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AMERICAN MALACOLOGICAL UNION SYMPOSIUM
RARE AND ENDANGERED MOLLUSKS

3. EASTERN FRESHWATER MOLLUSKS (II) THE SOUTH ATLANTIC AND GULF DRAINAGES

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INTRODUCTION

The eastern United States contains over 50 major drainage systems, as well as many smaller ones, between the St. Croix River on the Maine - New Brunswick, Canada, border and the Rio Grande River on the Texas - Mexico border. In addition, the interior drainages contribute to the very extensive Mississippi River and Great Lakes - St. Lawrence River watersheds.

The coastal drainages have been designated by Simpson (1900) and H. & A. van der Schalie (1950) as comprising the Atlantic and Apalachicolan, as well as part of the Interior Basin (= Mississippian), faunal regions for unionid mussels. The Atlantic region has been divided into a northern and a southern element, with the Potomac River drainage employed as the demarcation between the 2 parts. This report will cover the freshwater gastropods and bivalves of the South Atlantic Region from the Potomac River in Maryland to the St. Marys River on the Georgia - Florida border, peninsular Florida, the Apalachicolan Region, and the southern-most portion of the Interior Basin (i.e., the Alabama River system west to the Rio Grande drainage in Texas).

Unfortunately, there are significant gaps in our knowledge of the taxonomy, phylogenetic relationships, and geographical and ecological distribution of the mollusks of many of the drainages. Efforts have been made in recent years to correct our ignorance, and it is hoped that the effect of this symposium will be to stimulate both further and more intensive research in these areas.

THE NATURE OF THE FAUNA

In general, the streams flowing into the Atlantic Ocean and Gulf of Mexico contain rather endemic mollusk elements. Each region or subregion is characterized by the presence and/or absence of various genera and species, and even within a single region striking differences in the fauna may occur from one stream to another.

For example, one-half of the entire mollusk fauna of the Apalachicolan Region is endemic (e.g., *Notogillia* Pilsbry and *Quincuncina* Ortmann), about one-quarter extends southward into central Florida (Clench & Turner, 1956). Examining the mussel fauna (Unionidae) separately, one finds that one-fourth of the species are endemic, another quarter are related to eastern (South Atlantic) species, and half of the species have western (Interior Basin) affinities (van der Schalie, 1940).

Within this same Apalachicolan Region, different drainages often have different assemblages of mollusks, i.e., vary in the numbers and kinds of species present. In comparing the elements of the whole region, Clench & Turner (1956) clearly point out that the Apalachicola River (with its major tributaries, the [illegible]attahoochee and Chipola rivers) contains the greatest total number of species, [illegible]

reflect largely personal observations; a few conditions were taken from the literature. Further information is currently being assembled on the freshwater mollusks of peninsular Florida and the drainages of the South Atlantic Region, principally by the workers at Harvard's Museum of Comparative Zoology. More complete data will be provided when their studies are published.

Species of Decreased Abundance/Distribution

The natural ranges of many species of plants and animals are diminishing, largely due to human alteration of the environment(s). This circumstance is demonstrated, in part, by the reduced abundance of organisms in an area. Unless at least a few breeding individuals can be maintained, the population will become extinct. And if this course is followed by numerous populations, the species may be summarily reduced in its geographic distribution and perhaps eventually experience total extinction.

Pomacea paludosa Say (Gastropoda: Pilidae) occurs in southern Georgia and Alabama and throughout Florida. Because of the activities of the U.S. Army Corps of Engineers, large tracts of the Everglades in southernmost peninsular Florida have been drained. One result of this action has been the destruction of this snail's habitat, and consequently their numbers have decreased in this region. Similarly, the Florida kite, a bird which preys upon *P. paludosa* in the Everglades, is diminishing in numbers.

Another example concerns two unionid clams. In 1963 *Anodonta imbecilis* Say and *A. peggyae* Johnson occurred in approximately equal numbers in Lake Talquin (the type locality of *A. peggyae*!), a reservoir of the Ochlookonee River, Leon-Gadsdon County, Florida. Since that time, however, *A. imbecilis* has become all but extinct and *A. peggyae* has become drastically reduced in numbers in the impoundment. This situation has evidently been wrought principally by the Florida Fresh Water Fish and Game Commission which has administered rotenone to the reservoir to remove a pest fish, the grizzard shad (= *Dorosoma cepedianum*). After such treatment, the shore is littered with numerous decaying bivalves of several species.

Clench & Turner (1956) state that *Goniobasis albanyensis* Lea (Gastropoda: Pleuroceridae) probably formerly occupied the entire Apalachicola River system but that it now is confined to the Flint and Chattahoochee tributaries. Farming and consequent silting is listed as the cause of the decline not only of *G. albanyensis* but also of *G. boykiniana* (Lea) which is considered nearly extinct.

Notogillia wetherbyi Dall (Gastropoda: Hydrobiidae) is recorded by Clench & Turner (1956) as inhabiting the St. Johns, Suwannee and Apalachincola drainage systems. It has also been discovered as fossil along the McBride's Slough tributary of the Wakulla River in Wakulla County, Florida. For unknown reasons, it is extinct in that drainage now.

Extinct Species

Although several fossil species of freshwater mollusks have been described from the South Atlantic and Gulf Coastal drainages, very few have become extinct in comparatively recent times.

Ordinarily, a list of such species would include those of the genus *Tulotoma* Haldeman (Gastropoda: Viviparidae). However, in the past few years intensive collecting by Mr. Herbert Athearn of Cleveland, Tennessee, has located 1 living population each of 2 species, *T. angulata* (Lea) and *T. magnifica* (Conrad), in the Coosa River tributary of the Alabama River. The Coosa River is crossed by a number of dams, and the attendant impoundments as well as silting and pollution have served to drastically alter the original aquatic fauna(s). Consequently, the 2 populations of *Tulotoma* may represent the last remnants of this genus.

Among the pleurocerid snails, Clench & Turner (1956) list *Goniobasis catenoides*