Some new genera of Triassic seeds

S. R. Manik


Cuticular studies of compressed seeds from the Triassic sediments of Nidpur, Sidhi District, Madhya Pradesh have revealed the presence of five new genera, viz., *Savitrispernum*, *Nidispernum*, *Roundaspernum*, *Pyformispernum* and *Pantiaspernum*. The seeds exhibit affinities with Pteridospermales and Cycadales.

**Key-words**—Megafossil, Pteridospermales, Cycadales, Seeds, Triassic (India).

_S. R. Manik, Birbal Sahni Institute of Palaeobotany, 53 University Road, Lucknow 226 007, India._

**सारींश**

*विस्मू़ी युगीन बीजों की कुछ नई प्रजातियाँ*

_उपरेत्त राशों मानिकः_

सिंह अज़म (मध्य प्रदेश) में निद्दूप के विस्मू़ी युगीन बीजों से उपलब्ध बीजों के उपशरीर संग्रह में *सावित्रिस्पेर्नमुर*, *निडिस्पेर्नमुर*, *रोउंडिस्पेर्नमुर*, पियर्फॉर्मिस्पेर्नमुर* एवं *पंटियास्पेर्नमुर* नामक पाँच नई प्रजातियाँ की उपस्थिति ज्ञात हुई हैं। ये सभी बीज पटरिक्स्पेर्नमुर एवं साइकेडेन्स में समानांतर शरीर धारित करते हैं।

A NUMBER of seeds have been recovered from the bulk maceration of a carbonaceous shale from the Triassic Sequence exposed near Nidpur, Sidhi District, Madhya Pradesh. The seeds show well-preserved cuticle. On the basis of differences in the cuticular features of various seed membranes, five new genera have been established.

**SYSTEMATICS**

*Savitrispernum gen.* nov.

_Pl. 1, figs 1, 2_

*Diagnosis*—Seed oval; micropylar end curved, having crateriform opening; chalazal end rounded, pollen chamber well-defined; surface smooth, cuticle thin; outer integument consisting of rectangular cells, cell-walls straight; nucellar membrane tough, cells polygonal having slightly undulating cell-walls; megaspore membrane exhibiting no cellular details.

_Type species*—*Savitrispernum crateriformis._

_Holotype*—Slide no. BSIP 9727.

_Derivatio nominis*—After Late Mrs Savitri Sahni.

_Discussion*—In its curved micropyle the taxon closely compares with seeds of *Unikomasia* Thomas 1933, a branched fructification. *Amphorispernum* Harris 1932 from Greenland resembles in general shape and size but differs in the presence of 'spotted layer'.

*Nidispernum gen.* nov.

_Pl. 1, figs 3, 4_

*Diagnosis*—Seed oval; micropylar end obtusely pointed; chalazal end broadly oval; cuticle thick;
outer integument tough, smooth or papil late, cells polygonal, straight-walled, nucellar membrane composed of polygonal cells, cells longer than broad; pollen-chamber distinct, pollen-grains present.

Type species—Nidispernum glabrosum.
Holotype—Slide no. BSIP 9729.

Discussion—Nidispernum, while resembling Savitrispernum in general shape and size, differs in the absence of a curved micropyyle. In its characteristic epidermal structure, Nidispernum shows similarity with Dicroidium nidipurense Bose \\& Srivastava, 1971.

Rotundaspernum gen. nov.

Pl. 1, figs 5, 6

Diagnosis—Seed more or less rounded with mucronate micropylar end; cuticle thick; outer integument consisting of polygonal cells with straight lateral- and end-walls; nucellar membrane made up of irregular polygonal cells showing cell-walls with fine undulations.

Type species—Rotundaspernum mucronatum.
Holotype—Slide no. BSIP 9730.

Discussion—Rotundaspernum mucronatum is distinguished from other seed genera by the presence of mucronate micropylar end.

Pyrriformispernum gen. nov.

Pl. 1, fig. 7

Diagnosis—Seed pyriform; micropylar end obtusely pointed, chalazal end broadly oval; cuticle moderately thick; outer integument showing longitudinally elongated cells with smooth surface, cell-walls straight; inner integument delicate, adhering to nucellar membrane; nucellar cuticle thick, cells polygonal; megaspore membrane ill-defined.

Type species—Pyrriformispernum elongatum.
Holotype—Slide no. BSIP 9731.

Discussion—Genus Pyrriformispernum is distinguished by its pear-shaped character.

Pantiaspernum gen. nov.

Pl. 1, figs 8-10

Diagnosis—Seed broadly oval to elliptical; micropylar and chalazal ends somewhat rounded; cuticle thick, outer integument robust, bearing thickly-developed papillae, scattered all over the surface obscuring cell outlines; nucellar cuticle thick, cells polygonal or at times irregular; megaspore membrane dark brown in colour with indistinct cellular structure.

Type species—Pantiaspernum cristatum.
Holotype—Slide no. BSIP 9732.
Derivatio nominis—After Professor D. D. Pant.
Discussion—In the presence of typical papillae Pantiaspernum differs from other seed genera.

ACKNOWLEDGEMENTS

The author is grateful to Dr B. S. Venkatachala for his encouragement and keen interest during the progress of this work. Thanks are also extended to Dr Shyam C. Srivastava for confirming the identifications and critically going through the manuscript.

---

PLATE 1

(All type slides are deposited with repository of Birbal Sahni Institute of Palaeobotany, Lucknow.)

Savitrispernum crateriformis gen. et sp. nov.
1. Whole mount of seed showing curved micropyyle and nucel]
lus; Holotype slide no. BSIP 9727. × 25.
2. Outer integument of seed with differentiated pollen chamber, 
Slide no. BSIP 9728. × 50.

Nidispernum glabrosum gen. et sp. nov.
3. A carbonized seed after alkali treatment showing integument 
being separated. Holotype, slide no. BSIP 9729. × 25.
4. Micropylar end of seed showing micropylar hole and details 
of pollen chamber associated with a part of nucellus. Slide no. 
BSIP 9729. × 80.

Rotundaspernum mucronatum gen. et sp. nov.
5. A seed immersed in glycerine showing mucronate micropylar end. Holotype slide no. BSIP 9730. × 10.
6. Micropylar region of seed showing details of micropylar end 
and nucellus. Slide no. BSIP 9730. × 50.

Pyrriformispernum elongatum gen. et sp. nov.
7. Whole mount of seed showing complete outer integument of 
one face along with micropyyle opening and pollen chamber, 
Holotype slide no. BSIP 9731. × 25.

Pantiaspernum cristatum gen. et sp. nov.
8. Seed immersed in glycerine. Holotype slide no. BSIP 9732. × 10.
9. A complete outer investment of seed, with distinct micropylar 
opening, Slide no. BSIP 9732. × 25.
10. Epidermal details of the outer cuticle with strongly developed 
papillae, Slide no. BSIP 9733. × 150.
REFERENCES


