

OREOPANAX DAKOTENSIS,
A NEW SPECIES OF THE ARALIACEAE
FROM THE PALEOCENE OF NORTH DAKOTA

by ROBERT C. MELCHIOR
Bemidji State University
Research Associate in Paleontology,
The Science Museum of Minnesota

SCIENTIFIC PUBLICATIONS OF
THE SCIENCE MUSEUM OF MINNESOTA
New Series Vol. 3, No. 3

THE SCIENCE MUSEUM OF MINNESOTA
Saint Paul, Minnesota 55101

October 28, 1976

Standard Book Number 911338-20-9

Published by
THE SCIENCE MUSEUM OF MINNESOTA
Saint Paul, Minnesota 55101
October 28, 1976
Price 55c

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This paper is the first in a series describing the Wannagan Creek flora. The specimen described is from The Science Museum of Minnesota's site in the Tongue River Formation where work on the flora and fauna of the Paleocene has been in progress for several years. The quarry site is in a very pale, brown, clayey silt with many thin and discontinuous lignitic layers. Abundant plant fragments, leaves, and vertebrate remains have been recovered, most of which are excellently preserved. The site is apparently in a lacustrine backswamp, or oxbow deposit, with a median grain size of 6.5 phi, and an organic matter content of up to 15%.

The Araliaceae as a group have not been verified from the formations of the Fort Union Group (Brown, 1962) but have been reported from other Paleocene localities. Heer (1871), and Hollick (1936), among others, have reported leaves of *Aralia*. There is no record, however, of *Oreopanax* in the Fort Union; and no fruiting structures assignable to the genus have been found anywhere in the North American Tertiary.

Family ARALIACEAE

Oreopanax Dec. + Planch.

Oreopanax dakotensis n. sp.

Holotype. — SMM P75.9.40. (Fig. 1).

Horizon and Locality. — SMM Wannagan Creek Quarry, lower level, Tongue River Formation, NW¼ Sec. 18, T.141 N., R.10W., Billings County, North Dakota.

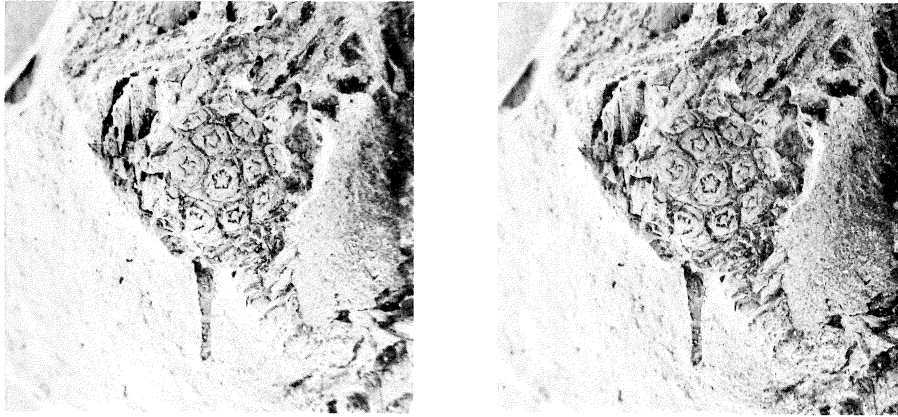


Figure 1
Oreopanax dakotensis, stereogram of holotype SMM P75.9.40. (x3).

DESCRIPTION

The globose fruiting head described here is excellently preserved with fragments of the original plant material still adhering to portions of the structure. The head is associated with a series of bracts that are severely contorted and do not lend themselves to precise analysis. Their length, however, is estimated to be at least as long as, or longer than, the head itself (Fig. 2). Bracteate heads are characteristic of the genera *Schefflera*, *Dendropanax*, and *Oreopanax*, but the bracts of *Schefflera* are typically shorter than the fruiting head if capitate (cf., *S. chinensis*), or, as in the case of *Dendropanax*, the fruits are subsessile, rather than sessile and compact on the head (cf., *D. oliganthus*). *Oreopanax* (cf., *O. flaccidus*) possesses the combination of bracts and sessile fruits in a dense head that is similar to the Wannagan Creek specimen.

The fruiting head consists of a number of sub-globose fruits closely aggregated in such a way as to produce deformation where the fruits are in contact. The fruits appear to have been somewhat dehydrated and wrinkled, either prior to, or during, burial. The apparent deformation, and the wrinkled appearance of the surfaces of the fruits suggests a fleshy pericarp, a condition typical of the Araliaceae which has generally baccate or drupaceous fruits.

The apices of the fruits bear a persistent calyx limb consisting of five apparently gamosepalous (at least at the base), arcuate segments that are abaxially concave. Adaxial to the calyx limb there is a raised, more or less circular, nectiferous disc that has the appearance of being fleshy. The fruits vary in size from 1.5 to 1.8 mm in diameter. There are twelve fruits discernable on the specimen, arranged in an oblately globose head measuring 5.5 by 6.5 mm. The small size of the fruits and head is typical of *Oreopanax*. The peduncle is 0.5 mm in diameter, increasing to 0.75 mm just below the head, another characteristic of *Oreopanax*.

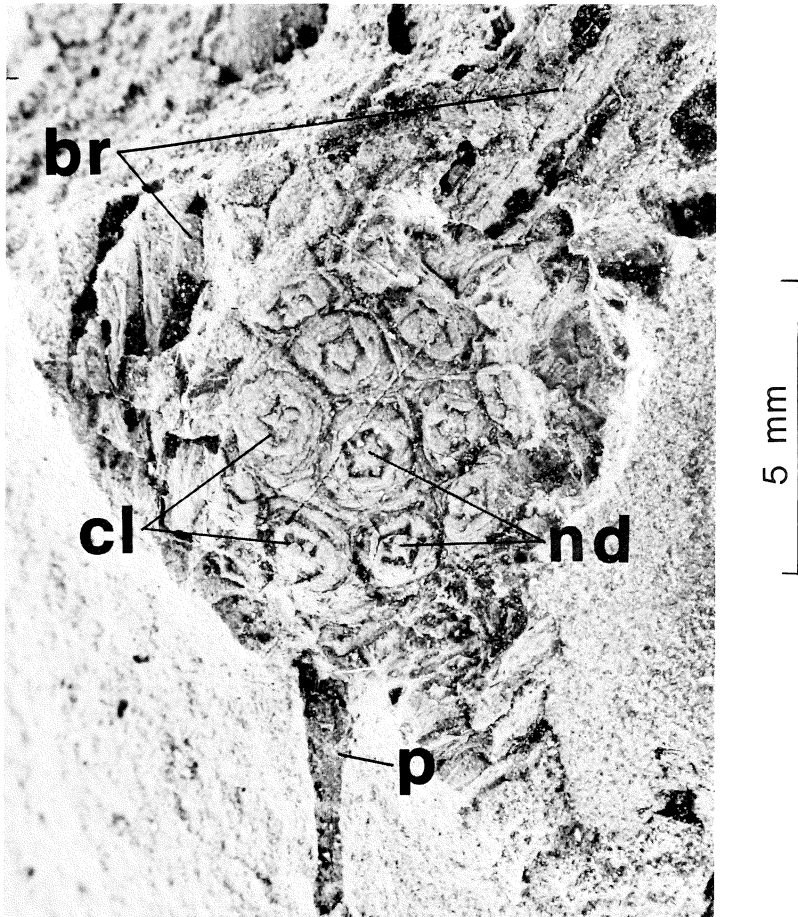


Figure 2

Oreopanax dakotensis holotype SMM P75.9.40. br, bracts; cl, calyx limb; p, peduncle; nd, nectiferous disc. Note the dehydration wrinkles on some of the fruits.

DISCUSSION

On the basis of the persistent calyx limb in a superior position, the carnose and persistent nectiferous disc, the sessile fruits arranged in a compact and apparently bracteate head, and the distally swollen peduncle, the specimen is assigned affinities with the genus *Oreopanax*. The genus consists of trees and shrubs, sometimes epiphytic with a primarily montane tropical distribution in the Western Hemisphere (Standley and Williams, 1966). Some members of the genus are capable of withstanding seasonal frosts (Breedlove, 1973).

The author wishes to express his sincere appreciation to James Guyer for his assistance in the field, Peter Ganzel for his assistance in photographing the specimen, and to the Curator of Paleontology and staff of The Science Museum of Minnesota for their aid in all aspects of the Wannagan Creek project. This paper was published through the Geneste M. Anderson Paleontology Research Fund.

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