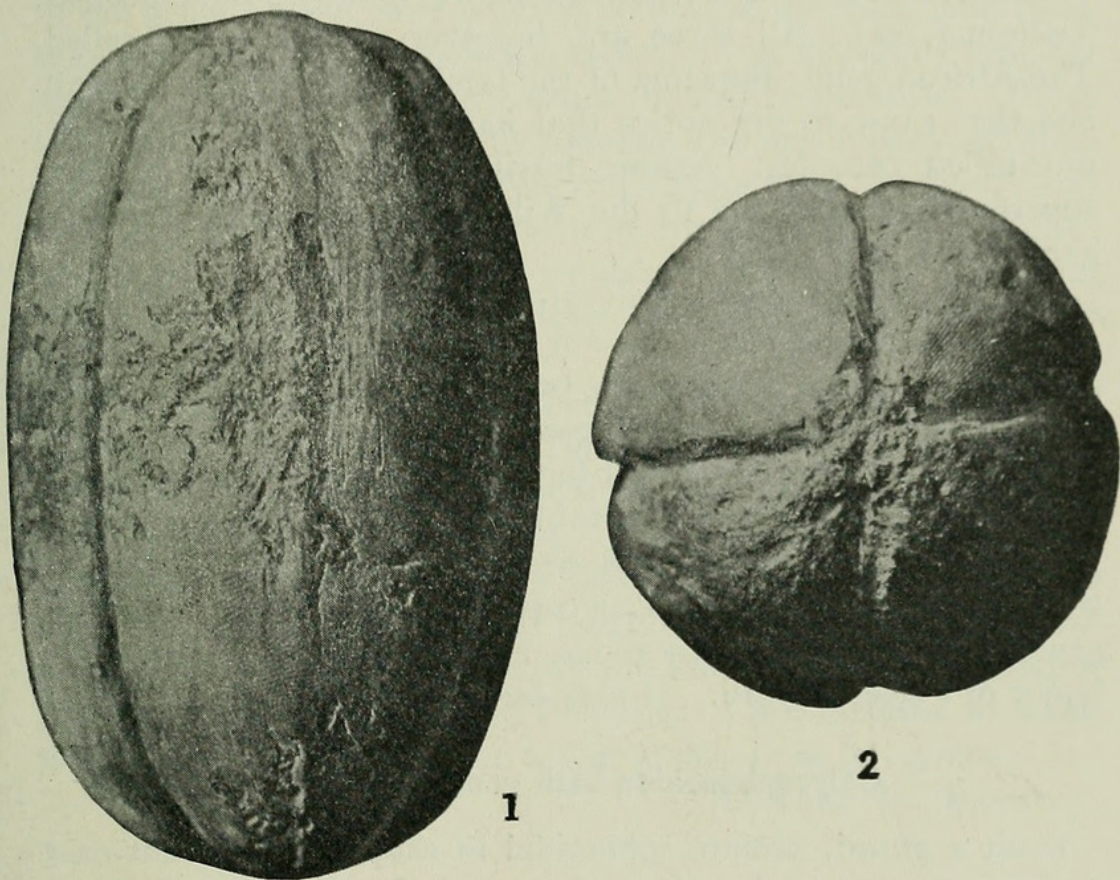


## A CUCURBITACEOUS FRUIT FROM THE TERTIARY OF TEXAS

The large fruit which is the subject of the present contribution was sent to me in 1921 by Professor O. M. Ball of the Agricultural and Mechanical College of Texas, who obtained it from a student who had picked it up on the surface in Foard County, in that state.

According to the geological map of Texas published by the University of Texas in 1919, the whole of Foard County is underlain



*CALCOPHYSOIDES BALLI* gen. et sp. nov.    Nat. size

1. From side

2. From end

by undifferentiated Permian. About fifty miles to the west of the County the eastern boundary of the Cenozoic deposits of the Great Plains province is placed. These last comprise the Panhandle and Clarendon Miocene, the Blanco Pliocene, the Tule or Rock Creek Pleistocene, and other unnamed deposits. Some of these undoubtedly extend farther to the eastward than they have been mapped, and it was from some such outcrop of unconsolidated Tertiary, possibly of very limited extent, that the present fossil was obtained.



I was impressed with its resemblance to the capsular fruits of various members of the order Malvales and entertained no doubt but that its determination would prove to be a simple matter. Such was not the case, for a diligent search of collections and of the literature, and consultation with a number of systematic botanists proved to be without results of any value.

Exteriorly the specimen appeared to represent a coriaceous or ligneous, four-valved, indehiscent capsule with parietal placentae, suggesting comparisons with various existing Sterculiaceae and Bombacaceae such as the genera *Pachira*, *Bombax*, *Bombacopsis*, *Tribroma*, etc. All these are, however, normally five-celled. The African genus *Bersama* of the family Meliaceae is the only one that came to my notice that has somewhat similar, large, four-celled capsules. Among fossil forms there was a great superficial resemblance to the Wilcox Eocene genus *Sterculiocarpus*, also five-celled.

Sections of the fossil fruit at once revealed the fact that, despite its appearance, it was not capsular in nature, since there are no traces of partitions in the transverse section, and it became evident that the specimen represented an interior cast of a hard shelled, gourd-like fruit, and I have no doubt but that it should be referred to the family Cucurbitaceae. A new genus is here proposed for its reception, and, because of its resemblance to the tropical American genus *Calycophysum* of Triana, this new genus is called *Calycophysoides*, and the species is named in honor of Professor Ball. It may be described as follows:

***Calycophysoides balli* gen. et sp. nov.**

Fruit a gourd, prolate spheroidal in shape, the interior cast 8.3 centimeters in length and 5.1 centimeters in maximum diameter, with four parietal placentae not equally spaced nor equally developed, in life filled with pulpy material and containing numerous small seeds. What appear to be the outlines of seeds are preserved around the periphery of the cast where they have been eroded out or rotted away subsequent to calcification. These appear to have been relatively small, 3 to 4 millimeters in length, broader and more rounded at one end, bluntly pointed at the other, and with one diameter greater than the other, that is, they were slightly compressed. Allowing for the hardened pericarp which permitted the formation of the cast, the specimen



in life would have been at least 10 centimeters long and 6 centimeters in maximum diameter.

I have naturally not seen as much recent comparative material as I should like, but I have been impressed with the resemblance between the fossil and the fruits of the modern genus *Calycophyllum*, which, according to Pittier, embraces at least five species of vines of valleys below about 4000 feet in Colombia, Venezuela, Ecuador, and Bolivia. It may be, of course, that some related genus whose fruits I have not seen, as for example, in the genus *Sicana*, may be more similar to the fossil, and there may still exist, in the Mexican region, a less decidedly tropical member of the Cucurbitaceae which the fossil represents. Those who will take the trouble to compare the accompanying illustrations with Pittier's figures of *Calycophyllum brevipes*,\* and especially with the section shown on his plate 30, will, I think, be forced to admit the great similarity between the fossil and this modern fruit, and will at least concede that its reference to the Cucurbitaceae is correct.

It is regrettable that the exact age of the fossil can not be determined. It is obviously Tertiary. If it be considered to represent a modern tropical genus it can scarcely be younger than late Eocene or Oligocene. If, on the other hand, it represents a modern genus of the Mexican plateau region, which is suggested by its geographical location, it might very well represent an element in the flora of the Panhandle and Clarendon Miocene, or even the Blanco Pliocene. I am inclined to think that one or the other of the latter alternatives is correct.

EDWARD W. BERRY.

## SHORTER NOTES

### BULBOUS BLUEGRASS (*POA BULBOSA* L.)

This grass has been established many years in the lawns of Capitol Square, Richmond, Virginia. It is there regarded with disfavor because while making a beautiful green turf in late fall, winter and early spring, it turns black and apparently dies in June and then makes very unsightly patches. The grass was first brought to our attention in June, 1915, by Mr. John W.

\* Pittier, H., Cont. U. S. Natl. Herb., vol. 20, p. 487, pls. 27-30, 1922.



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