

SCIENTIFIC CORRESPONDENCE

Table 2. Comparison of the Amravati plant fossil assemblage with that of other localities known from peninsular India

Genus/Locality	Present locality	Gardeshwar ⁶ (Early Cret)	Gangapur ⁷ (Early Cret)	Dubrajpur ⁸ (Late Jura to Early Cret)	Gollapalli ⁹ (Early Cret)	Jabalpur ^{1,10,12} (Late Jura to Early Cret)	Umia ^{1,10,12} (Early Cret)
<i>Ptilophyllum</i>	Abundant	—	+	Abundant	+	Very Common	+
<i>Taeniopteris</i>	Common	—	+	+	Abundant	Abundant	+
<i>Cladophlebis</i>	+	+	+	+	+	Common	+
<i>Sphenopteris</i>	+	+	—	—	+	+	—
<i>Pagiophyllum</i>	+	Abundant	+	+	+	+	+
<i>Elatocladus</i>	+	—	Abundant	—	+	+	+
<i>Matonidium</i>	Common	—	—	—	—	—	—
<i>Araucarites</i>	+	+	—	—	+	Common	+

+, Present
—, Absent

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First report of the Late Permian sporangiate fructification *Nesowalesia* Pant from India

Nesowalesia edwardsii, a Late Permian, sporangiate, monotypic fructification, is instituted by Pant¹ for concave disc-like organs from Newcastle, New South Wales, Australia. *Arberiella* type of sporangia are found attached on the concave side of the disc, while the convex side is smooth. Later on Rigby and Chandra² presented additional information concerning *Nesowalesia edwardsii* Pant on the basis of carbonized specimens

found from the Late Permian Illawara Coal Measures of the Western Sydney Basin, New South Wales. They also found well-preserved taeniate bisaccate pollen *Striatopodocarpites solutus* (Bharadwaj and Saluja) Foster³ from the *Arberiella* type of sporangia obtained from a thick crust of carbonaceous concave discs of *Nesowalesia edwardsii*. Rigby and Chandra² also proposed a peltate disc type of restoration for this Australian male fructification.

Two such discs having *Arberiella* type of sporangia are recorded for the first time from Late Permian bed exposed in Hinjrida Ghati near Handapa village, district Angul, Orissa. The concave discs are 1.5 cm in diameter and bear a number of *Arberiella* type of sporangia. Since the specimens are in the form of impressions, further studies are not possible. A close comparison between Indian and Australian specimens is also not possible as the

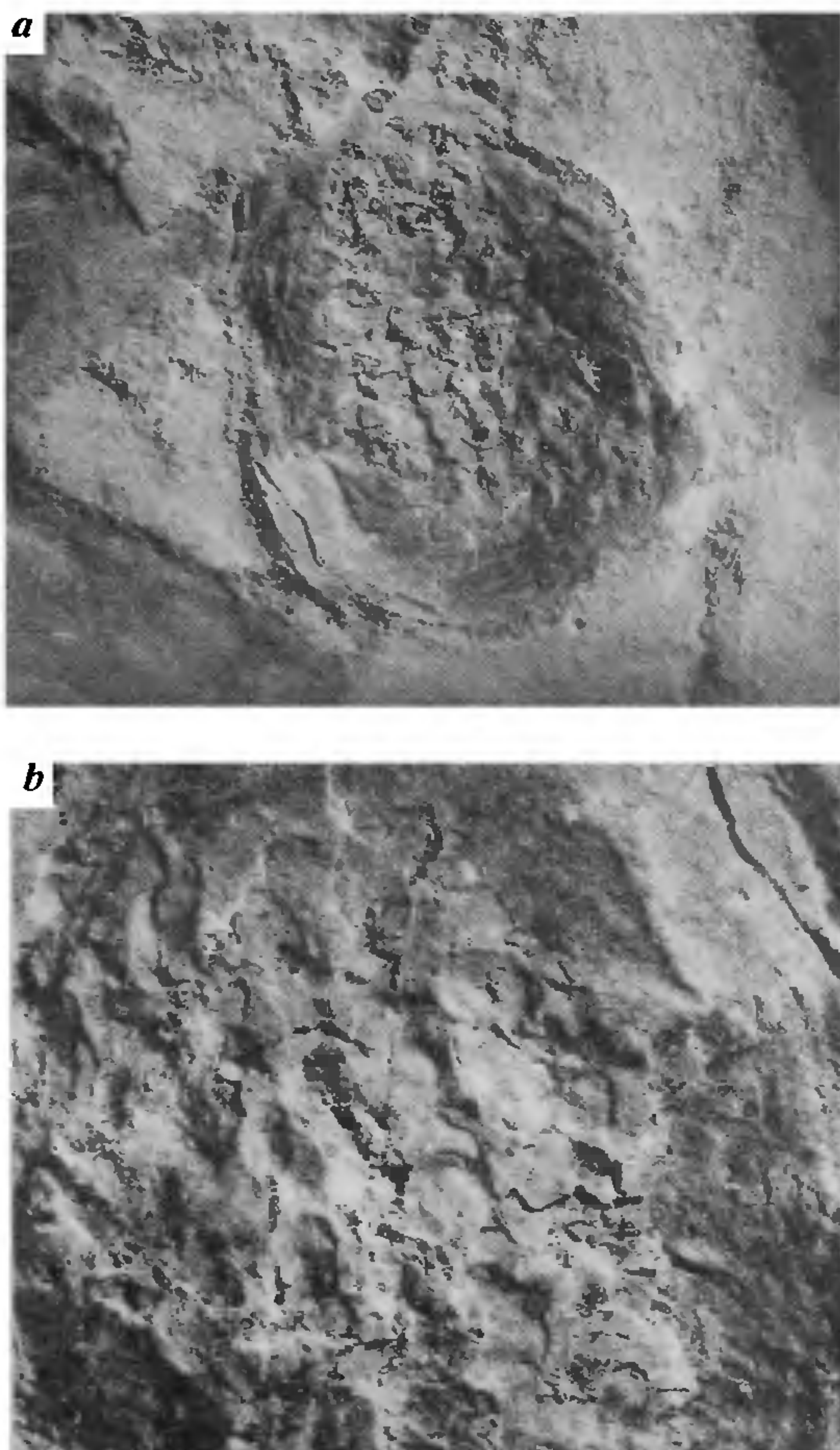


Figure 1. *a*, *Nesowalesia pantii* sp. nov. Specimen showing a concave disc with sporangia. Holotype specimen no. 36869 ($\times 3$), *b*, Enlargement of a portion of specimen in *a* showing numerous sporangia ($\times 8$)

mode of preservation in the two is different, the Indian ones being impressions while the Australian ones are carbonized. Indian specimens from Handapa are designated as a new species *Nesowalesia pantii* (holotype specimen number 36869, Birbal Sahni Institute of Palaeobotany, Lucknow) with a diagnosis 'concave disc-shaped organs with *Arberiella* type of sporangia' (Figure 1). The Indian specimens closely resemble the specimen described by Pant⁴, photographed as Figure 7 on Plate 21.

Report of *Nesowalesia pantii* from Handapa bed is very significant as it is the first report of this sporangiate fructification from India.

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COMMENTARY

Whither microbiology?

Ramesh Maheshwari

A distinguished American microbiologist, C. R. Woese, has expressed deep concern at the present state of microbiology. He is of the opinion that all biology should be reorganized around microbiology. The merit of this view is examined. Some examples are given to illustrate the contributions of microorganisms to the understanding of biological principles and formulation of concepts. A possible area of microbiological research is identified which could become the focus of activity involving many young scientists in our country and contribute to the vitalization of microbiology.

In a recent commentary on the state of microbiology, Carl Woese expressed concern thus¹: 'University microbiology departments are withering. We are eliminating them as entities in their own right, being demoted to intellectual