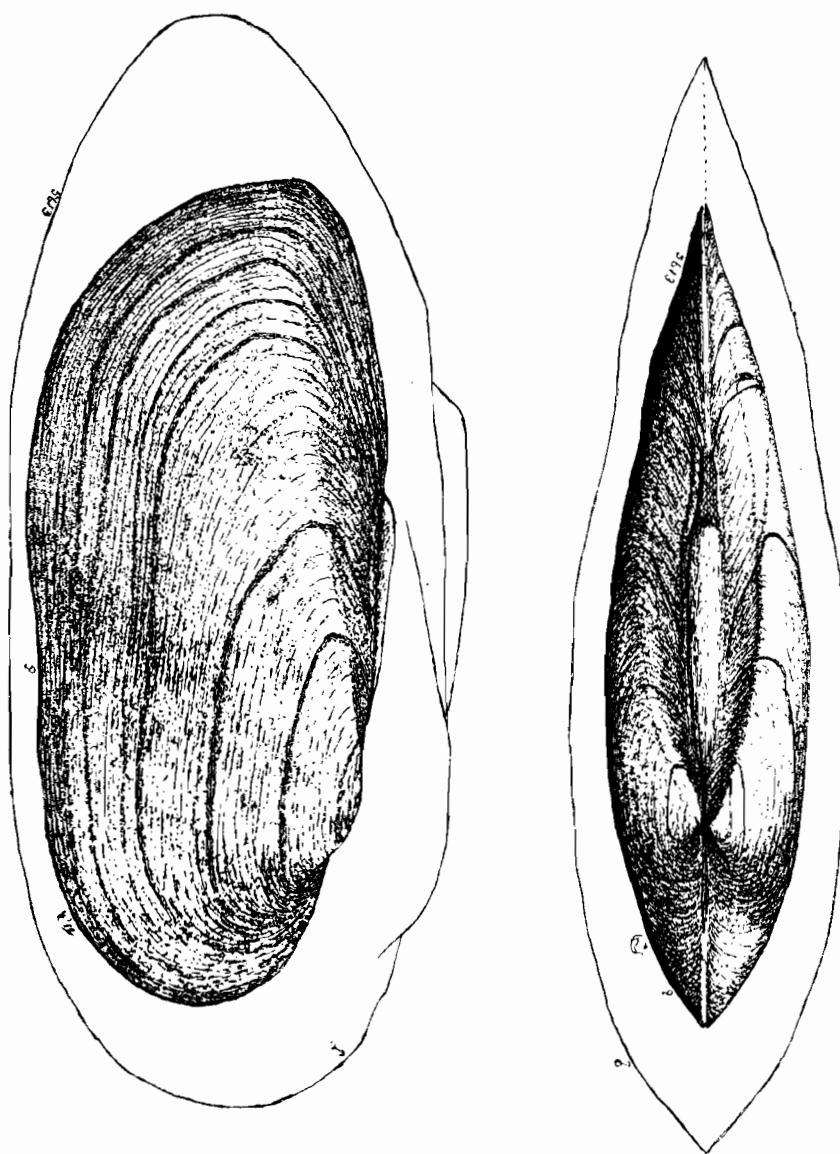
UNIO PLICATUS LeSueur.



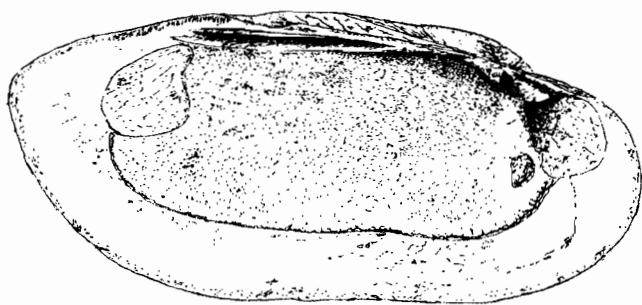
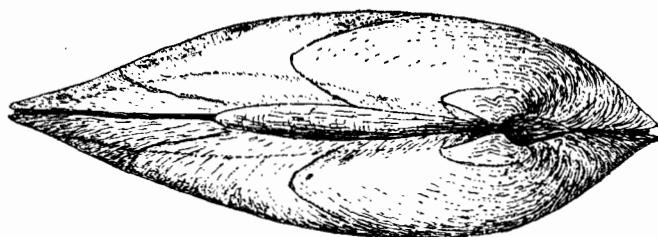
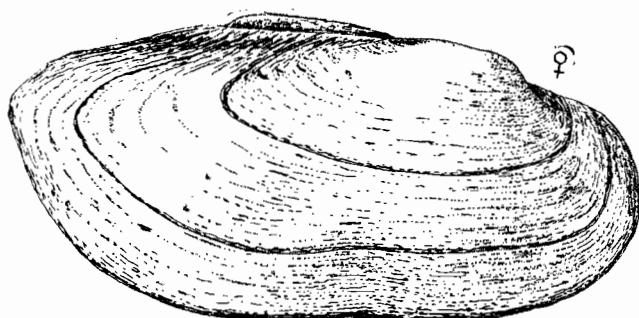
UNIO MULTPLICATUS Lea. (Reduced.)



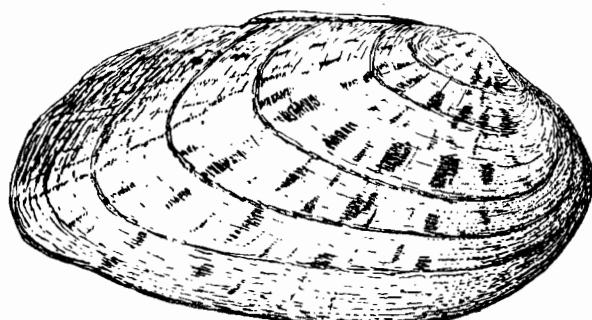
UNIO GIBBOSUS Barnes.



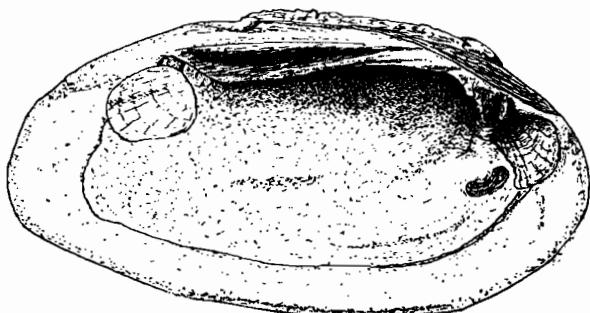
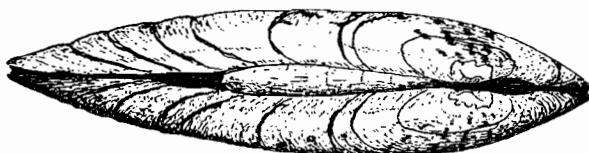
UNIO RECTUS Lamarek.



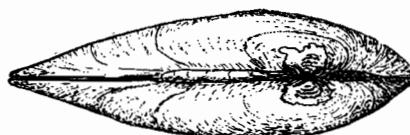
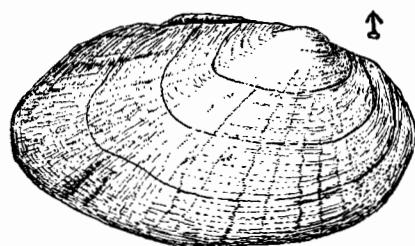
UNIO TERES Rafinesque.



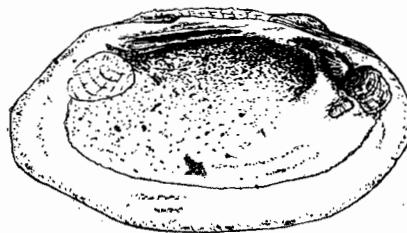
(RE 99)



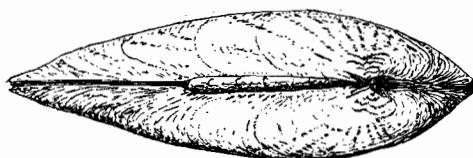
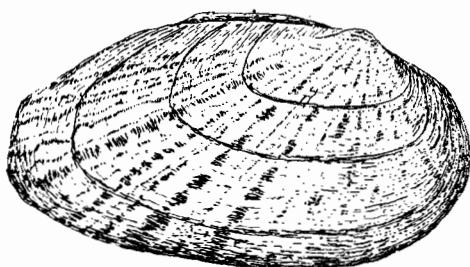
UNIO PHASEOLUS Hildreth.



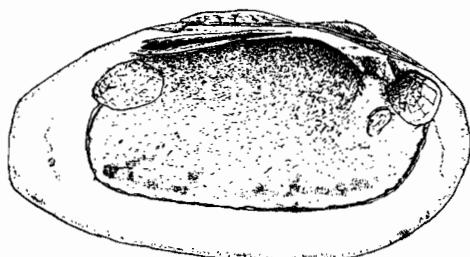
LE. 99.



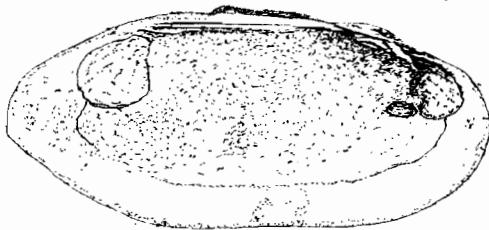
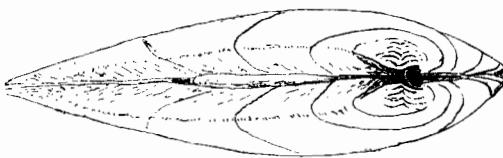
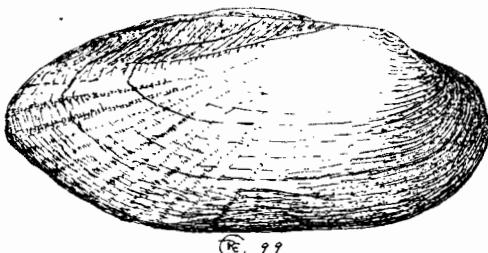
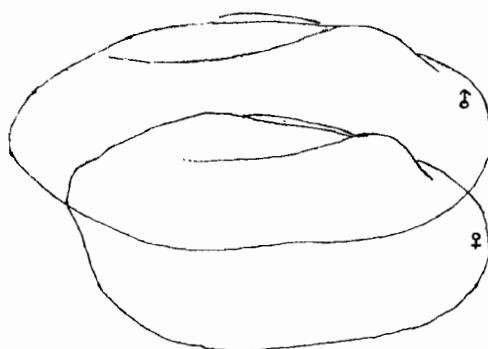
UNIO SPATULATUS Lea.



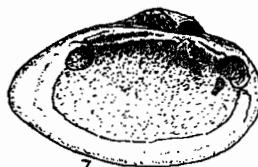
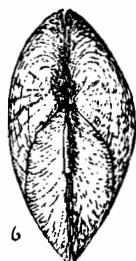
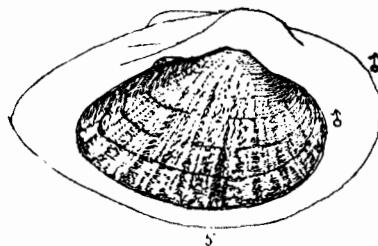
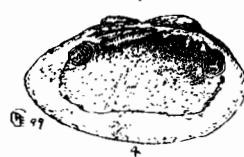
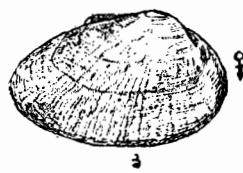
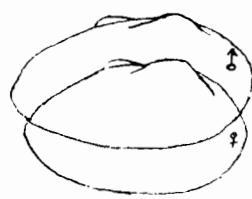
RE 99



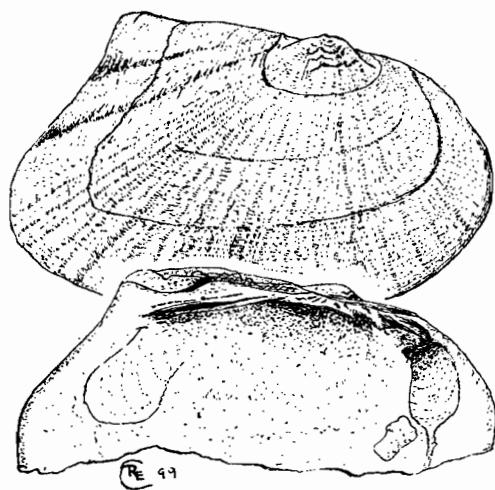
UNIO IRIS Lea.



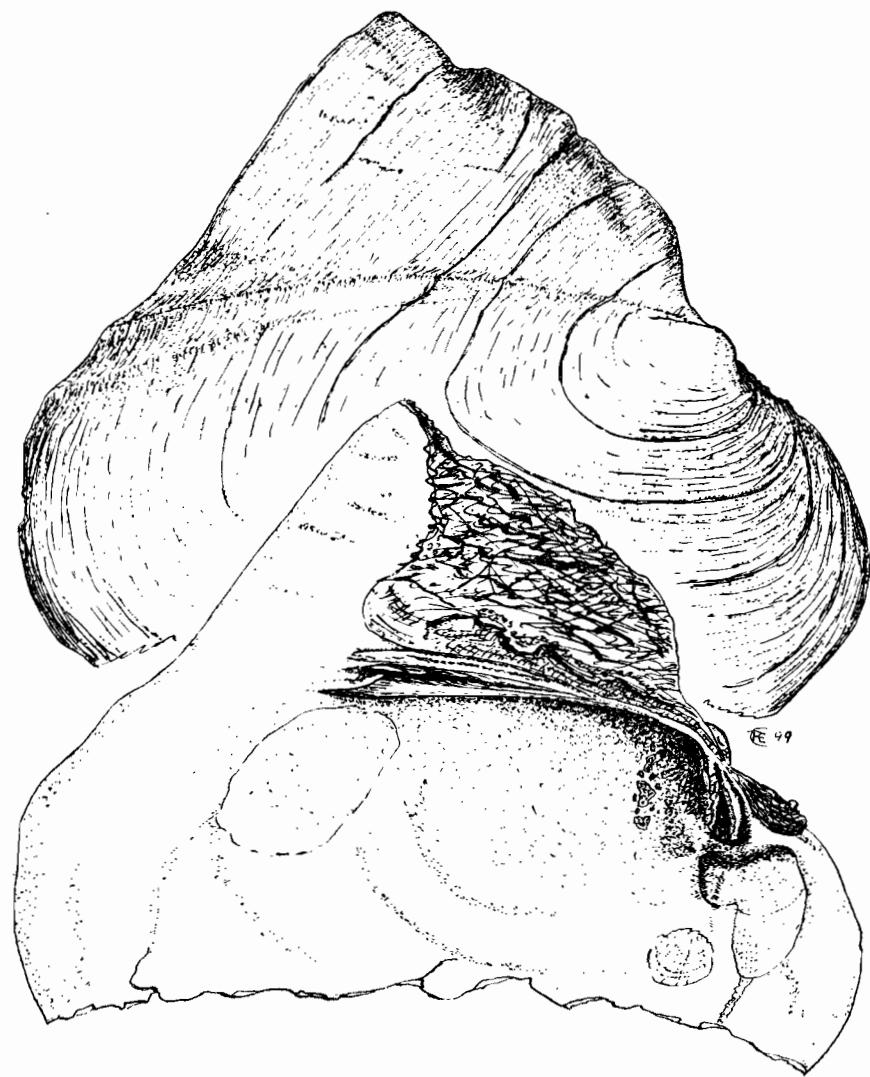
UNIO SUBROSTRATUS Say.



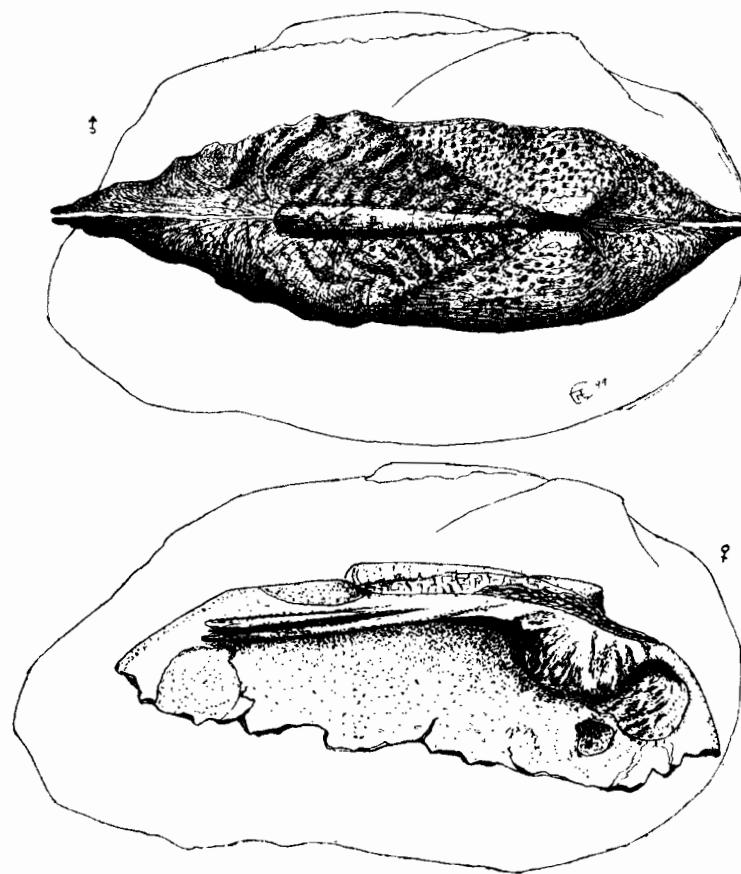
1-4, *UNIO FABALIS* Lea.
5-7, *UNIO DONACIFORMIS* Lea.



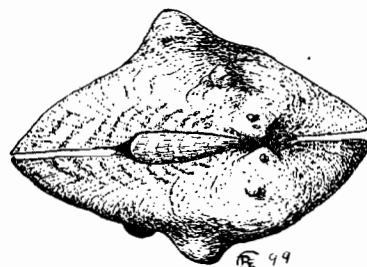
UNIO PRESSUS Lea.



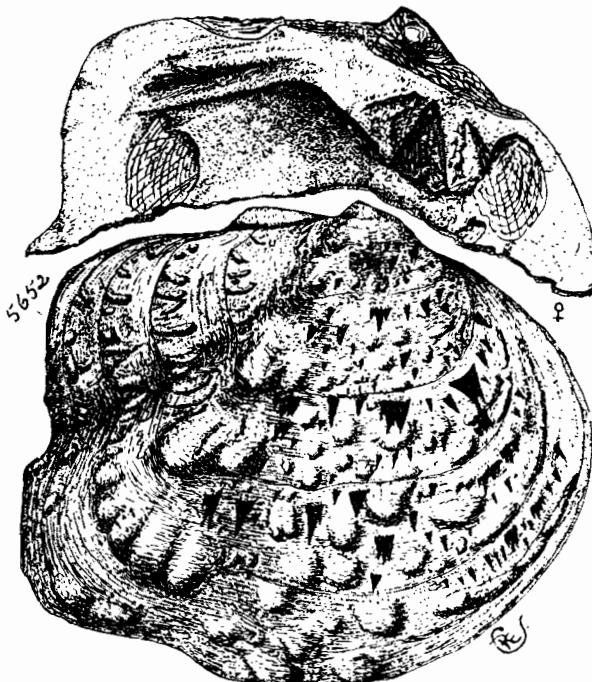
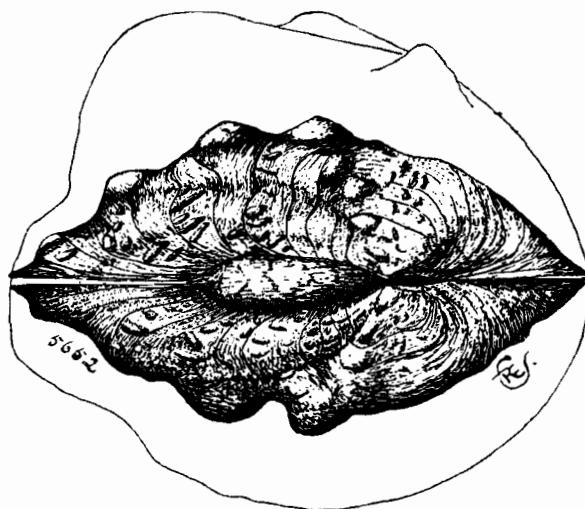
UNIO ALATUS Say.



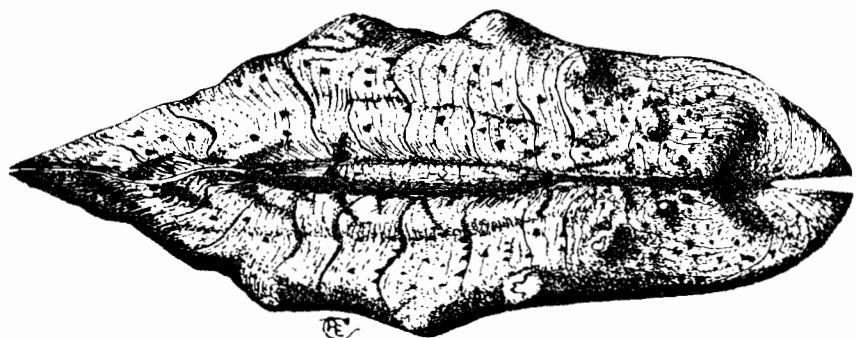
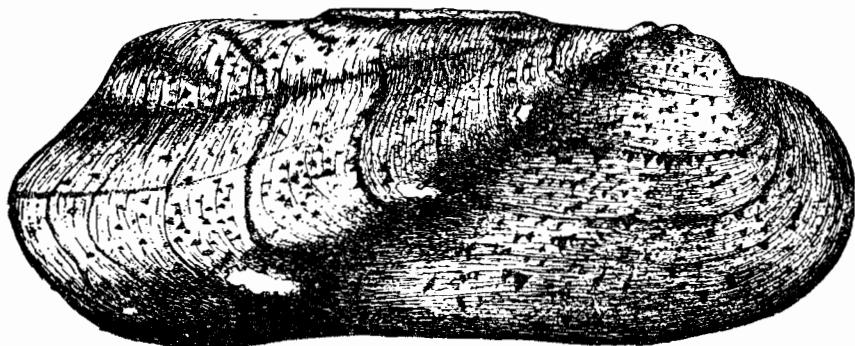
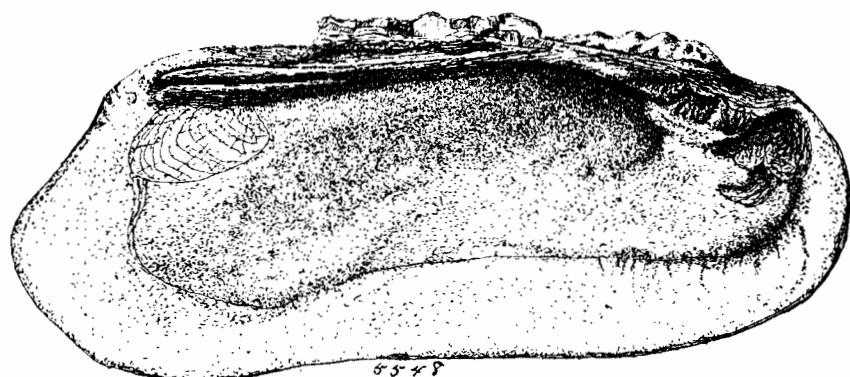
UNIO TUBERCULATUS Barnes.



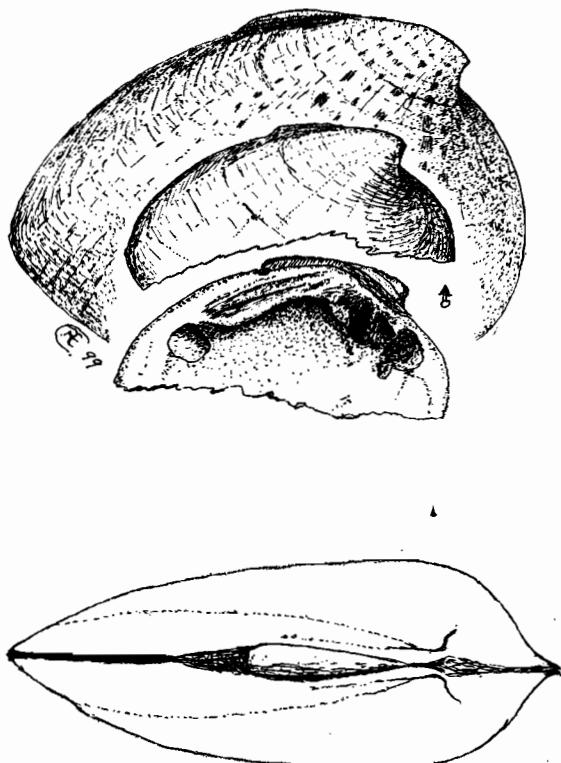
UNIO CORNUTUS Barnes.



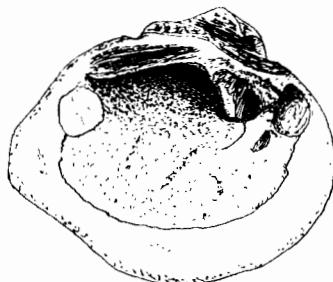
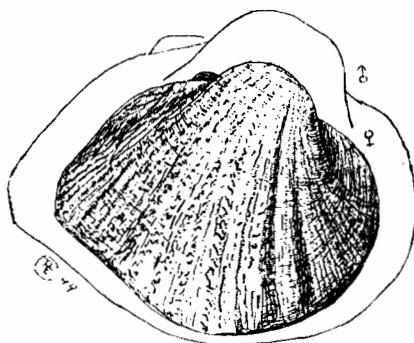
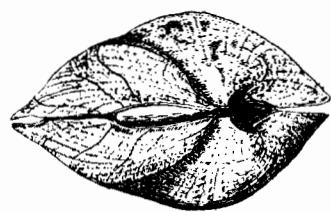
UNIO METANEVRUS Raf.



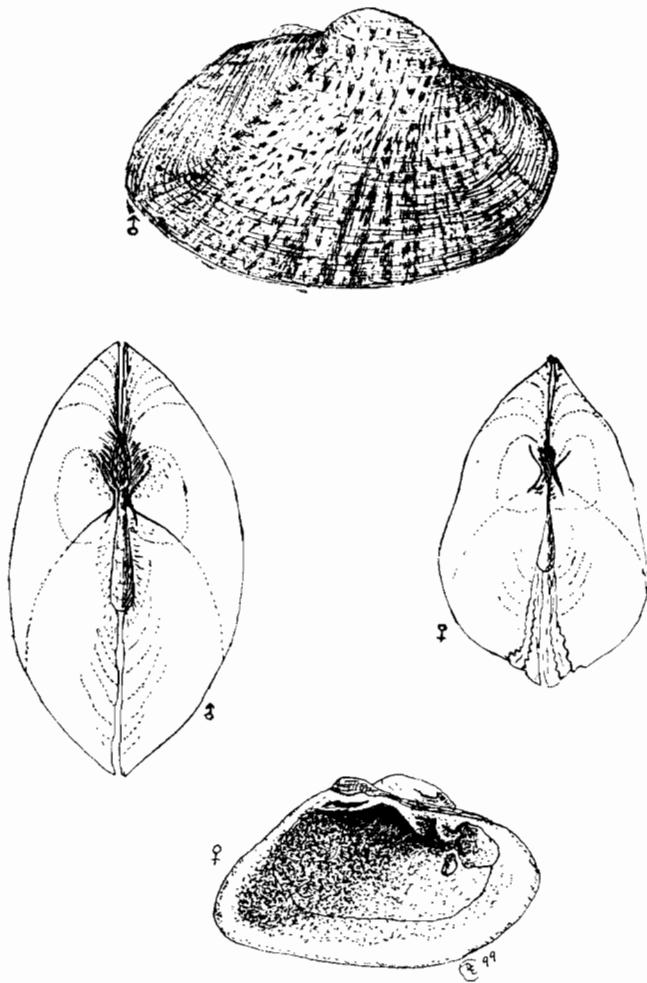
UNIO CYLINDRICUS Say.



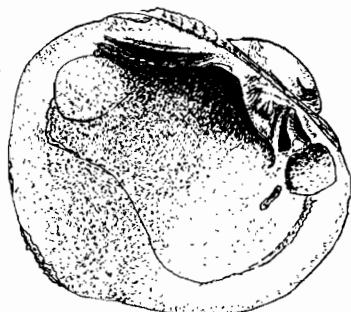
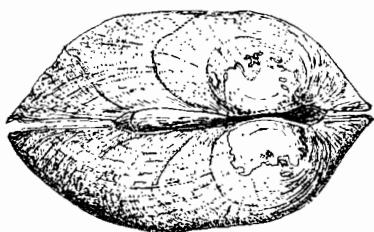
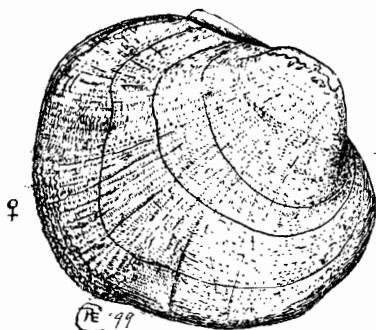
UNIO LINEOLATUS Rafinesque.



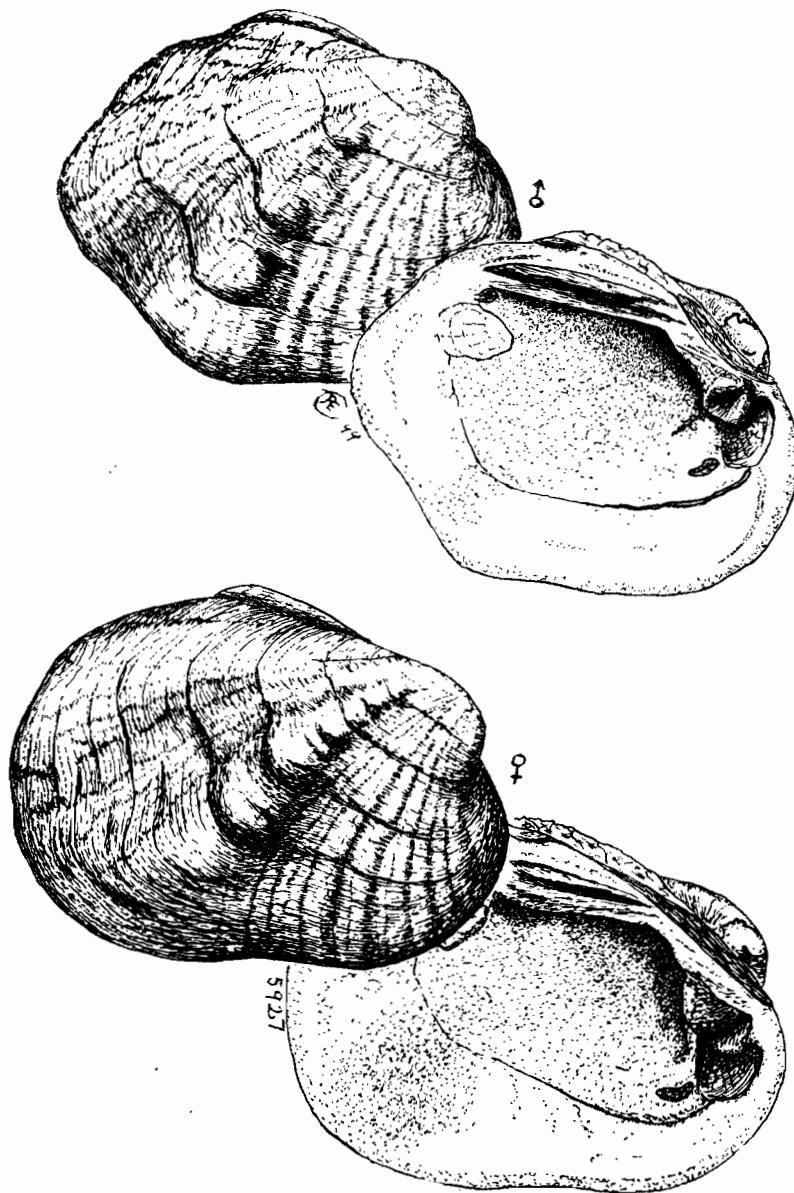
UNIO ELEGANS Lea.



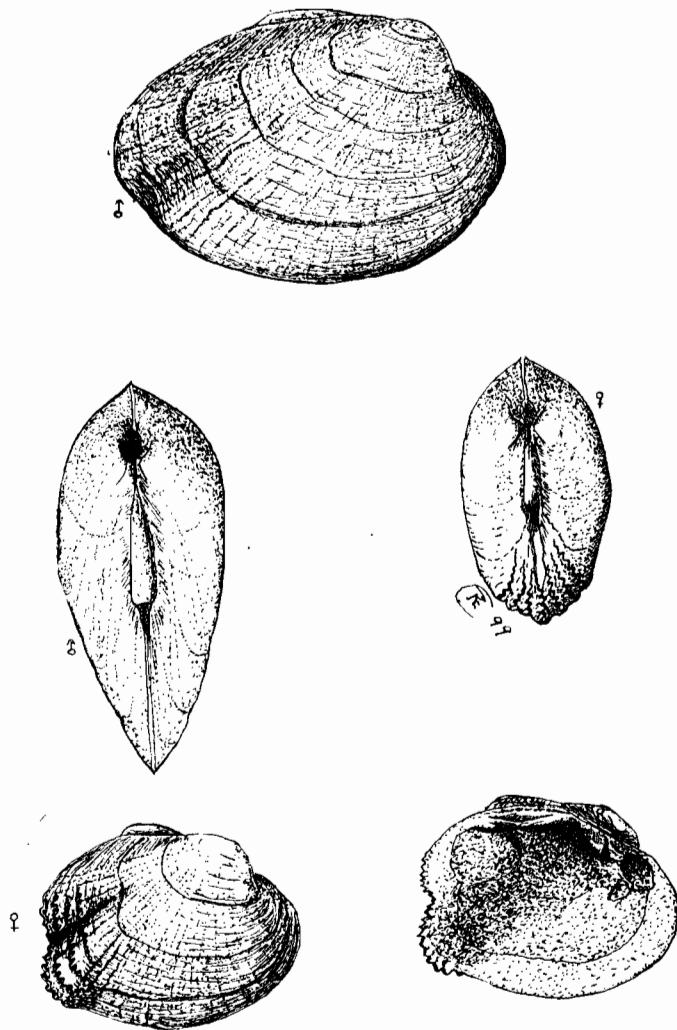
UNIO TRIANGULARIS Barnes.



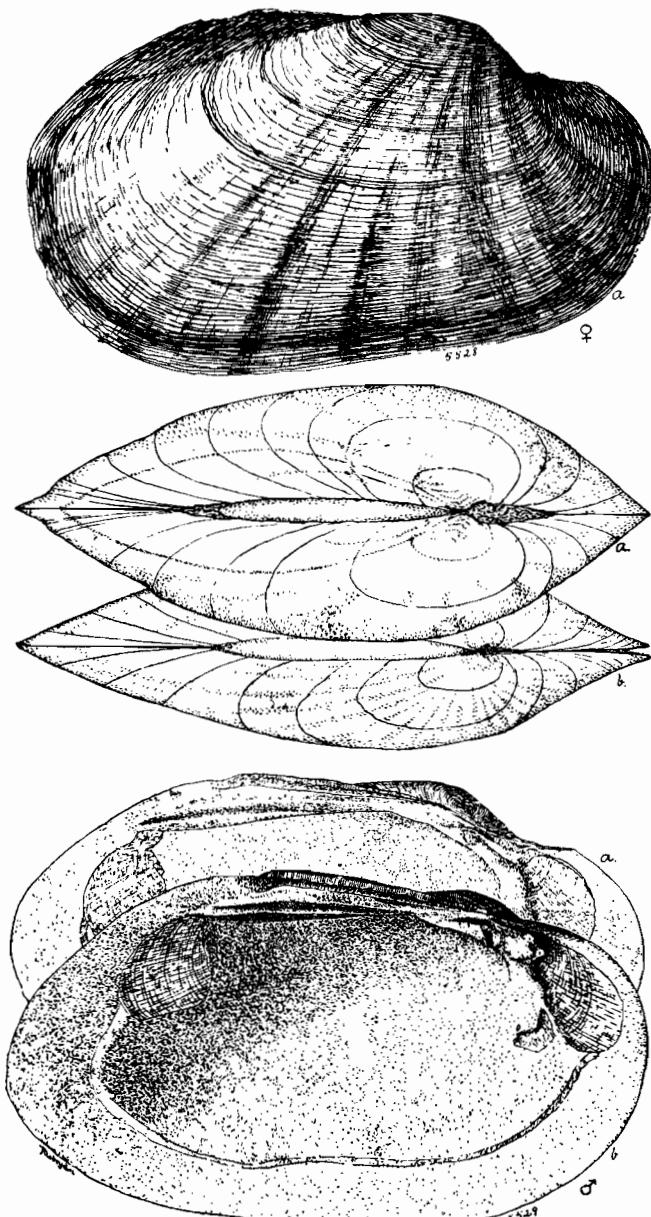
UNIO PERSONATUS Say.



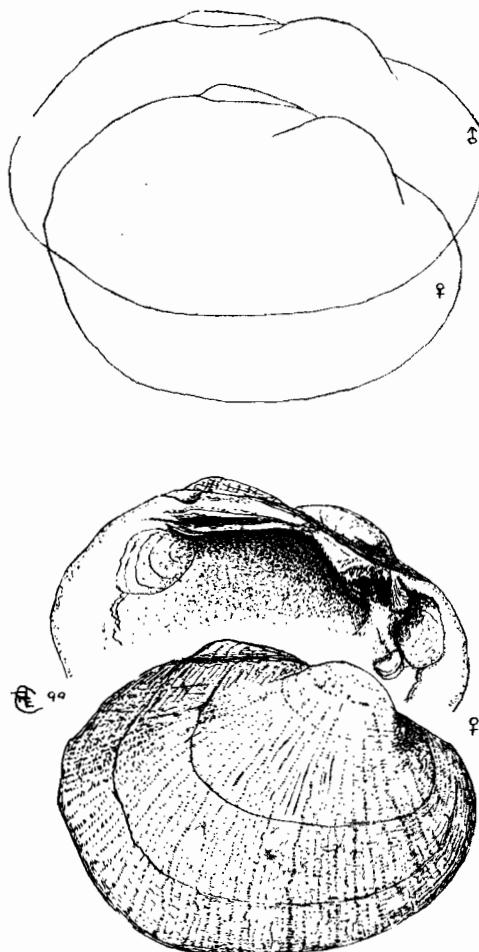
UNIO PERPLEXUS Lea.



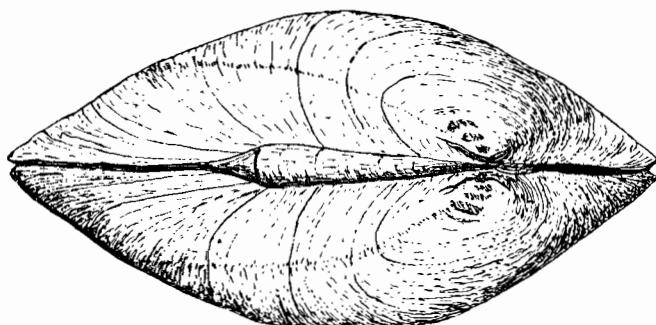
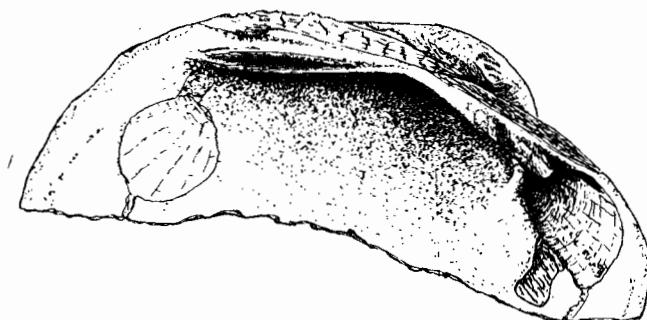
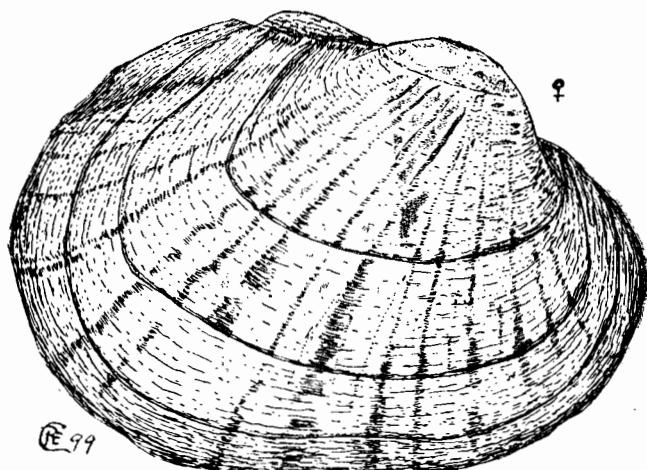
UNIO SULCATUS Lea.



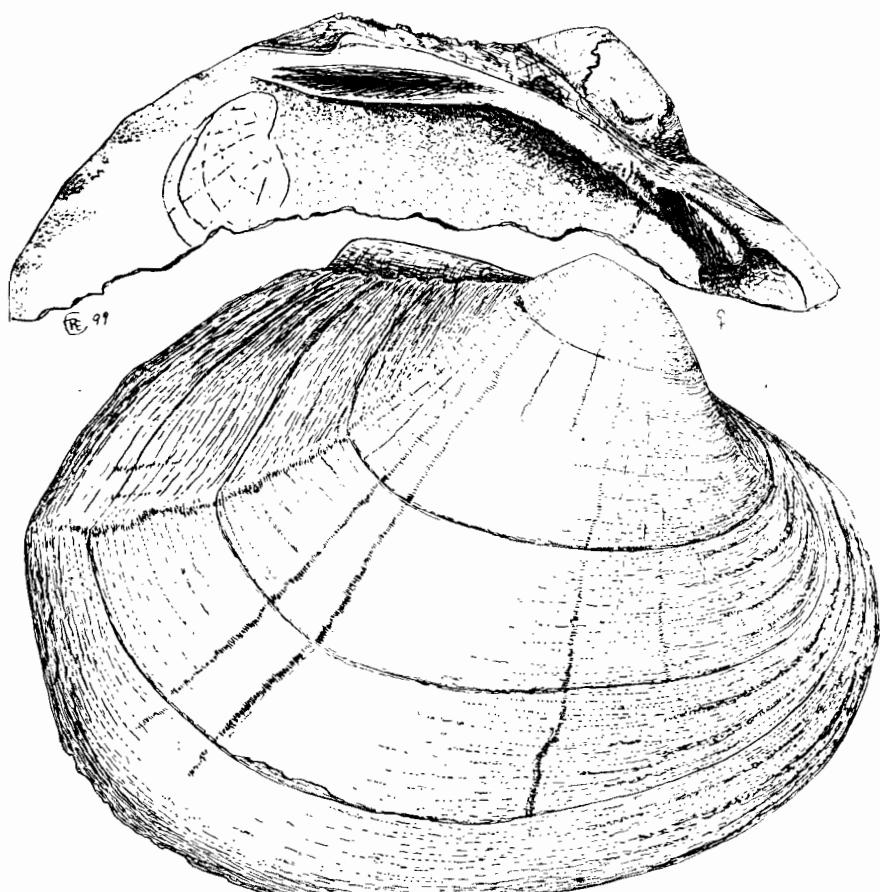
UNIO LUTEOLUS Lamarek.



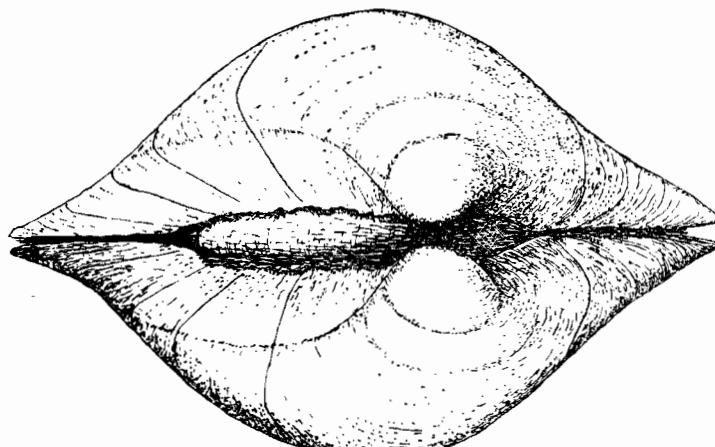
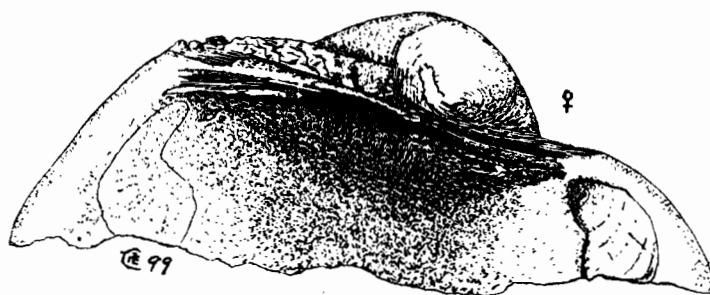
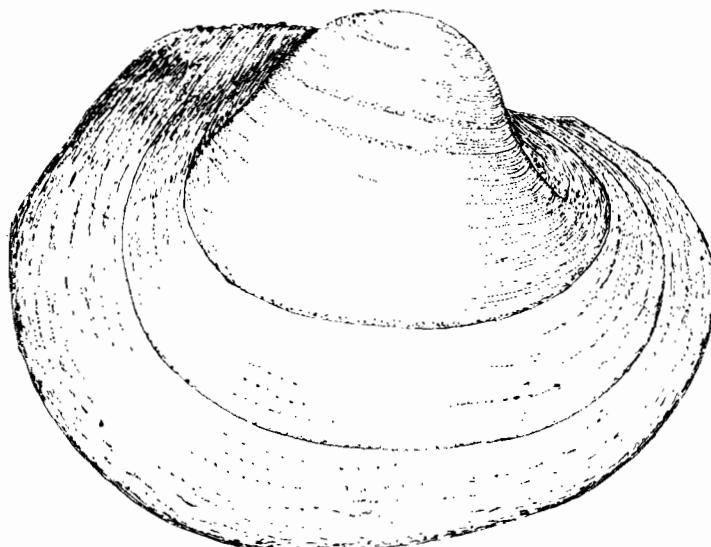
UNIO MULTIRADIATUS Lea.



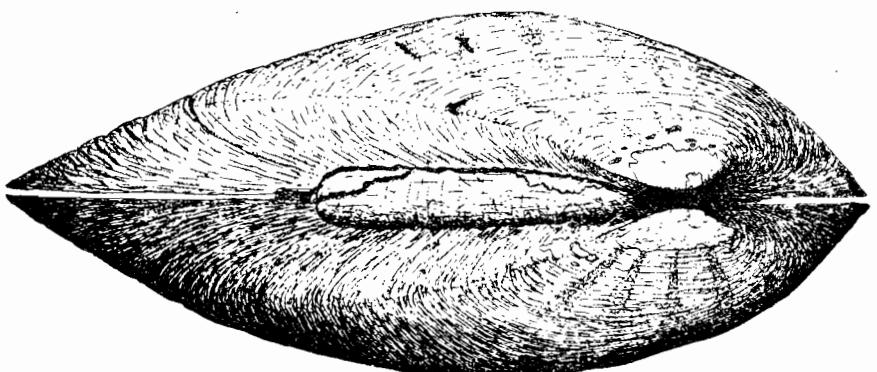
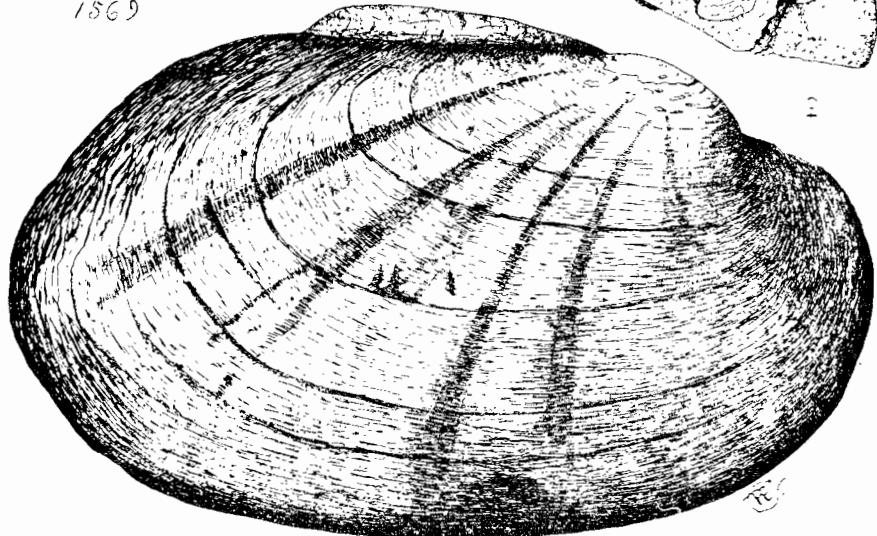
UNIO VENTRICOSUS Barnes.



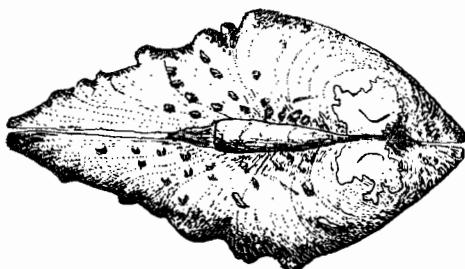
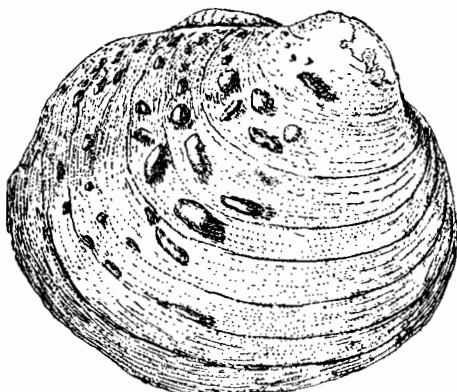
UNIO SUBOVATUS Say.



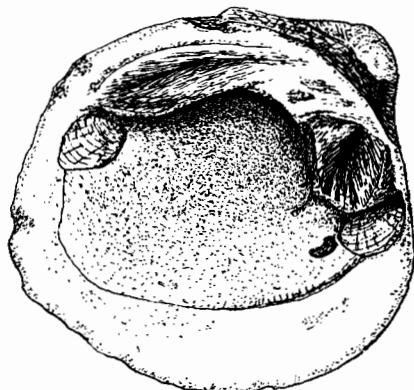
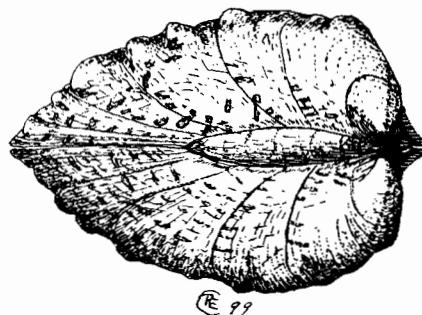
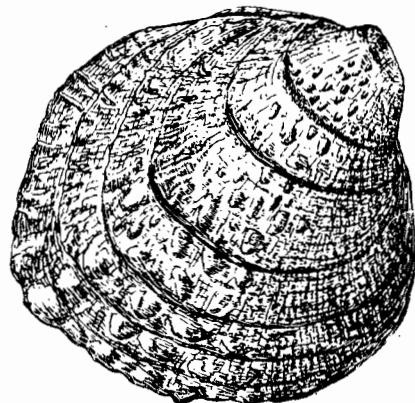
UNIO CAPAX Green.



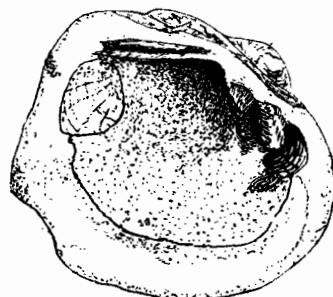
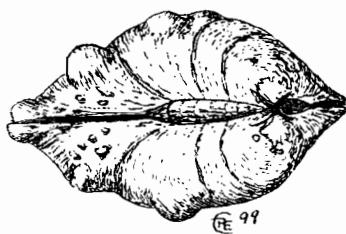
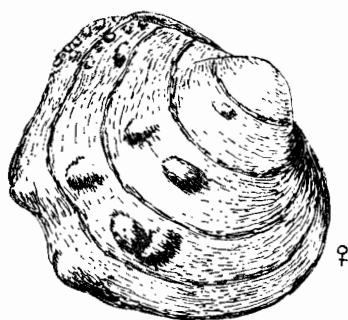
UNIO LIGAMENTINUS Lamarck.



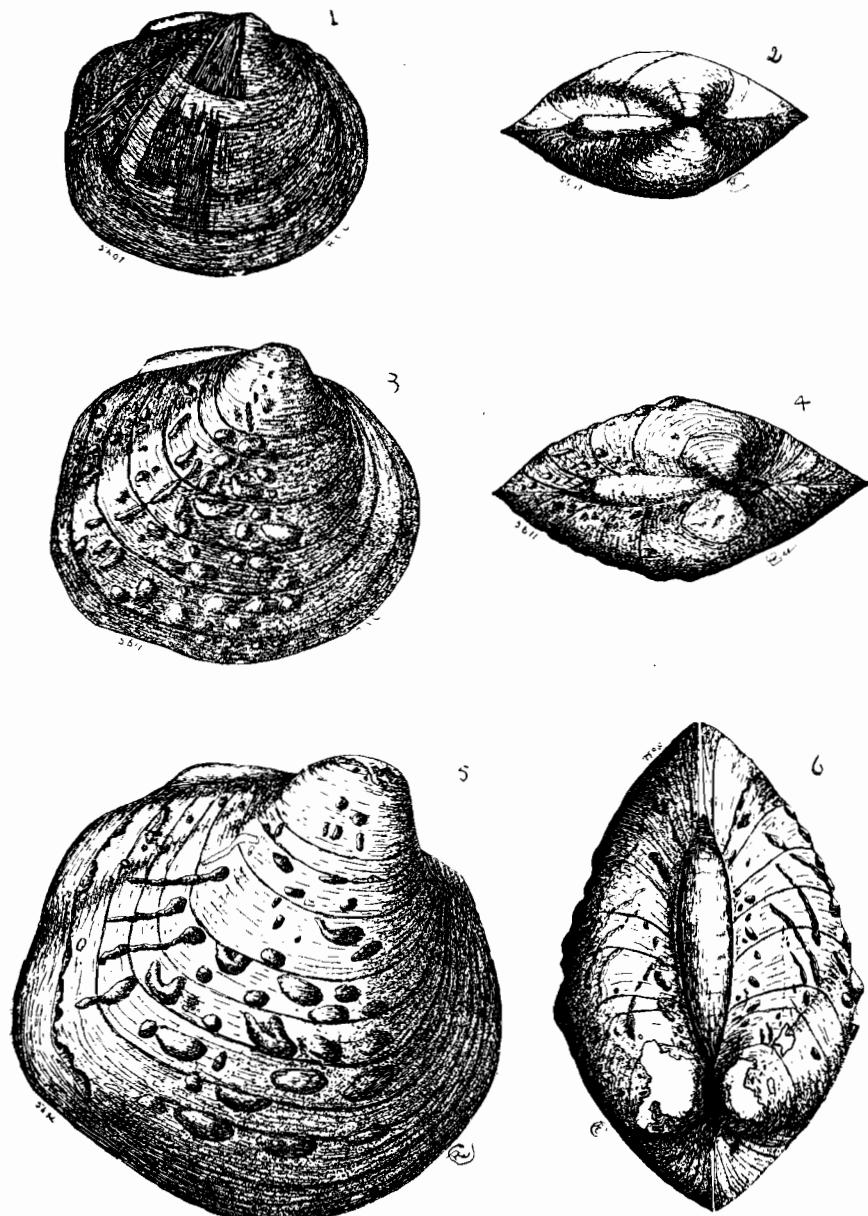
UNIO COOPERIANUS Lea.



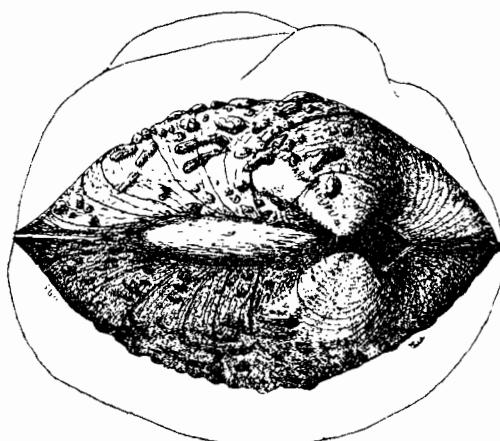
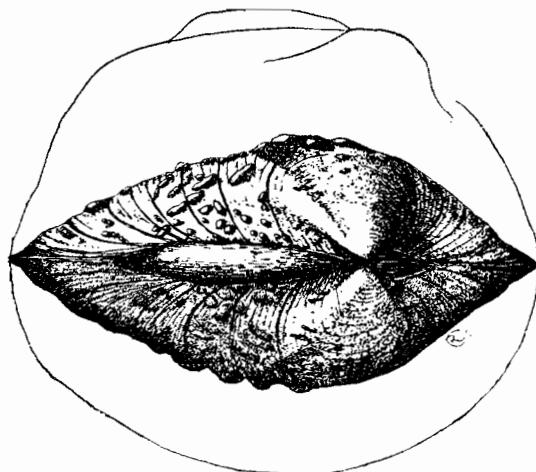
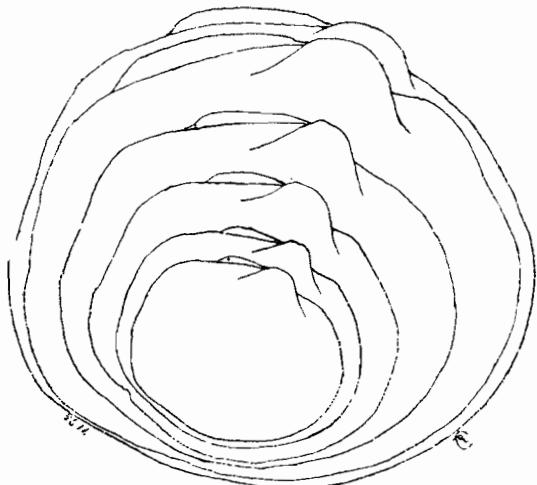
UNIO IRRORATUS Lea.



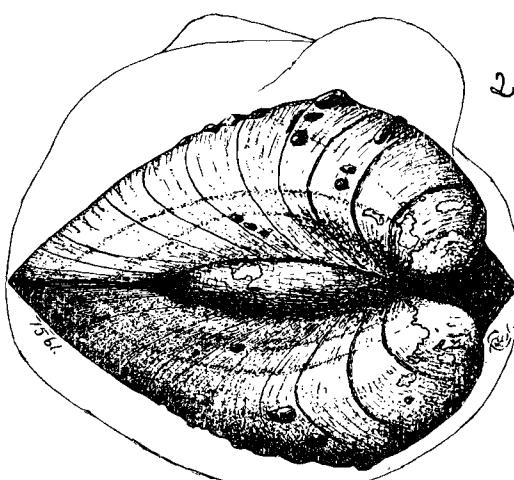
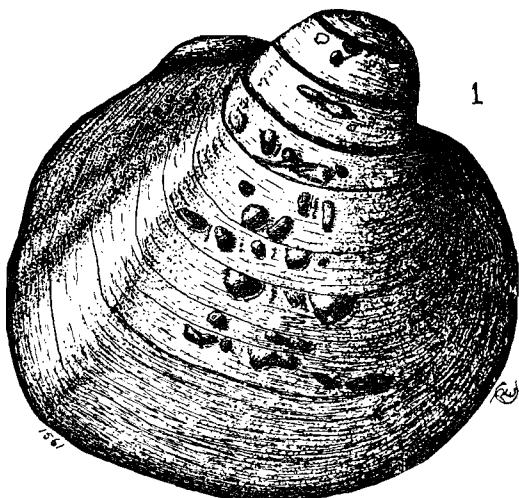
UNIO PUSTULATUS Lea.



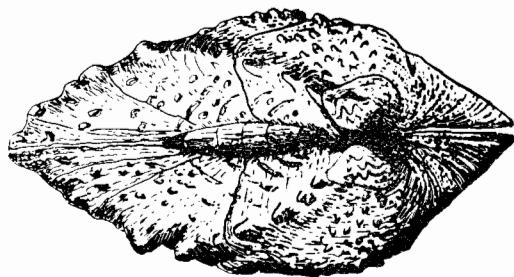
UNIO PUSTULOSUS Lea. Varieties.



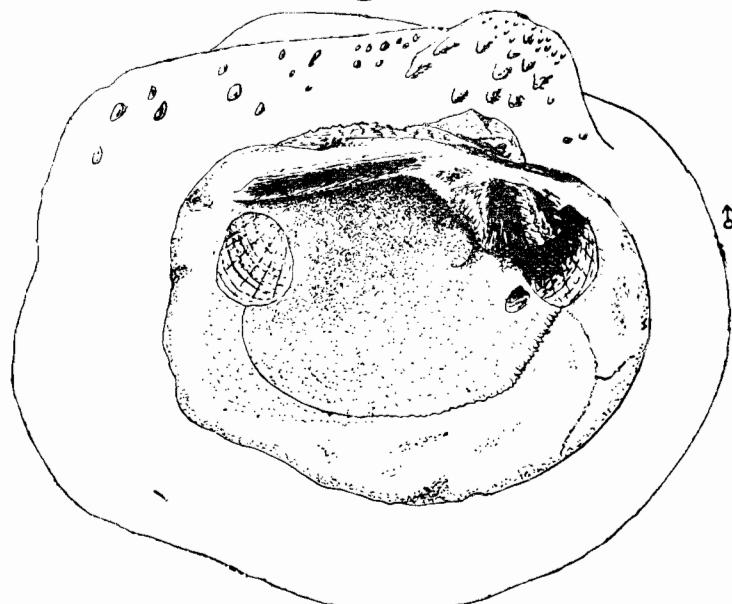
UNIO PUSTULOSUS Lea. Varieties.



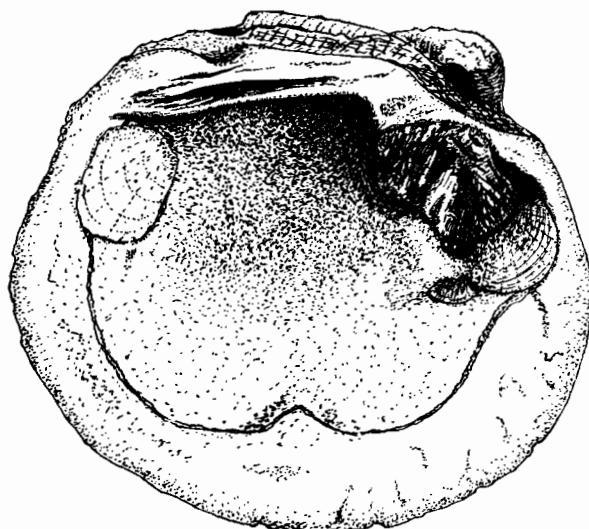
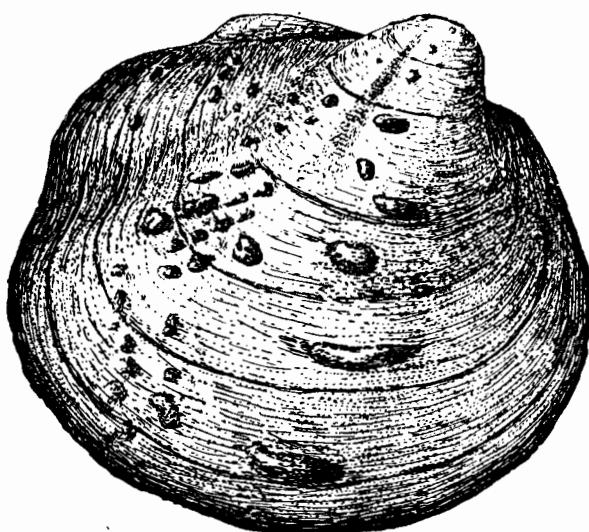
UNIO PUSIULOSUS Lea. Variety.



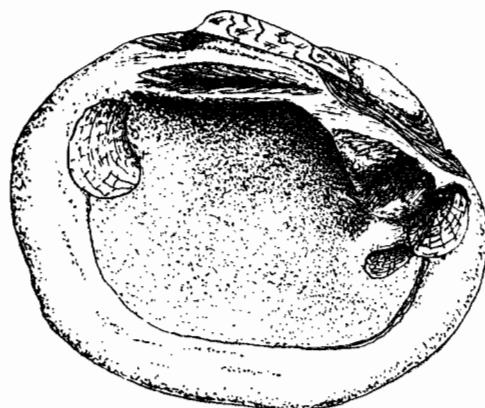
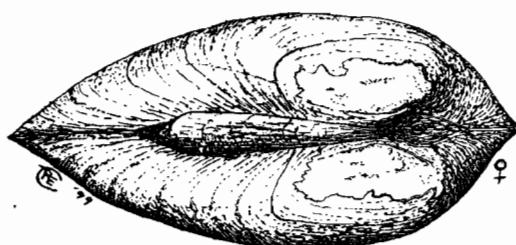
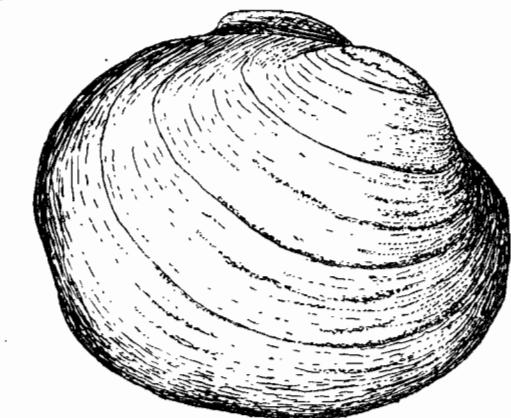
(E 99)



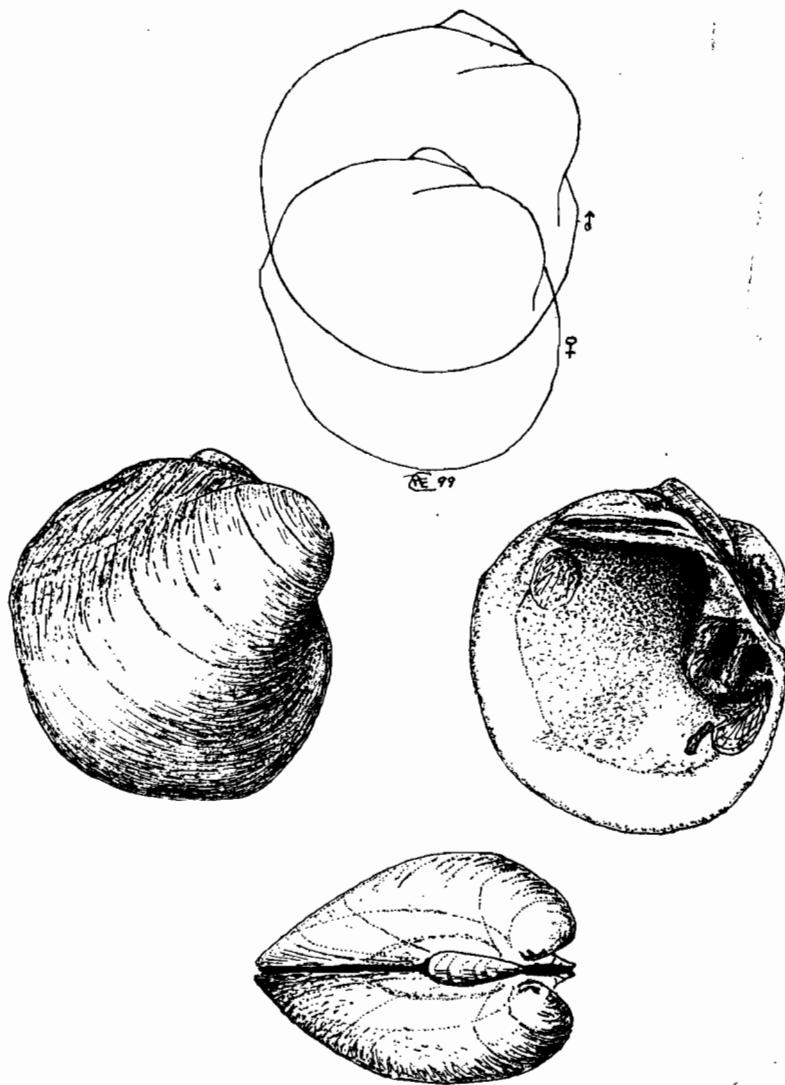
UNIO LACHRYMOSUS Lea.



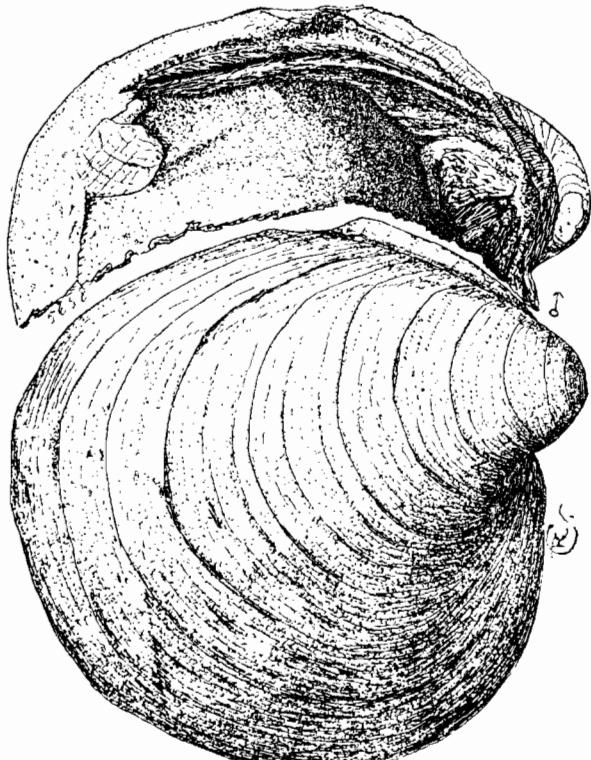
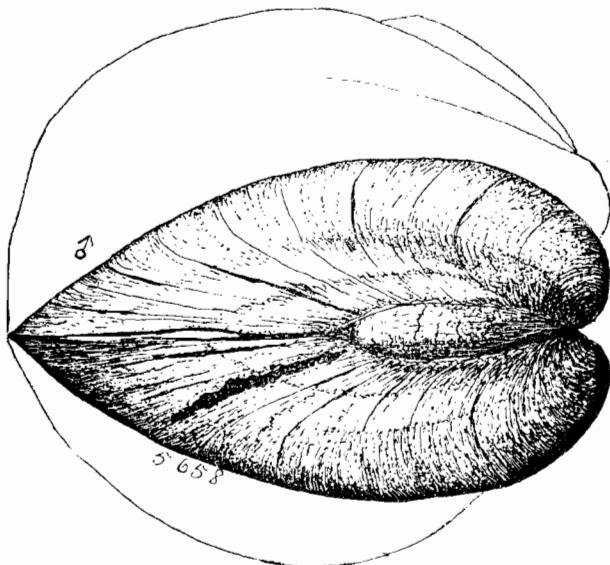
UNIO VERRUCOSUS Barres.



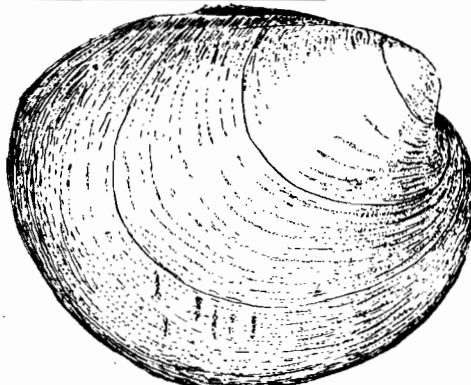
UNIO ORBICULATUS Hildreth.



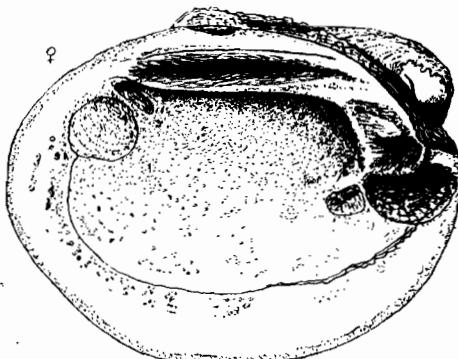
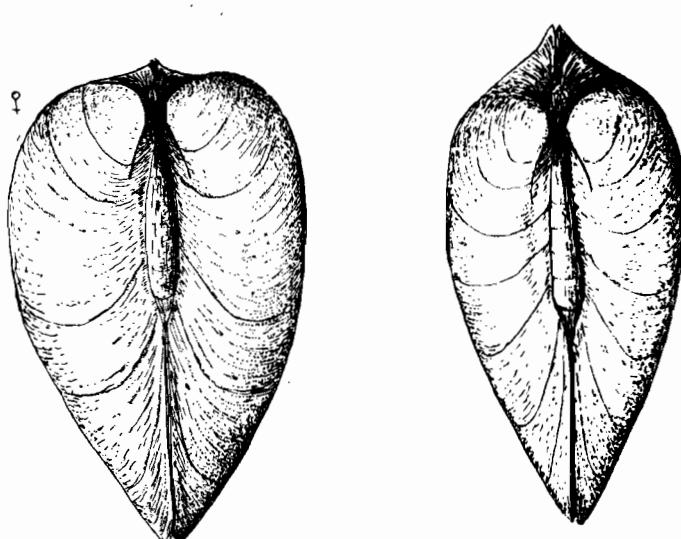
UNIO CIRCULUS Lea.

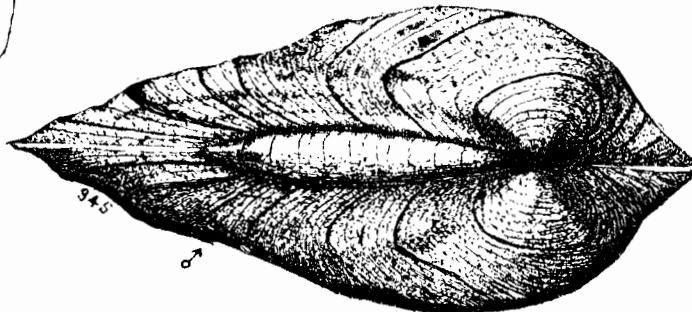
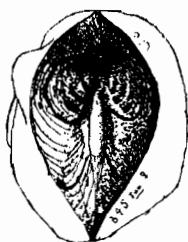
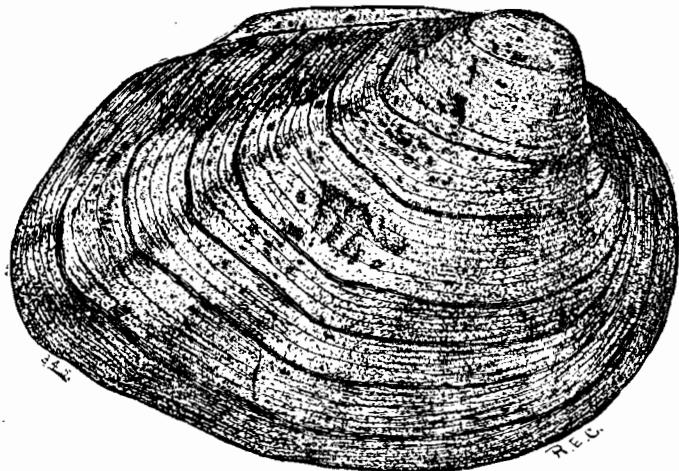


UNIO RETUSUS Lamarck.

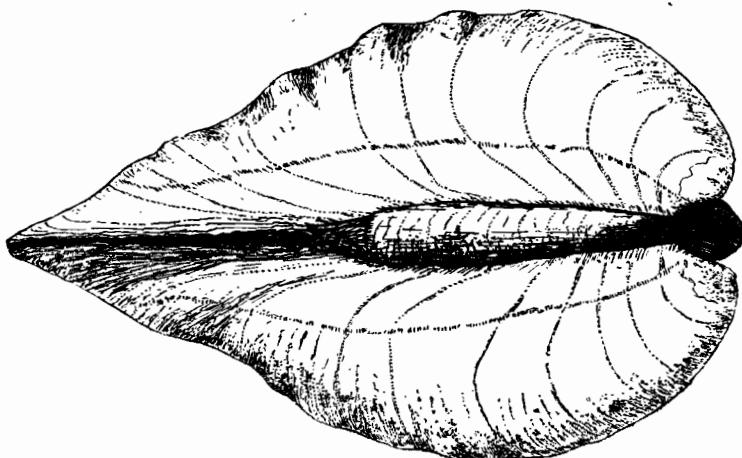
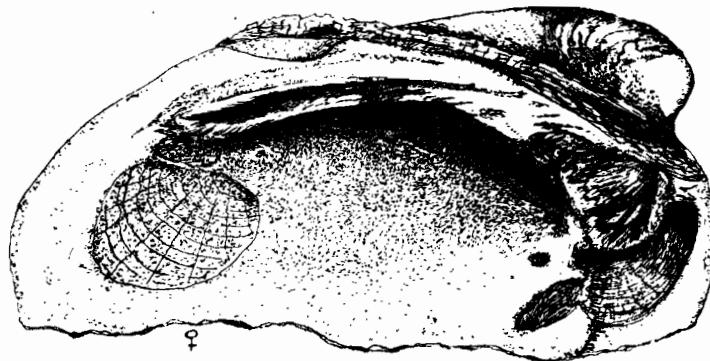
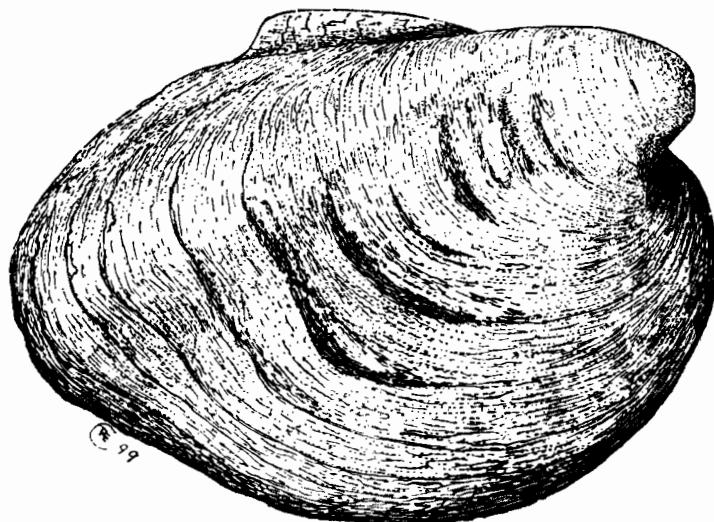


PL. 53

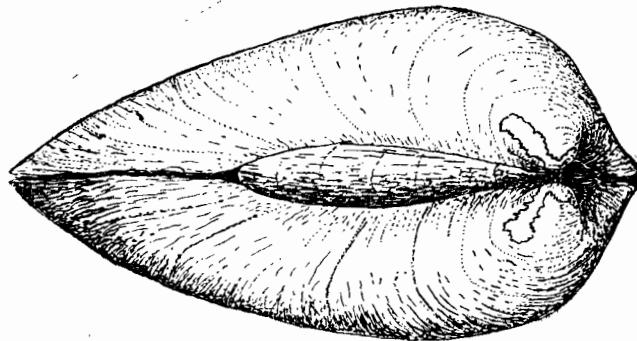
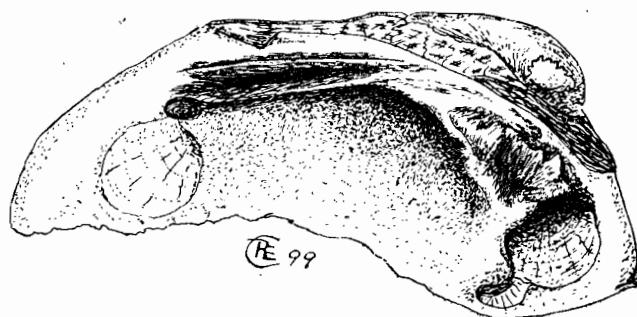
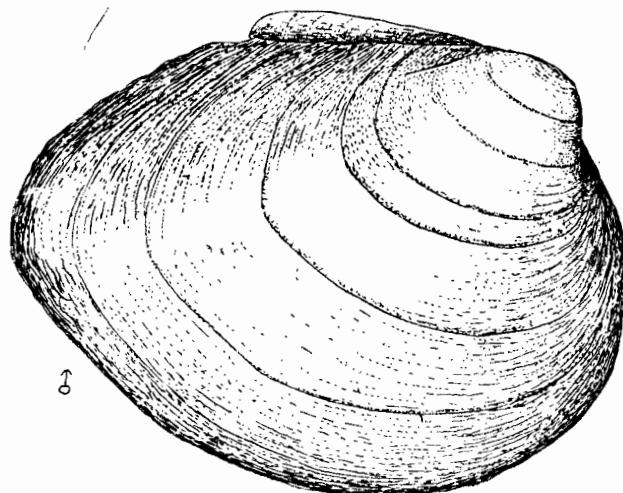




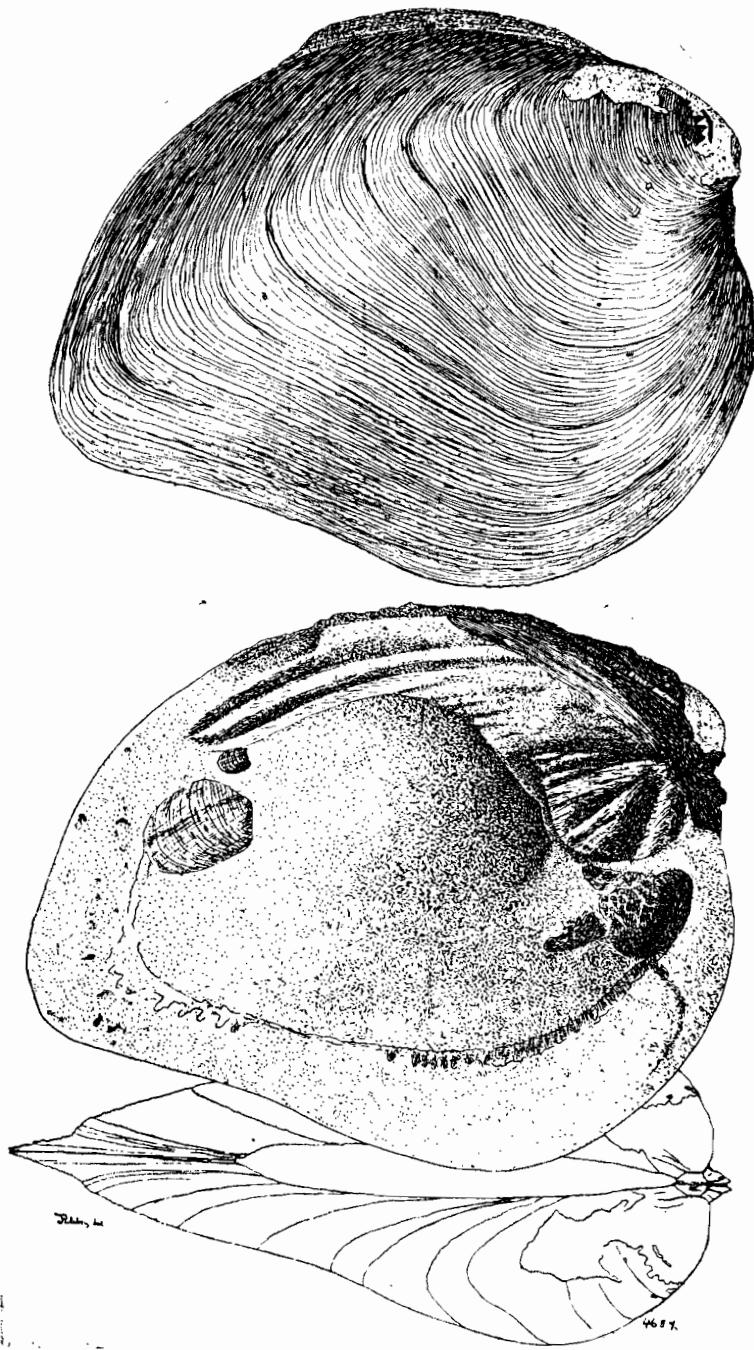
UNIO CYPHYUS Rafinesque.



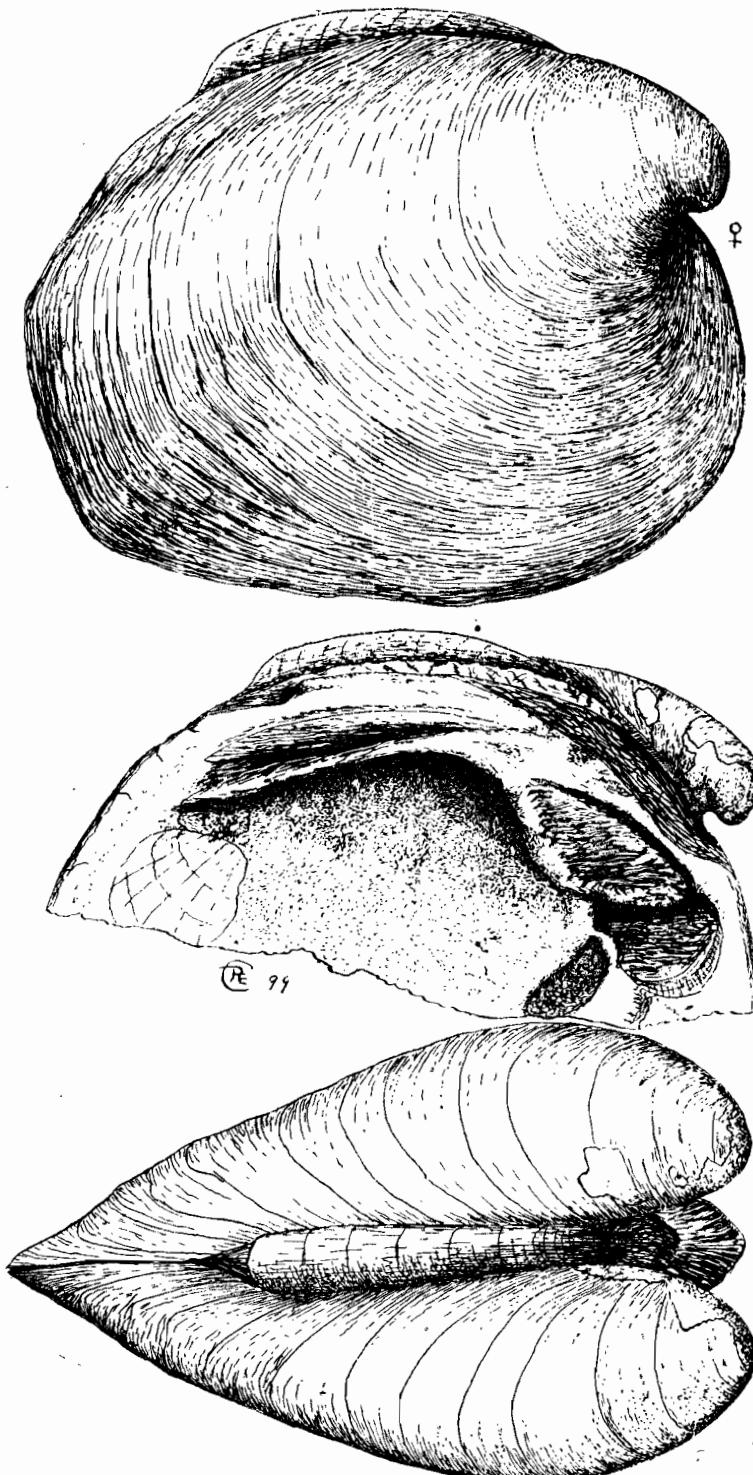
UNIO VARICOSUS Lea.



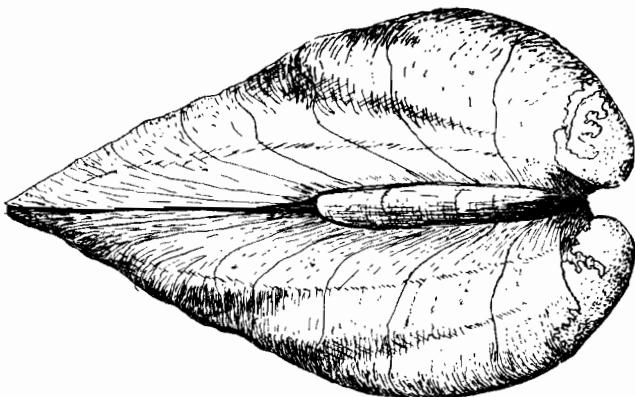
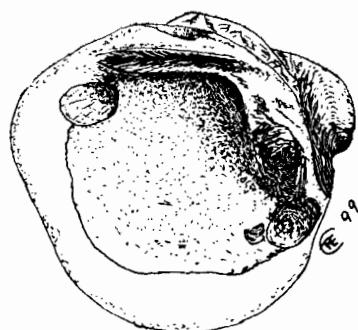
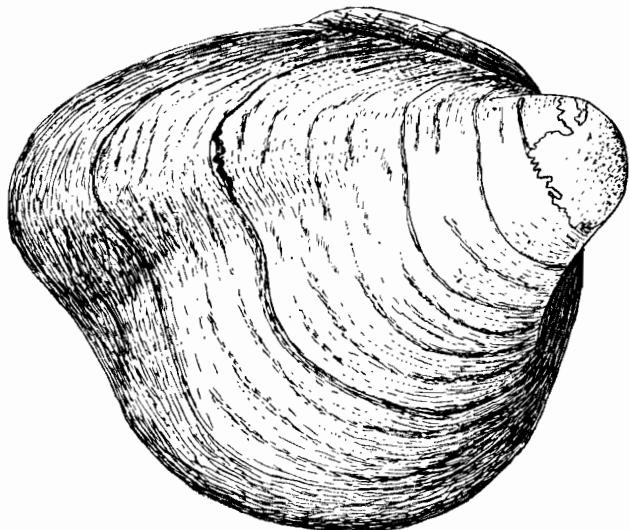
UNIO COCCINEUS Lea.



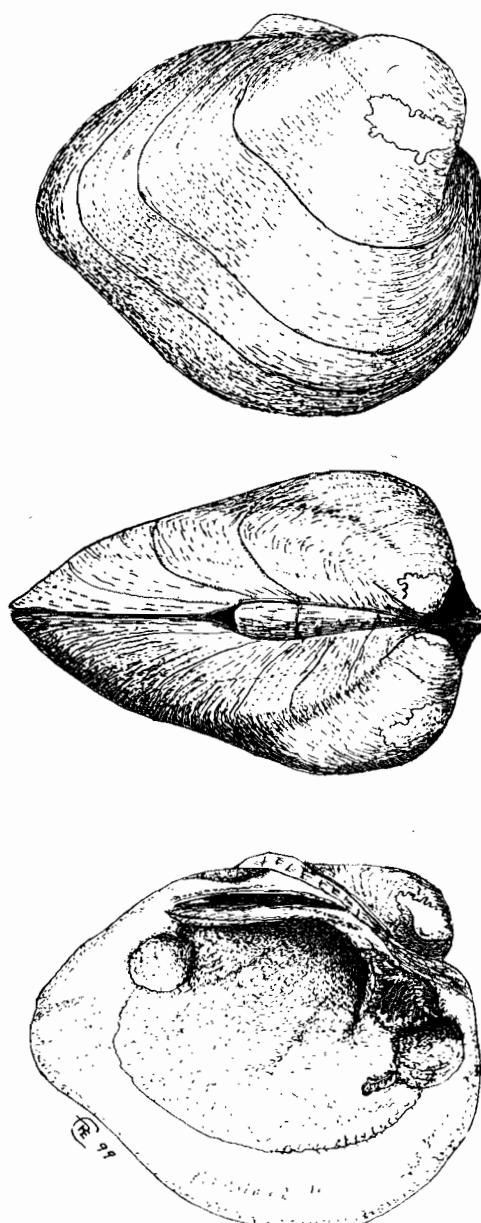
UNIO OBLIQUUS Lamarck.



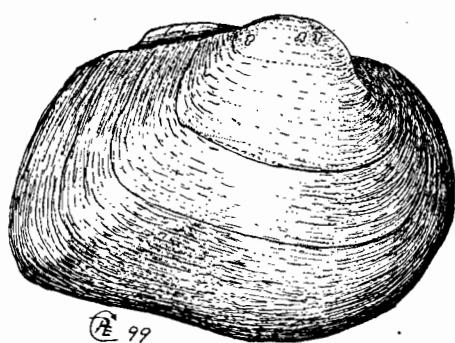
UNIO EBENUS Lea.



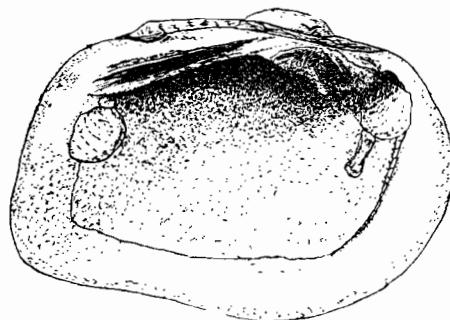
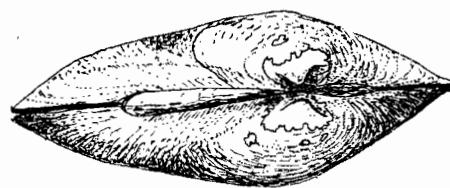
UNIO SOLIDUS Lea.



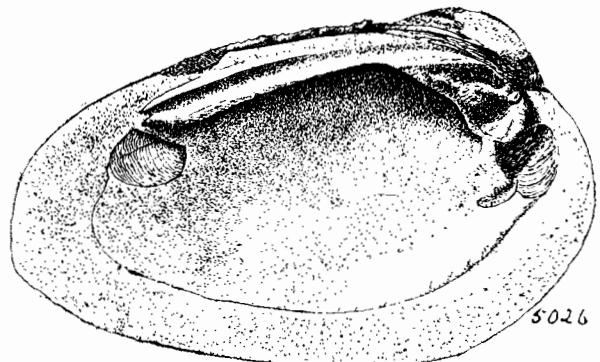
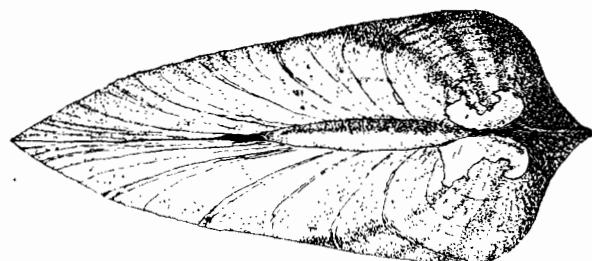
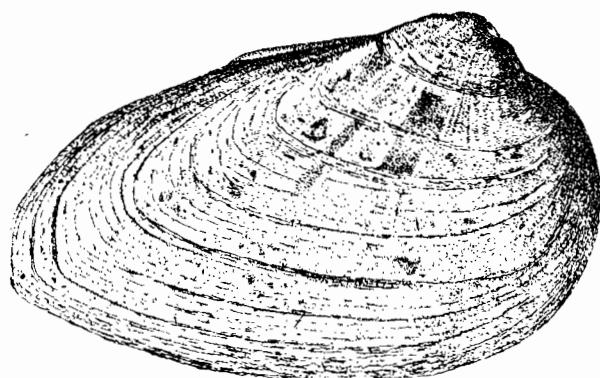
UNIO TRIGONUS Lea.



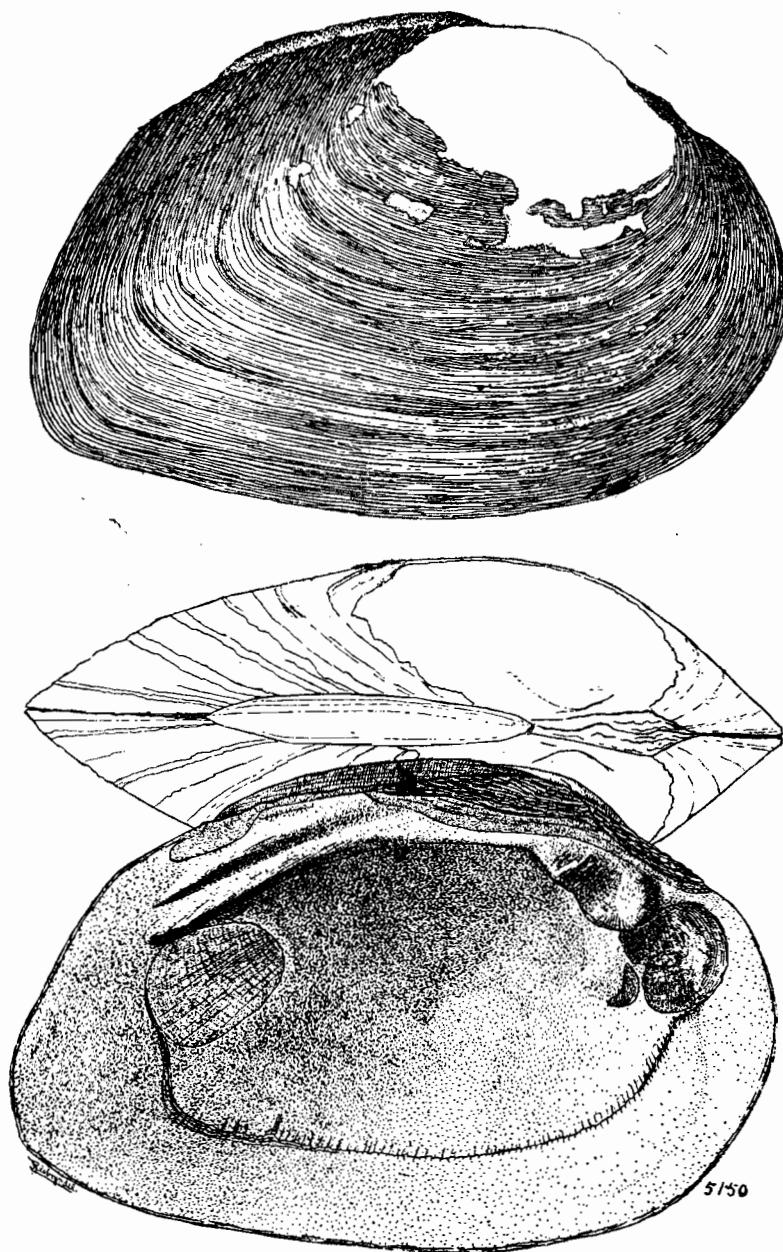
(Pl. 99)



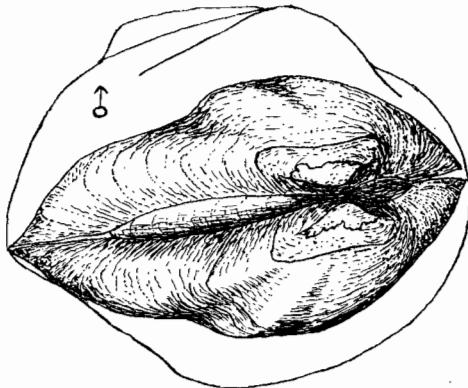
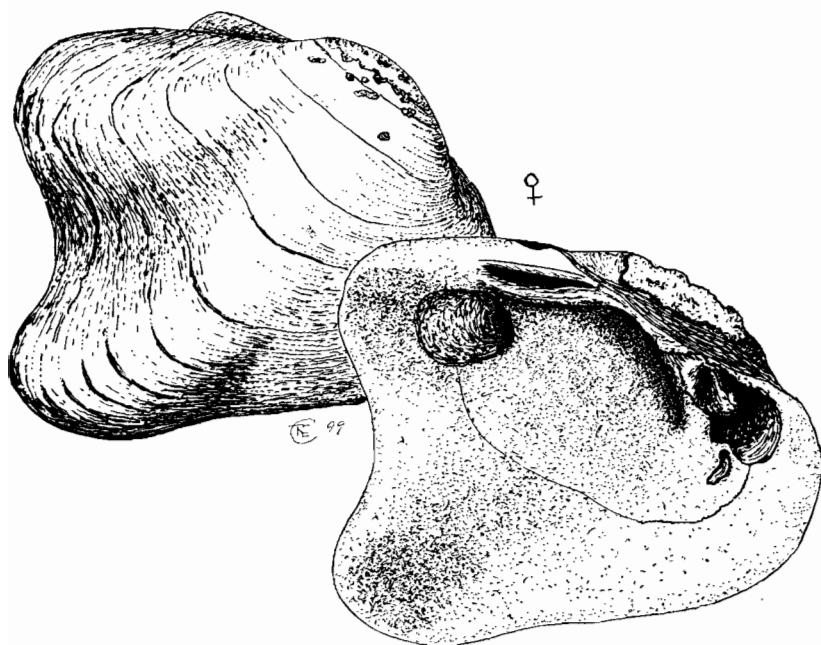
UNIO RUBIGINOSUS Lea.



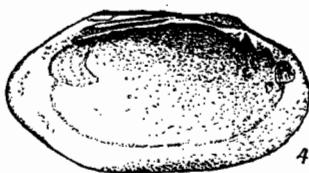
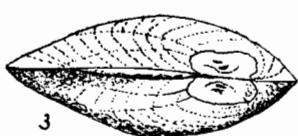
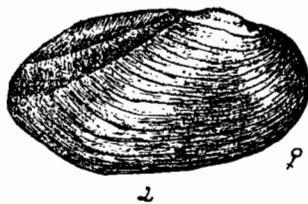
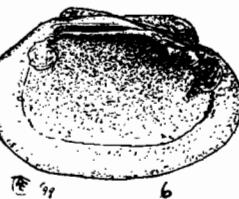
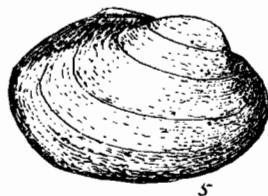
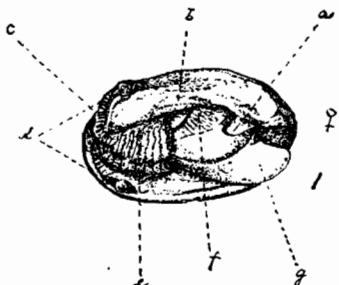
UNIO CLAVUS Lamarck.



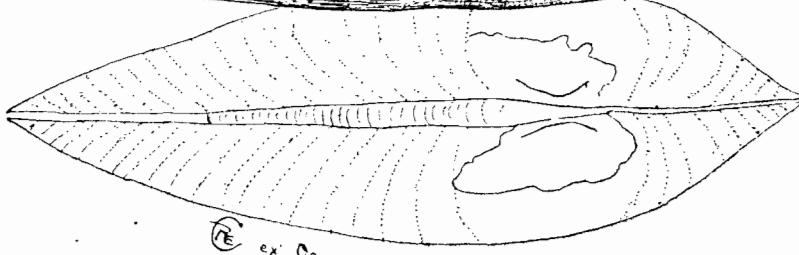
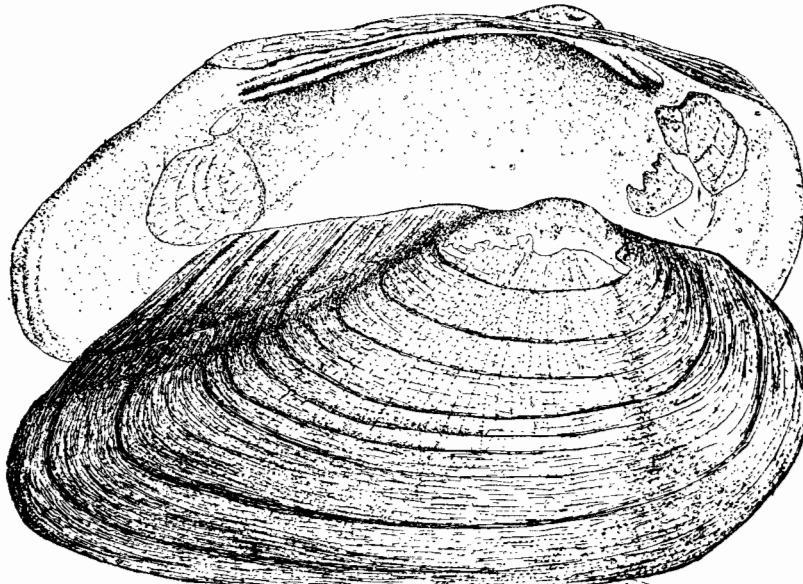
UNIO CRASSIDENS Lamarck.



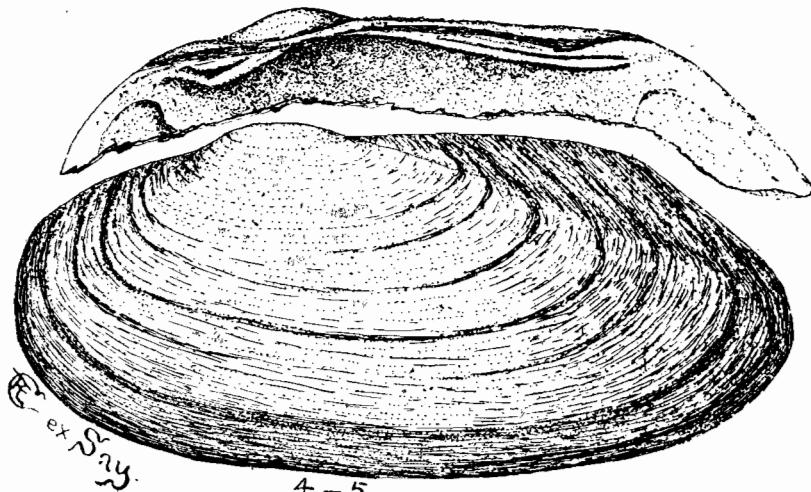
UNIO FOLIATUS Hildreth.

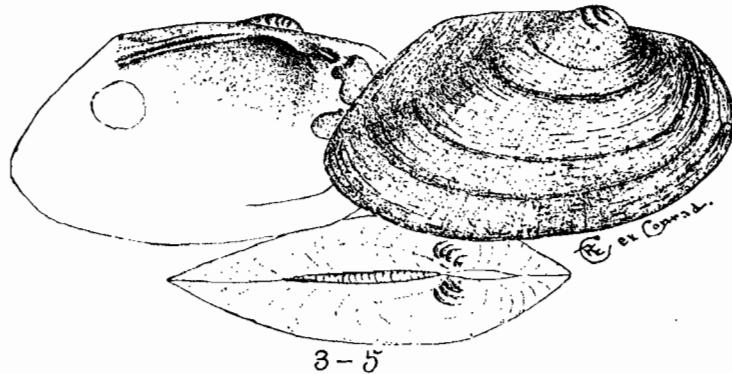
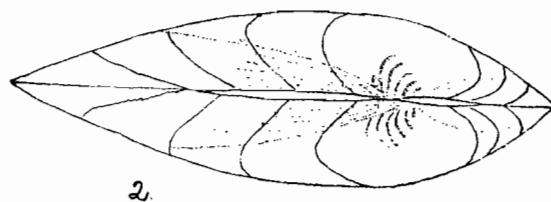
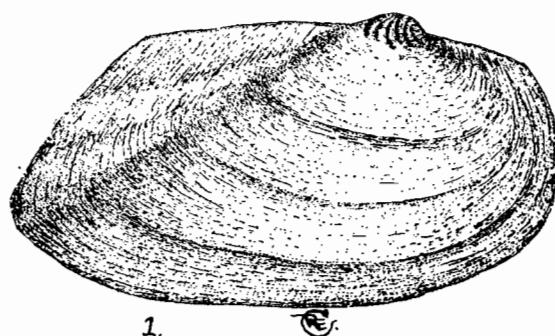


1-4, *UNIO PARVUS* Barnes.
5-7, *UNIO GLANS* Lea.

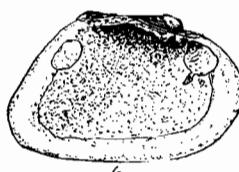
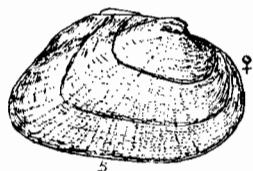
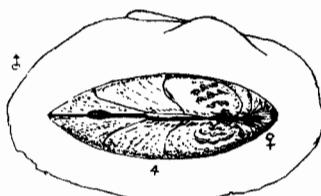
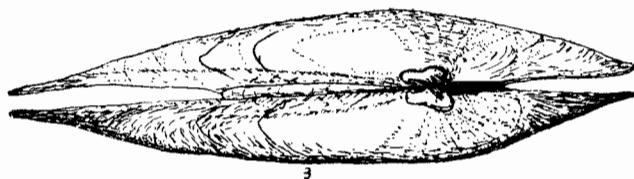
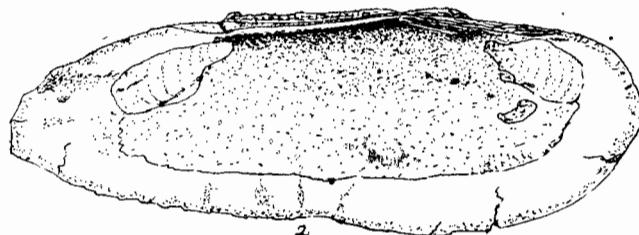
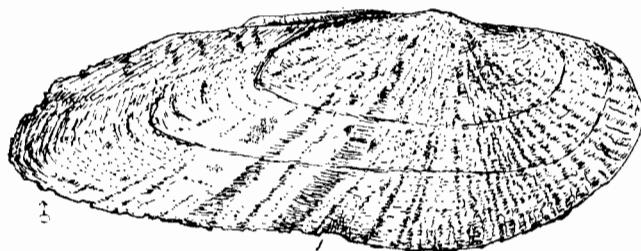


1 - 3.

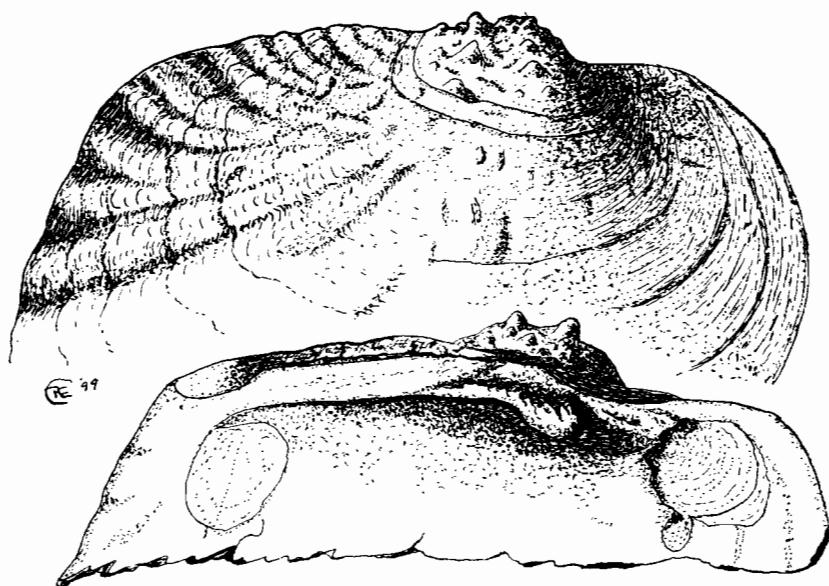
4 - 5
UNIO TETRALASMUS Say.



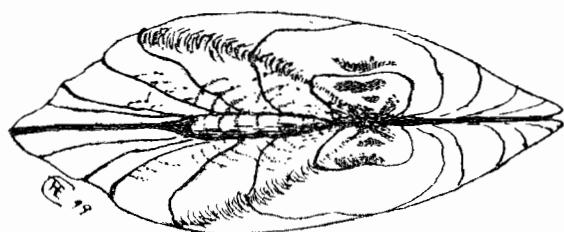
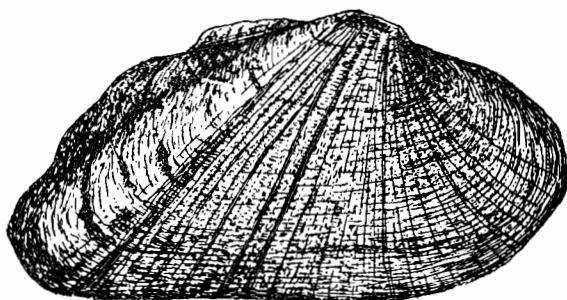
UNIO TETRALASMUS Say.



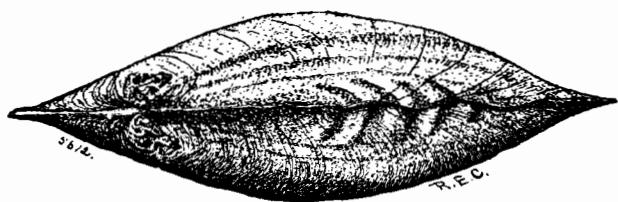
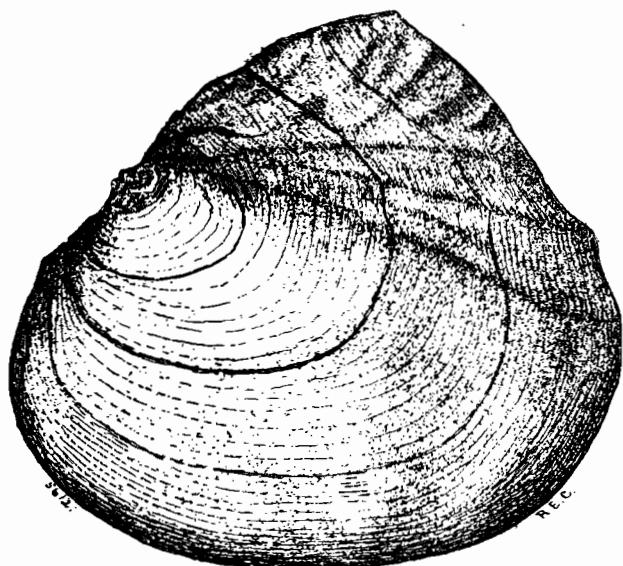
1-3, ANODONTA DEHISCENS Say.
4-6, MARGARITANA DELTOIDEA Lea.



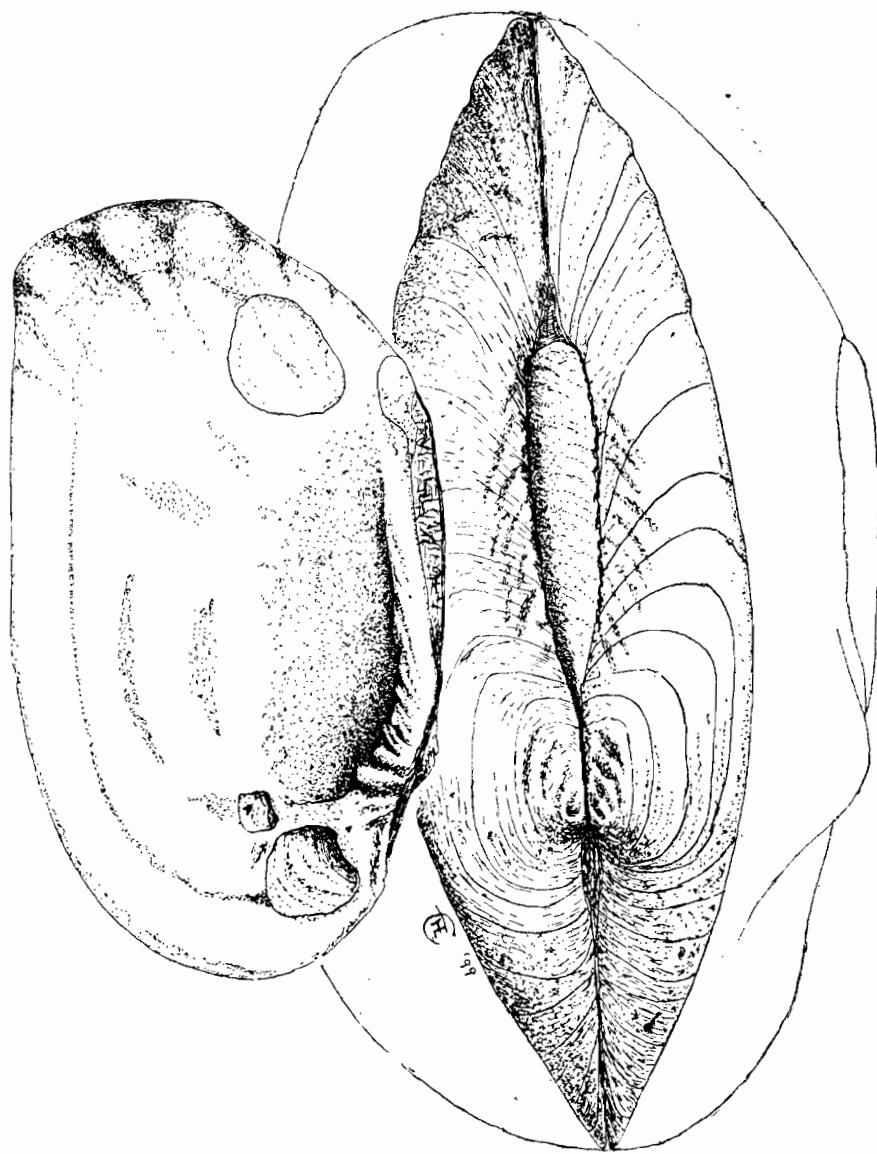
MARGARITANA CONFRAGOSA Say.



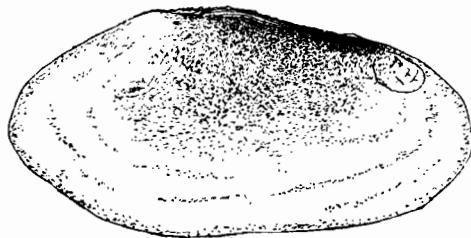
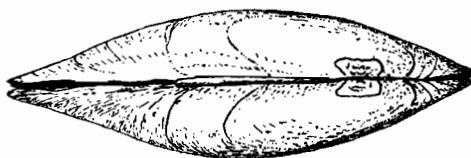
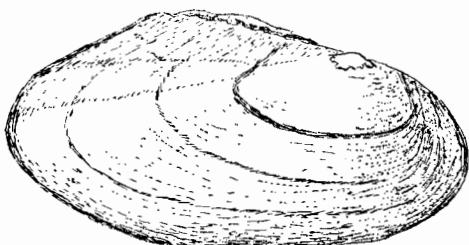
MARGARITANA MARGINATA Say.



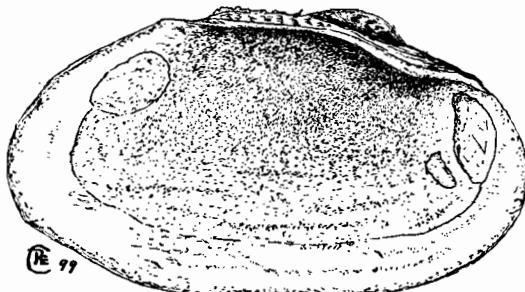
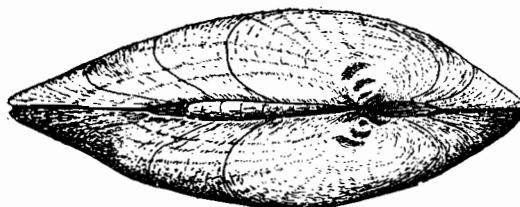
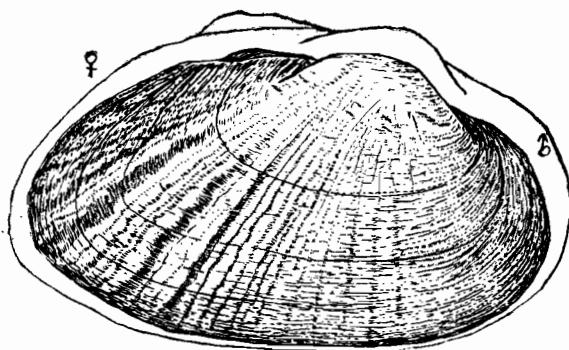
MARGARITANA COMPLANATA Barnes.



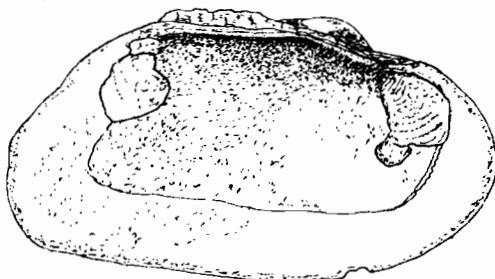
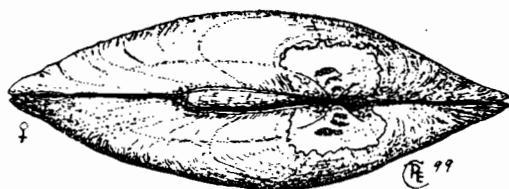
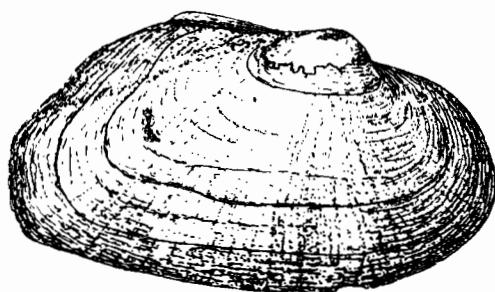
MARGARITANA RUGOSA Barnes.



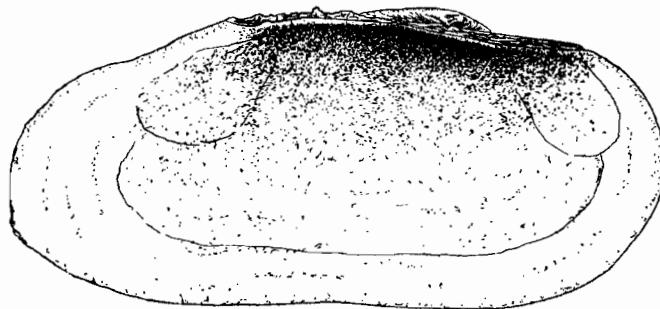
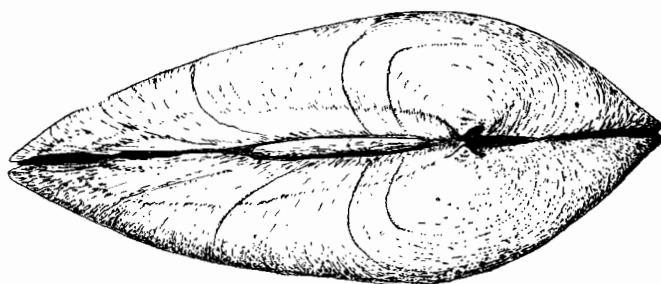
ANODONTA IMBECILLIS Say.



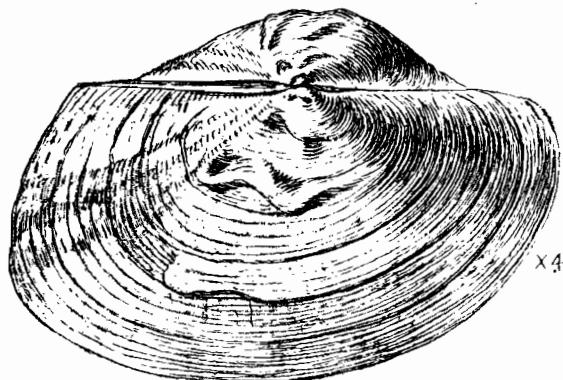
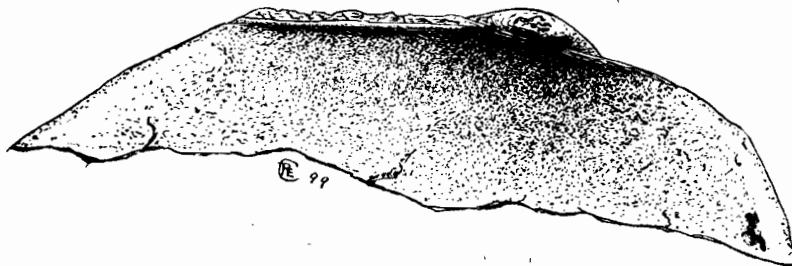
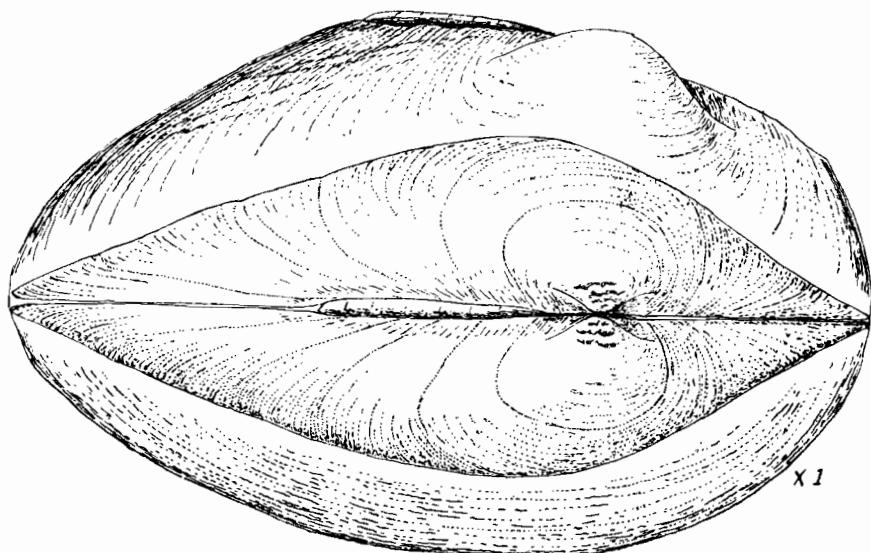
ANODONTA WARDIANA Lea.



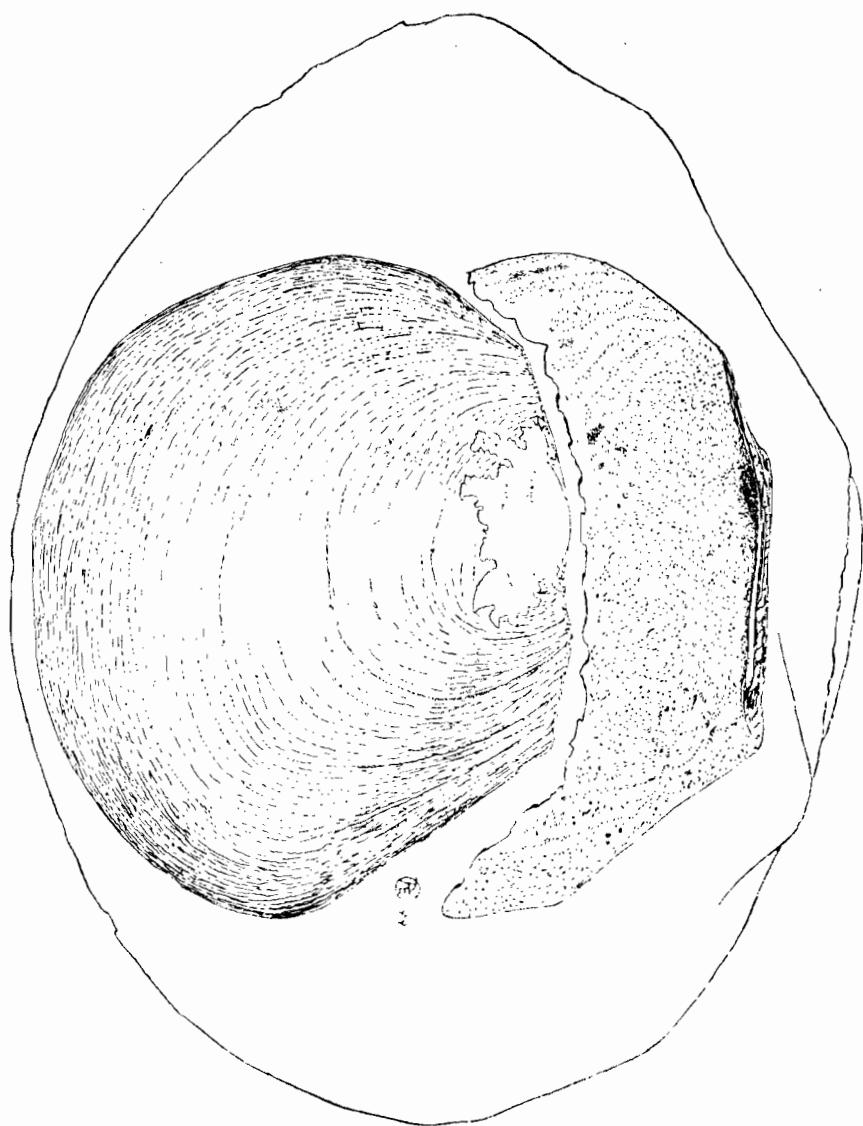
ANODONTA EDENTULA Say.



ANODONTA SUBCYLINDRACEA Lep.



ANODONTA GRANDIS Say.



ANODONTA SUBORBICULATA Say. (Reduced.)