Valvata, Lymnaea, Gyraulus, Armiger, Vorticifex, Planorbella, and *Physa.* Of the mollusks sampled there seems to be no dramatic change in the types of mollusks. However, there is a general build up of numbers of individuals in the population so that there are 20,109 in layer "D."

Mollusks from other localities in the Lower Grand Coulee also aided in the interpretation of the Pleistocene deposits. North of the primary locality, near Sun Lakes State Park, an outcrop of mollusks, volcanic ash, and silt showed a proportional increase in the number of *Vorticifex* and an increase in the shell thickness of the *Anodonta* compared to the primary assemblage, L65-1. This indicates that there was more current and oxygenation taking place in this area near Sun Lakes State Park than at L65-1.

From the faunal and geological evidence, it appears that these deposits are of lacustrine origin. The source of the water for this lake, Lake Bretz was, for the most part, the Columbia River. There are indications that the Columbia overflowed its canyon near the present site of Grand Coulee Dam. The cause of this was the downstream ponding of the Columbia in Lake Lewis. This overflow then supplied Lake Bretz with water at a fairly slow current. Lake Bretz was then drained through Rocky Ford Coulee to Moses Lake and later into Lake Lewis. When the latter lake ceased to exist, Lake Bretz without its supply of water gradually became smaller, breaking up into the present five or six small lakes. These lakes, Bretz and Lewis, probably lasted only 50–100 years. The highest stable lake level of Lake Bretz was 1158 ± 1 feet. This was determined through the use of U. S. Geological Survey quadrangle maps and Bureau of Reclamation surveys. Lake Bretz is named in honor of J Harlen Bretz, who did so much of the early work on the Pleistocene in eastern Washington and the Channeled Scablands of Washington.

Only three species of terrestrial gastropods were found and were represented by a total of eleven individuals. Their occurrences are best explained by chance washing of dead shells into the lake from adjacent land. These mollusks indicate only that there was probably some vegetation near the edge of Lake Bretz.

LIFE HISTORY OF *PLEUROBEMA CORDATUM* (RAFINESQUE, 1820) (BIVALVIA: UNIONIDAE)

PAUL YOKLEY, JR.
Department of Science, Florence State University, Florence, Alabama

ABSTRACT

The Ohio Pigtoe Mussel, a commercially valuable species, inhabits the largest rivers of the Ohio River drainage system, and occurs in concentrations or "mussel beds" in the Tennessee River. Oogenesis and spermatogenesis occur at cyclic intervals throughout the year with spawning and fertilization in April and May. Glochidia are formed in four to six weeks after fertilization in the marsupial outer gills. The parasitic glochidia, released mainly in June, attach to the gill filaments of the Rosefin Shiner, *Notropis ardens* (Cope), encyst, and transform into independent mussels in fourteen to eighteen