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# An Extinct Lichen from the Mesozoic of the Rajmahal Hills, Jharkhand, India

B.D. Sharma[1] and R. Harsh[2*]

Kath Mandi, Narnaul 123001, India
Assistant Director College Education, Bikaner Division, Bikaner. 334001, India
*For correspondence. E-mail rharshpalaeobotanist@yahoo.com

# भारत में झारखण्ड राज्य की राजमहल पहाड़ियों से मिसोजोइक काल का एक लुप्तप्राय लाइकेन

बी. डी. शर्मा एवं आर. हर्ष

## सारांश

प्रस्तुत शोध पत्र में भारत के झारखंड राज्य स्थित राजमहल पहाड़ियों के निपानिया क्षेत्र से प्राप्त एक विलुप्त सिलिका युक्त लाइकेन, जो अश्मीभूत रूप में परिरक्षित है, का विवरण दिया गया है।

## ABSTRACT

The present paper deals with the description of an extinct aggregate lichen as petrifaction in a silicified chert of Nipania in the Rajmahal Hills, Jharkhand, India.

**Keywords:** Mesozoic, petrified complicated lichen, Rajmahal Hills.

## INTRODUCTION

One sample of extinct aggregated lichen as petrifaction in a silicified chert was collected from the village Nipania (24.767° N, 87.326°E) of Rajmahal Hills. Rajmahal Hills were considered of Middle Jurassic age but palynological data treats these of Lower Cretaceous Horizon. The present sample was seen in a thin section prepared from the silicified chert of Nipania; preserved in light red colour probably due to the iron contents in the rock and found to be different in morphology from all other earlier described petrified lichen.

Lichen have been reported from Precambrian cherts and stromalites (Barghoorn & Tylor, 1968; Hallbauer & Warmelo, 1974), *Winfrenatia reticulata* Taylor & al was described from Palaeozoic strata, the lower Devonian of the Rhynie chert of Scotland (Taylor & al., 1997, 2009). Jurina & Krassilov (2002) described the lichen *Flaboilith* sp. from the Eocene strata. Sharma & al. (2001) described for the first-time lichen in petrified form the Mesozoic of the Rajmahal Hills. He has named all these liches as lichen A, lichen B & C (Sharma & al., 2015), a cyanolichen Lichen D from Nipania resembling *Winfrenatia reticulata* (Sharma, 2017). The present collection is designated as Lichen E which is estimated to an age of about 68 to 145 million years old.

## DESCRIPTION

The thalloid is irregular, 7mm in length, one end of the thalloid is narrower (plate 1, fig. c) and gradually wider toward the middle and distal portions with3mm thick. The proximal portion of the lichen number uniseriate fungal filaments each containing 8 to 9 cells in a row present. In the central portion (plate 1, fig. a) number of circular cells (arrow) in a group can be seen, whose functions are not clear. The algal bodies (plates 1, fig. a) are represented by a number of black coloured globular cells in scattered manner (Plate 1, fig. e) probably filled with black rod like extraneous matter. Towards the narrower potion, a group of irregular shaped large younger sized cells are present, which on enlargement (Plate 1, fig. b) one dark coloured cells are present ( marked with a arrow) can be compared

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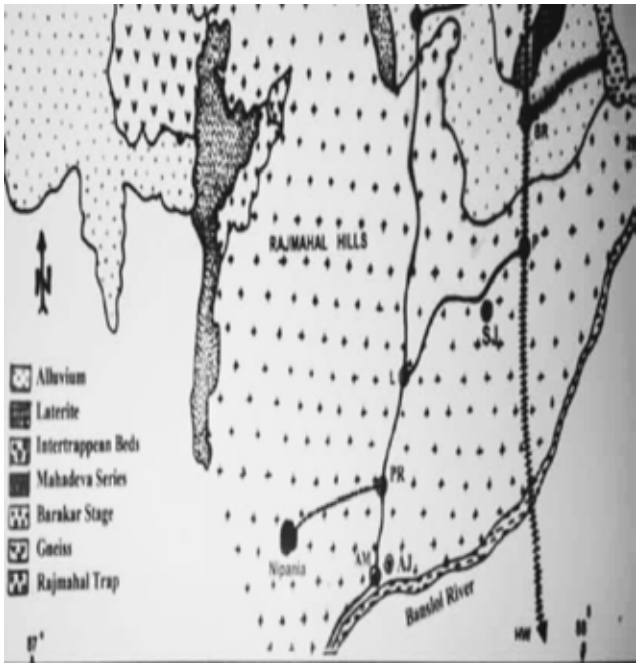


Figure 1: Map of fossiliferous site; BR-Brhgrwa, P-Pakur, PR-Parerkola, C-Chilgujri, H-Hiranduba, AJ-Amarjola, HW-Hawra, Nipania

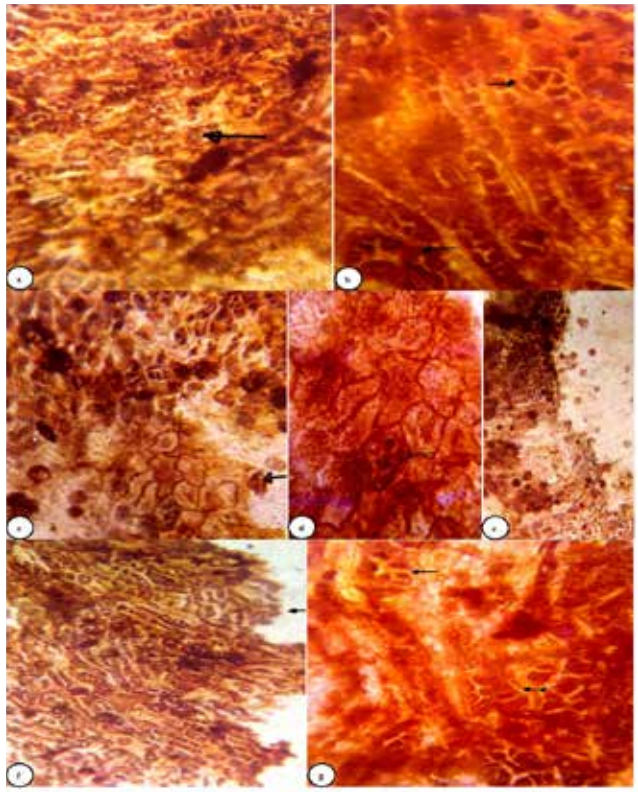

**Plate 1: a.** 8 or 9 celled uniseriate Fungal filaments with globular black algal contents; **b.** Enlarge portion of a.; **c.** A group of irregular shaped cells (arrow) and black algal contents; **d.** Enlarge portion of c; **e.** Scattered algal contents (arrow); **f.** Young (arrow) and mature fungal filaments and algal contents; **g.** Fungal filaments with uni and biseriate cells. In some filaments large terminal body present (arrows) with groups of cells.

to *Acarospora saxicola* Fink ex. Hedrick ( Rawat et al 2014, Plate 1, fig. a ).

Young little differentiated fungal filaments (Plate 1, fig. f) are represented by aggregation of different sized uniseriate cells. On enlargement (plate 1, figs. b, g), globular bodies with 4 - 5 blackish coloured immature cells in groups (arrows) with empty structures can be observed, The terminal portion of the lichen can be observed in Plate 1, fig. e.

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## REFERENCES

BARGHOORN, E.S. AND TAYLER, S.A. 1965. Micro-organism from the Gunflint chert *Science* 147: 568-577.

HALLBAUER, D.K AND VAN WARMELO, L.T. 1974. Fossilized plants in thucholite from Precambrian rocks of the Witwatersrand, south Africa. *Precambrian Research* 1: 199-212.

JURINA, A.L. AND KRASSILO, V.A. 2002. Lichen like fossils from the Givtian of central Kazakhstan-*Paleontological Journal* 36: 541-547.

RAWAT, S., UPRETI, D.K. AND SINGH, R.P. 2014. Five new lichen records from India. *Geophytology*44 (1): 77-88.

SHARMA, B.D. 2017. A glance at the history of researches on Indian pteridophytes and observations on some recent reports. *Indian fern Journal* 34: 12-22.

SHARMA, B.D., BOHRA, D.R. AND SUTHAR, O.P. 2001. Some interesting plant fossils from the Mesozoic rocks at the Rajmahal Hills, India. *Palaeobotanist* 50(2): 207-212.

SHARMA, B.D. BOHRA, D.R., SUTHAR, O.P. AND HARSH, R. 2015. Some permineralized plant fossils from the early Cretaceous sediments of Rajmahal Hills, Jharkhand, India. *Geophytology* 45: 41-46

TAYLOR, T.N., HASS, H. AND KERP, H. 1997. A cyanolichen from the lower Devonian, Rhynie chert. *American Journal of Botany* 84 (8): 992-1004.

TAYLOR, T.N., TAYLOR, E.L. AND KRINGS, 2009. *Palaeobotany-The Biology and Evolution of fossil Plants.* Academic Press New York.