

Figure 1. *Nyssopsora schefflerae* Ramachar, Bagyanarayana et Hosagoudar sp. nov. The teliospores showing simple to pentafurcate glochidiate spines and 3 or 4 germ pores in each cell.

germ pores 3 or 4 in each cell; pedicel hyaline to pale brown, $40-70 \times 3-5 \mu\text{m}$, persistent.

Holotype: In the living leaves of *Schefflera stellata* (Gaertn.) Harms (Araliaceae), near National Orchidarium, Yercaud (Salem District), February 6, 1985, V. B. Hosagoudar BSI/ISV/82143.

The type specimen is deposited in the Botanical Survey of India, Southern Circle, Coimbatore (MH).

According to Cummins and Hiratsuka¹ there are nine species of *Nyssopsora* known so far. Monoson² presented a key to these based on the type of branching of the spines on the teliospores which is specific to each species. *N. schefflerae* differs from the previously known species in having simple to pentafurcately branched spinose teliospores. In addition the presence of 3, rarely 4 germ pores in each cell of the teliospore adds to its distinctness.

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ON THE OCCURRENCE OF *ELATOCLADUS PLANA* (FEISTMANTEL) SEWARD 1919, FROM UPPUGUNDURU (A.P.)

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A FRESH collection of plant fossils has been made from Uppugunduru in Prakasam District of Andhra Pradesh. Earlier Vagyani¹ reported *Ginkgoites crasipes* (Feistmantel) Seward from this place. A specimen numbered UPG/50186 and closely agreeing with the description of *Elatocladus plana* (Feistmantel) Seward (1919) is described here.

Elatocladus Halle² 1913.

Elatocladus plana (Feistmantel) Seward³, 1919.

The specimen is 4.5 cm long and 3.2 cm broad. Leaves are spirally disposed, spreading in one plane (figure 1). They are attached to the rachis at an angle of $55-60^\circ$. Rachis is slender and 0.1 cm thick. Pinnae are linear to lanceolate with entire margins

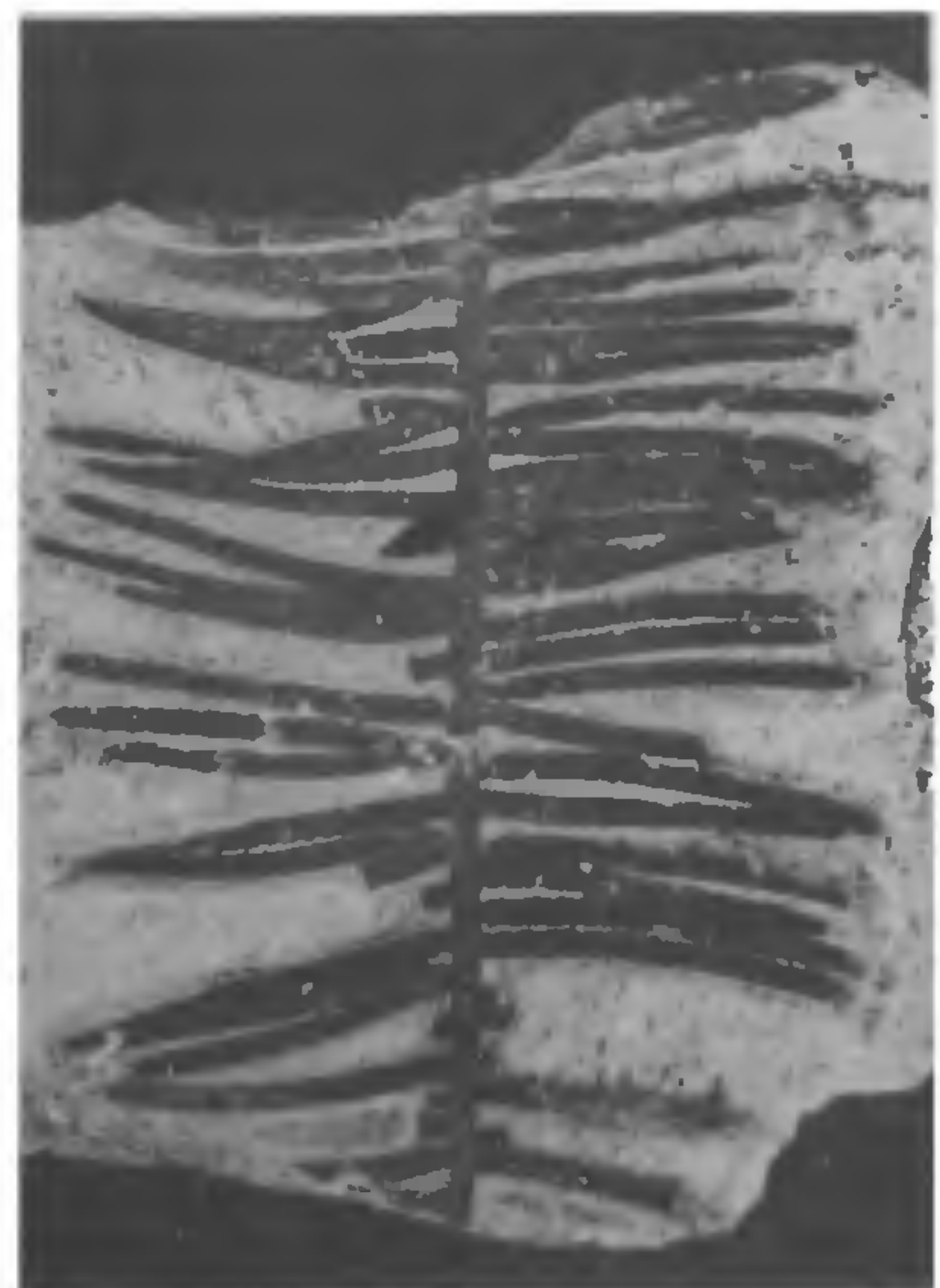


Figure 1. *Elatocladus plana* (Feistm.) Seward ($\times 1.5$).

and sub-acute apex. Apiscopic and basiscopic margins straight, upper basal angle-free and rounded, lower basal angle decurrent. Midrib is distinct, running from base to apex.

According to Sahni⁴ *E. plana* is the commonest and one of the most characteristic fossil of the Raghavapuram and Siperamatur Shales (Kota stage). It is also reported from Bansa in Madhya Pradesh (Jabalpur Stage). Baksi⁵ reported it from Raghavapuram mudstones in the West Godavari District of Andhra Pradesh. Mahabale and Satyanarayana⁶ reported it from Raghudevapuram in East Godavari District. This is the first report from Uppugunduru in Prakasam District. It appears that *E. plana* has wider distribution in the Jurassic beds of Andhra Pradesh.

Specimen No. -UPG/50/86
 Locality -Uppugunduru, Prakasam District (A.P.)
 Horizon -Upper Jurassic.

7 February 1987

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CYTOGENETICS OF A PENTAPLOID HYBRID OF *SOLANUM SCABRUM* MILL. AND *S. VILLOSUM* MILL.

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SOLANUM SCABRUM Mill. the 'garden huckleberry' is a tribasic ($2n=6x=72$) species of the *S. nigrum* complex. Its origin and interrelationship with other species of the section *Solanum* are not well known¹. The present note reports the crossability between *S. scabrum* and *S. villosum* ($2n=4x=48$).

The plants of *S. scabrum* were raised from seeds supplied by Dr Z. O. Gbile, Forest Research Institute, Ibadan, Nigeria, and a stock of *S. villosum* was raised from local populations. Crosses between the two species were successful only when *S. scabrum*, the higher chromosomal form, was used as a maternal parent. A total number of 100 cross

pollinations yielded 5 fruits with 2 seeds, but only one germinated and grew to maturity. The F₁ hybrid was a sterile pentaploid with $2n=5x=60$ chromosomes. Pollen fertility was as low as 4.7%. The hybrid exhibited a wide range of meiotic irregularities. At diakinesis and metaphase I, besides bivalents, univalents and multivalents were recorded in more than 90% of the cells. The mean association of chromosomes, per cell, at metaphase I, was $10.12_I+23.81_{II}+0.70_{III}+0.04_{IV}$. Anaphase I and the subsequent stages of meiosis were irregular and characterized by laggards, chromatin bridges and unequal distribution of chromosomes at poles. The parents showed normal meiosis and bivalent associations.

The breakdown of meiosis and high pollen sterility of the hybrid seems to be due to chromosomal cause, because the parental species differ in chromosome number². However, the vigorous hybrid indicates existence of genetic harmony between the parental forms. The occurrence of about 23 bivalents in a majority of the pollen mother cells indicates the homology between 23 chromosomes each of *S. villosum* and *S. scabrum*, thereby demonstrating the participation of *S. villosum* genome in ancestry of *S. scabrum*.

The participation of *S. villosum* genome in the origin of *S. nigrum* is already established^{1,3,4}. It is of interest to note that *S. scabrum* and *S. nigrum* were readily crossable with each other producing fertile hybrids⁴. Apparently *S. nigrum* and *S. scabrum* have originated from the same or identical ancestors; changes responsible for morphological divergence accumulated during the course of evolution by structural changes of chromosomes as well as gene mutations.

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