

IDENTIFICATION OF TWO FOSSIL LEAVES FROM IOWA, ONE FROM ARIZONA AND A "TREE TRUNK" FROM KANSAS.

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The Stanford collection contains two willow leaves from Iowa and a "tree trunk" from Kansas that were collected by Orestes St. John in 1901, and a fossil leaf from Steamboat, Arizona, that was collected by the writer. These are described below.

Salix siouxiana Knowlton and Cockerell.

Salix siouxiana Knowlton and Cockerell, U. S. Geol. Surv., Bull. 696, p. 571.

Salix cuneata Newberry, N. Y. Lyc. Nat. Hist., Ann., vol. 9, 1868, p. 21; U. S. Geol. Surv., Mon. 35, 1898, p. 55, pl. 2, f. 1, 2—Hollick, idem, Mon. 50, 1906, p. 50, pl. 7, f. 26, 27; pl. 8, f. 7. (Homonym, Nuttall, 1865.)

Salix meeki Newberry (Lesquereux), U. S. Geol. and Geog. Surv. Terr., Ill. Cret. and Tert. Pl., 1878, pl. 1, f. 1 (f. 2 is *Populus cuneata*.)

The two willow leaves, (fig 1, *a* and *b*), prove to be of the species above. Figure 1*a* is from Quarry Rock, Bruguiere Bluff, Woodberry County, Iowa, and *b* is from Sioux City, Iowa. The former has no age given. The latter is labelled "Cretaceous." The rock in which each is embedded is a greyish, hard sandstone, containing shiny mica flakes, the rock in each case being of the same character and apparently of the same age, looking every whit like they had been taken from the same ledge. The leaves are evidently Dakota Cretaceous in age.

The specimen from Bruguiere Bluff is the smallest leaf, evidently being less mature. It is 9 cm. long and 12 mm. wide at its widest point. The leaf from Sioux City is 12.5 cm. long and 2.25 cm. wide at its greatest width.

The leaves are short petioled, entire elongate, acute at both ends, broadest toward the apex, gradually narrowed below to the base; medial nerve distinct; secondary nerves not preserved.

Nilsonia steamboatea, n. s.

The fossil leaf from Steamboat, Arizona, (fig. 1*c*) is classified as above. It is entire and somewhat heart-shaped, but with an almost straight base. It is 8 cm. wide and about the same in total height. The leaf substance is rather thick. The mid-nerve is moderately strong, from which the lateral nerves go off at right angles. The latter are fine, simple, parallel and numerous, but a little variable in thickness, some being slightly "heavier" than others. There are also some obscure cross veins, especially near the margin.

Position and Locality: Cretaceous (Dakota) from Steamboat Canyon, 18 miles west of Ganado, Arizona.

Stigmaria ficoïdes Brongniart?

The "tree trunk" specimen (fig. 1d) before me from Kansas resembles *Stigmaria elliptica* Lesquereux¹ from the shales over the main coal at Duquoin, Illinois, and also *Stigmaria ficoïdes* Brongniart (*Ficoïdes major* Artis), figured by Mantell² from a sandstone quarry near Rotherham, Yorkshire, England, of Coalmeasure age.

It differs from the former in being a larger specimen and less compressed, in its cicatrices being more numerous, larger and proportionately wider, in the mammillae being larger, and in the pits being

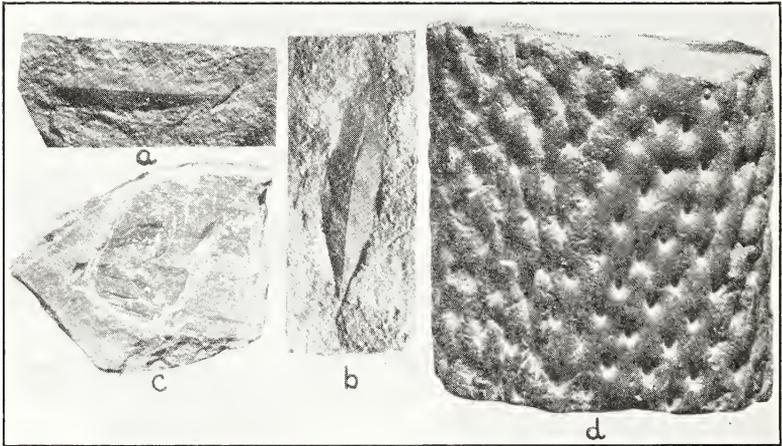


Fig. 1. a and b, *Salix siouxiana* Knowlton, a from Quarry Rock, Bruguere Bluff, Woodberry County, Iowa, and b from Sioux City, Iowa; c, *Nilsonia steamboatca*, n. sp., from Steamboat Canyon, 18 miles west of Ganado, Arizona; d, *Stigmaria ficoïdes* Brongniart?, from Coal Measures series, Calhoon Bluff, Topeka, Kansas.

deeper and the separating "ridges" being more prominent. It also differs from the latter by its tubercles not being quite so oval and in same being arranged in a regular spiral quaternate order. In all respects, however, it favors it more than it does *S. elliptica*. Moreover, it fits neither the figures nor descriptions of *S. ficoïdes* as are generally given for that genus or its varieties.

Stem thick, 7 inches broad, and the thickness of the half stem preserved is flattened to $3\frac{1}{4}$ inches; cicatrices (tubercles) placed in regular spiral quaternate order; oval-elliptical, more or less elongated, somewhat compressed, longitudinally furrowed at the top with a pit in the furrow, with a central roundish-elongated, small mammilla. The specimen shows the hollow of a "pith" center nearly two inches in diameter.

Position and Location: Coal Measures Series? Calhoon Bluff, Topeka, Kansas. Specimen collected by Orestes St. John.

If this should prove to be a new species, the writer would suggest that it be named *Stigmaria saintjohnii*, after its collector.

¹ Lesquereux, Leo: Geol. Surv., Ill. (Geol. and Pal.) vol. 4, 1870, pp. 451-452, pl. 29, f. 2.

² Mantell, Gideon Algernon, LL.D., F. R. S.; A Pictorial Atlas of Fossil Remains, London, 1850, p. 63, pl. 33.