named new genus, species

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Drew Gentry, UAB Ph.D. candidate, examining the fossils of Asmodochelys parhami. (Photo courtesy of McWane Science Center)

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A study from researchers at the University of Alabama at Birmingham have revealed that fossils found in west Alabama belonged to a turtle who swam the seas 75 million years ago.

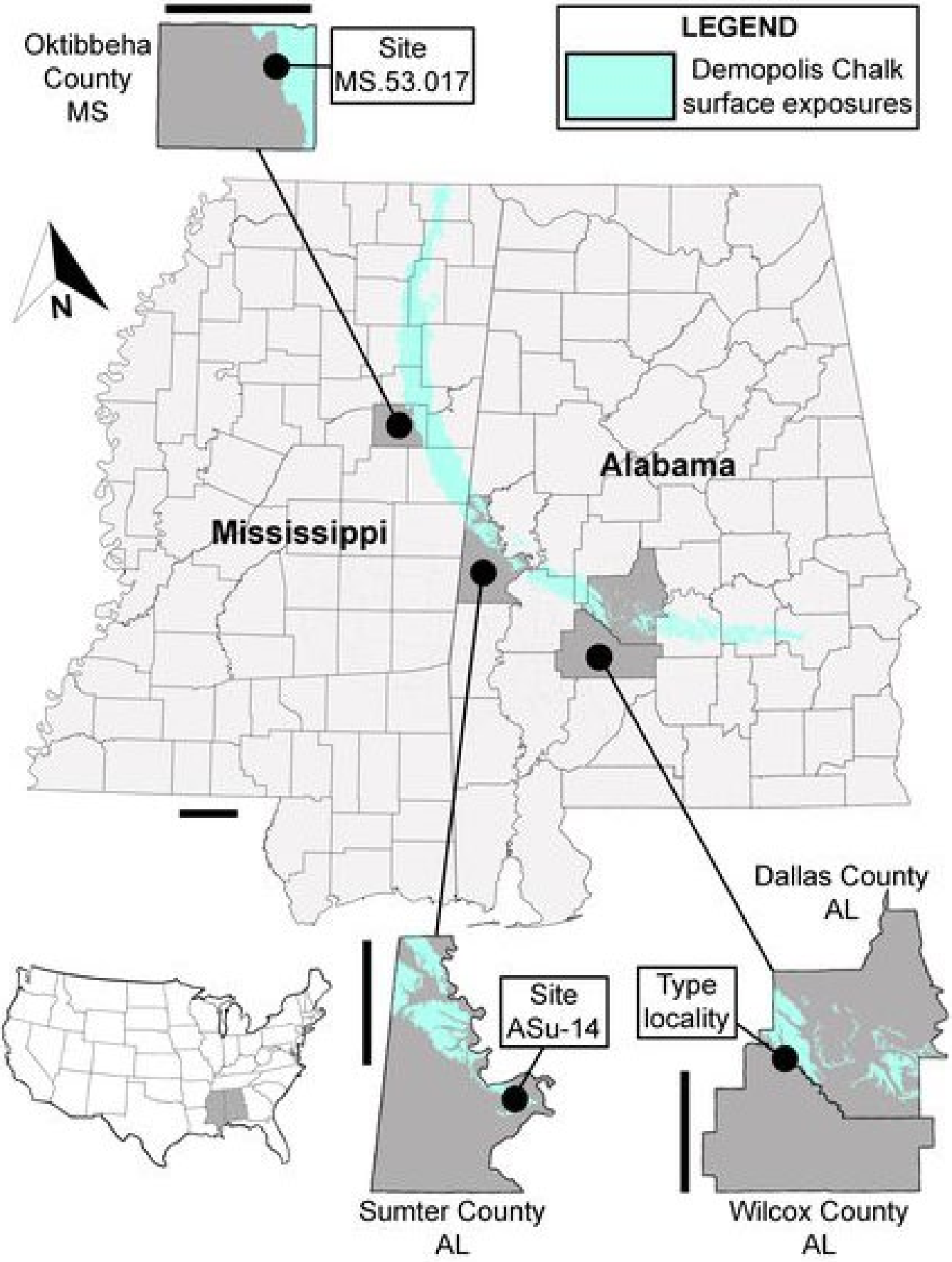
The discovery of the new genus and species of sea turtle may fill a gap in the animal's evolution, according to UAB.

Drew Gentry, a UAB Ph.D. candidate who led the study, said the origin of the sea turtle is "is one of the great unsolved mysteries in evolutionary biology." He said, "There is a great deal of evidence indicating that turtles may have evolved to live in the ocean several times over the past 150 million years. The trick is determining which of those species are actually the direct ancestors of the species we see today."

The fossils were discovered in west Alabama, in both Sumter County and Wilcox County, and east Mississippi, in Oktibbeha County. Two of the three specimens were found by amateur fossil collectors more than 20 years ago and donated to various museums; but, the fossils were never examined until this study. The third specimen was found by Caitlin Kiernan, who is also one of the co-authors on the paper.

Scientists named the animal Asmodochelys parhami. The name Asmodeus comes from an Islamic lore about a deity that was entombed in stone at the bottom of the sea, according to UAB; the name ‘parhami’ is in honor of the former curator of Paleontology at the Alabama Museum of Natural History James F. Parham, who UAB said made many contributions to Alabama paleontology.

The study shows Asmodochelys parhami could be one of the most recent common ancestors of modern-day sea turtles. To determine the relation, UAB said researchers performed a phylogenetic analysis to compare the features of different turtle species to see how closely, or distantly, related the species could be. The findings revealed a new genealogy of sea turtles.



The fossils were found at three sites shown on this map (Contributed | UAB).

The genealogy showed Asmodochelys parhami is one of the youngest

species to fall outside the group with most every species of modern sea turtles, the study showed.

“Although it’s tempting to say ‘problem solved’ when we recover such a well resolved tree, this is only one hypothesis in a long line of suggested sea turtle genealogies,” Gentry said. “Right now, there are several distinct trees proposed by different groups of scientists that are the front-runners in the race to solve sea turtle evolution, each with its own unique arrangement of fossil and modern species. Determining which tree most accurately represents the evolutionary history of these animals can be challenging, to say the least.”

“New methods for testing how fossil species are related to modern species are constantly being developed. Also, discoveries of new fossils have the potential to radically change our understanding of how certain features and species evolved in the history of life on our planet,” he said. “Our study is just another piece of evidence in an ongoing mystery that shows no sign of being solved any time soon.”

The study was published in the journal Royal Society Open Science.