KEY TO MOLLUSK IDENTIFICATION
(Species in Grabau's 1898/99 Book unless indicated by *)
- Dr. Rick Batt, 1998

GASTROPODS

1. a. Shell planispiral 2
   b. Shell trochospiral 4

2. a. Rapid expansion 3
   b. Gradual expansion ..... *Sinuitina* *

3. a. Concentric growth lines ..... *Ptomatis patulus*
   b. Strong revolving striae, central band ... *Retispira leda*

4. a. Whorls separated at least later 5
   b. Whorls remain in contact 12

5. a. Very gradual expansion ..... *Straparollus laxus*
   b. Rapid expansion 6

6. a. Apex pointed, no coil ..... *Orthonychia* *
   b. Relatively tiny initial whorls 7

7. a. Apex minute 8
   b. Apex slightly larger, closely inrolled 9

8. a. Irregular, longitudinal folds .... *Platyceras attenuatum*
   b. Strong carination (projecting ridge) ..... *P. carinata*

9. a. Body whorl relatively straight; shell "tall" 10
   b. Body whorl curved 11

10. a. Body whorl expands rapidly ..... *Platyceras erectum*
    b. Gradual expansion ..... *Platyceras thetis*

11. a. Nearly planispiral, concentric striae
    ..... *Platyceras symmetricum*
    b. Rounded longitudinal folds ..... *Platyceras bucculentum*

12. a. Shell very high-spired 13
    b. Shell low- to intermediate-spired 14

13. a. 12-13 whorls, whorls bulge *Palaeozygopleura hamiltoniae*
    b. 7-8 whorls, suture band .... *Palaeozygopleura delphicola*

14. a. Spire very low, may be depressed .... *Straparollus rudis*
    b. Spire low to intermediate 15

15. a. Spiral band on periphery 16
    b. No spiral band ..... *Naticonema lineata*

16. a. Concentric growth lines only ..... *Euryzone rugulata*
    b. Revolving ornament 17

17. a. Ornament fine, revolving and concentric 18
b. prominent revolving carinae 19

18. a. Larger, sub-globose, low-spired ..... Mourlonia lucina
b. Shell turbinate, higher-spired ..... Euryzone itylus

19. a. Higher spired, several revolving carinae crossed by concentric striae ..... Glyptotomaria capillaria
b. Low spired; strong, widely-spaced carinae ..... "Bembexia" planidorsalis

PELECYPODS

1. a. Hingeline straight or nearly so, with flattened anterior "ear," posterior "wing" 2
b. Hingeline does not have both ear and wing 13

2. a. Ear and wing subequal; shell scallop-like 3
b. Ear much smaller than wing; shell like pearl oyster 5

3. a. Wing extends less than halfway to posterior end; beak rounded ..... Pseudaviculopecten princeps
b. Wing extends at least halfway to posterior end 4

4. a. Shell nearly equidimensional; beak pointed ..... Pseudaviculopecten exacutus
b. Shell long (front to back); hinge extends most of length ..... "Pterinopecten" insignis

5. a. Ear non-distinct; wing blends into shell; nearly circular outline ..... Lyriopecten orbiculatus
b. Wing prominent 6

6. a. Ornament on both valves concentric only 7
b. Radiating ornament at least on one valve 8

7. a. Shell higher than wide ..... Leiopteria rafinesquii
b. Shell wider than high ..... Leiopteria conradi

8. a. Shell high; posterior wing large, well-defined; strong rays ..... Cornellites fasciculata
b. Shell equidimensional or wider than high 9

9. a. Shell nearly equidimensional; beak nearly central .. 10
b. Shell wider than high 11

10. a. Numerous sharp radiating striae; prominent concentric undulations ..... Pterinopecten undulosus
b. Radiating striae, few widely-spaced concentric striae ..... Pterinopecten conspectus

11. a. Beak only slightly anterior of center to 1/3 from center ..... Pterinopecten hermes

b. Beaks close to anterior end 12

12. a. Shell signif. wider than high; right valve w/radiating and concentric striae ..... *Actinopteria decussata*
b. Shell more nearly equidimensional .. *Actinopteria boydi*

13. a. Shell height greatly exceeds length 14
b. Shell equidimensional or signif. longer than high .. 15

14. a. Smooth, with ovate outline; tiny posterior wing ..... *Mytilarca oviformis*
b. Smooth, sub-triangular; truncated anterior, extended posterior ..... *Gosselettia retusa*

15. a. Shell nearly equidimensional 16
b. Shell longer than high 21

16. a. Shell smooth or with concentric ornament 17
b. Shell with radiating ornament 20

17. a. Ventral margin round 18
b. Shell small, angular 19

18. a. Shell nearly circular ..... *Paracyclas rugosa*
b. Hingeline pointed to straight ... *Pterochaenia fragilis*

19. a. Shell nearly rectangular ..... *Nuculites nyssa*
b. Shell sub-triangular ..... *Nuculites triqueter*

20. a. Shell nearly circular ..... *Glyptocardia speciosa*
b. Beak area narrow ..... *Lunulicardium curtum*

21. a. Beak at or close to anterior end 22
b. Beak near center of dorsal margin, shell somewhat rectangular ..... *Tellinopsis subemarginata*

22. a. Shell becomes significantly higher behind beak 23
b. Shell height does not increase signif. behind beak . 29

23. a. Beak at anterior edge 24
b. Beak behind narrow anterior lobe 25

24. a. Pronounced umbonal ridge ... *Goniophora modiomorphoides*
b. Shell small, no ridge ..... *Modiella pygmaea*

25. a. Beak projects above long straight hingeline ..... *Gramatodon hamiltoniae*
b. Anterior lobe slopes downward from beak 26

26. a. Shell small; strong widely-spaced concentric undulations ..... *Cypricardinea indenta*
b. Closely-spaced fine growth-lines 27

27. a. Shell significantly longer than high 28

b. Shell behind beak more equidimensional, deeper ..... Modiomorpha mytiloides

28. a. Shell larger; no umbonal ridge Modiomorpha concentrica
b. Shell smaller; well-marked umbonal ridge .. M. subalata

29. a. Shell tapers toward narrow posterior end 30
b. Posterior end broad, angular or rounded 33

30. a. Ventral marginal constriction 31
b. No ventral marginal constriction 32

31. a. Shell small; fine growthlines ... Paleoneilo constricta
b. Strong umbonal ridge; widely-spaced concentric lines ..... Paleoneilo emarginata

32. a. Shell small, beak about 1/3 back from anterior end ..... Nuculoidea corbuliformis
b. Shell small, long; beak closer to anterior ..... Nuculites oblongatus

33. a. Posterior end broadly angular 34
b. Posterior end broadly rounded 39

34. a. Shell more than twice as long as high 35
b. Shell less than twice as long as high 37

35. a. No umbonal ridge; elevated concentric striae ..... Paleoneilo muta
b. Umbonal ridge present 36

36. a. Umbonal ridge strong; beak pointed Sphenotus truncatus
b. Beak broadly rounded; shell very long Orthonota parvula

37. a. Beak pointed 38
b. Beak rounded; radiating lines ..... Pholadella radiata

38. a. Prominent anterior lobe; angular growthlines ... Cypricardella bellastriata
b. Anterior lobe not prominent, fine growthlines ..... Paleoneilo filosa

39. a. Strong concentric undulations 40
b. Fine concentric ornament 41

40. a. No umbonal sulcus ..... Grammysioidea arcuata
b. Umbonal sulcus ..... Grammysia *

41. a. Sl. notch in posterior edge Cypricardella tenuistriata
b. No notch 42

42. a. Posterior end more narrowly rounded ... Eoschizodus sp.
b. Posterior end broadly rounded ... Glossites nuculoides