**Lab #11 for Paleontology, AGLY 311**

**University of South Carolina – Aiken,**

**Fall Semester, 2009**

**The “Cornpatch Formation”**

**Instructor: Ralph Willoughby Email: kralph3L@pbtcomm.net**

**DIRECTIONS TO STUDENTS**

Lab #11 involves picking, sorting, boxing, and identifying fossils (mostly mollusks but also bryozoa, arthropods, cnidaria, and annelids) from richly fossiliferous, clastic marine sediment, compiling a faunal list,comparing the fauna with modern taxa, and making evaluating a paleogeographic model for the taxa found. This exercise uses already-collected bulk sediment. The unconsolidated and richly fossiliferous nature of the sediment allows separation of abundant fossils in a fairly diverse assemblage with ease. Examine the fossils using a hand lens or stereoscopic microscope. Previous work has removed the larger specimens (larger than an inch, to gastropods of several inches). Examine those specimens and add those taxa to your faunal list.

The lab includes three main efforts. Work in groups of four to six students.

First, separate as many specimens of fossil taxa as you can from richly fossiliferous sediment of the “Cornpatch Formation” (Pleistocene) in northeastern South Carolina. Sort the specimens to separate species and place each species in a paper box or a small plastic box. Use the provided references (Abbott, 1974; Campbell, 1993; Morris and Clench, 1974; Kaplan, 1988) or other reference that the instructor approves to identify specimens to genus level (where possible) or higher taxonomic level. Pliocene, Pleistocene, and Holocene molluscan (and other) faunas in the south Atlantic to mid-Atlantic region are similar at the generic level. The references to regional Pliocene and modern faunas should suffice for this exercise. Place a label or identifying note in each box and include an identifier for your group of students.

Second, compile an overall faunal list from your group’s identified taxa.

Third, where possible, look up names of fossil genera in the modern references (as species in the genus). Determine the environments in which the modern (species and) genera live. As a starting point or “best guess”, assign that environment (those environments) to the fossil taxa in your faunal list. Do this for each fossil genus or taxon that your group identified. If you feel industrious, use a spreadsheet to help compile this information.

Fourth, from your faunal list and from your attributed environments, interpret a paleoenvironment for the fossil assemblage from the “Cornpatch Formation”. Consider the strengths and weaknesses of the reasoning that underlies your paleoenvironmental interpretation.

 Present your results in written form if lab time permits. If not, each group selects one member to orally present the group’s results.

**REFERENCES**

Abbott, R. T., 1974. American Seashells, The marine Mollusca of the Atlantic and Pacific Coasts of North America (second edition). New York, Nan Nostrand Reinhold Company, 663 p. incl. 6405 figs.

Campbell, L. D., 1993. Pliocene mollusks from the Yorktown and Chowan River Formations in Virginia. Charlottesville, Virginia Division of Mineral Resources Publication 127, 259 p. Text, p. 1-124; appendices, p. 125-174; 43 pls., p. 172-259.

Morris, P. A. (edited by W. A. Clench), 1975. A field guide to shells of the Atlantic and Gulf Coasts and the West Indes (third edition). Peterson Field Guide Series. Boston, Houghton Mifflin Company, 330 p. incl. 76 pls.

Kaplan, E. H., 1988. Southeastern and Caribbean Seashores. Peterson Field Guide Series. Boston and New York, Houghton Mifflin Company, 425 p. incl. 65 pls.