

efforts philosophers have long been making toward an understanding of social, economic and political conditions conducive to scientific endeavor.

At least in these ways I have described I am confident that philosophy has been and will continue to be a functioning partner in the grand enterprise of learning better the nature of the world to the betterment of the human condition. And, I trust that if I have not convinced you as yet of the right of my interpretation that I have, nevertheless, stimulated you to further exploration of the subject.

### AN OCCURRENCE OF A PLEUROPTERYGIAN SHARK IN THE CHATTANOOGA SHALE OF TENNESSEE

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Recent investigations by the University of Tennessee of the Chattanooga shale under contract for the U. S. Atomic Energy Commission have included the Dale Hollow Reservoir area, Clay County, Tennessee. The upper few feet of the Chattanooga shale in this area generally contains abundant nodules of phosphate in distorted gray-black shale. Many of these nodules enclose conodonts and *Lingula* species. Other kinds of fossils are unknown.

The present report concerns a fish preserved in a phosphate nodule from the top of the Chattanooga at the junction of Lick Run and East Fork Creek, Dale Hollow Reservoir, Clay County, Tennessee. This exposure is intermittently submerged by the lake, and the lower part of the Chattanooga shale is now permanently covered.

The fossil is embedded in a nodule of ovoid shape, approximately five inches long and two inches thick. A brain case, visceral skeleton, and pectoral fin are present. The displayed attributes of these structures indicate the fish to be a pleuropterygian shark, and probably of the genus *Cladoselache*. This generic assignment of the specimen is principally based on the presence of secondary rays interspaced between the tips of the primary radial elements of the pectoral fin. No teeth are preserved, and the incompleteness of other important characters precludes definitive specific identification. It is of interest to note that, as in the cladoselachian materials found near Cleveland,

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Ohio (Dean, 1904, 1909), this specimen exhibits evidences of the hypobranchial and segmentally arranged body musculatures.

The genotype of *Cladoselache* is derived from the Upper Devonian Olmsted shale of Ohio. The youngest occurrence of the same genus is based on the identification of a caudal fin, *C. pachypterygius*, Dean (1909), found in one of the phosphatic nodules from the base of the Waverly shale in Kentucky. No previous report of *Cladoselache* in Tennessee is known to these writers.

The specimen is deposited at the U. S. National Museum as No. 20675.

#### REFERENCES

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### CUNA UCHUS AND CATHOLIC SAINTS<sup>1</sup>

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When the Spaniards first explored Central and South America, they found so much in the religion of the Amerinds that superficially resembled Catholicism that they said St. Thomas, after visiting India, had sailed on to America and had converted the aborigines to Christianity. That idea was enticing because the Incas were found to have priests, nuns, and confessions. They used incense. Among many tribes there were saviors sent from heaven, even white and bearded ones, who preached morals and religion, and then went away promising to return. There were prophets. The sign of the cross was employed to subdue devils that possessed persons and places. There were heavens and hells, last judgments and punishments.

Not having delved very deeply into the details of these striking resemblances between Indian beliefs and Catholicism of the sixteenth century, the Spaniards of early conquest days believed the story about St. Thomas, and their descendants still tell the Cuna Indians, much against the protests of the latter, that their uchus (medicine dolls) are really Catholic Saints.

The problem of the Cuna uchus has been attacked several times. G. R. Fairchild, Jr., visited the Sassarti Islands in 1924 and gave out the "Old Scotch Doctor" story. According to this, the physician of Paterson's ill fated Scotch Colony at Ailodon Mutlu near Acla refused to leave when the Spaniards expelled

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