

Eighteen new combinations in *Hammenisporis* Saxena & Trivedi 2009 (fossil spores of Ceratopteridaceae) from the Indian Tertiary sediments

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ABSTRACT

Saxena R. K. 2013. Eighteen new combinations in *Hammenisporis* Saxena & Trivedi 2009 (fossil spores of Ceratopteridaceae) from the Indian Tertiary sediments. *Geophytology* 43(2): 145-151.

The genus *Hammenisporis*, representing fossil spores of Ceratopteridaceae, constitutes an important element of the Indian Tertiary palynoassemblages. Twenty-four species of this genus have so far been recorded from the Tertiary sediments of various regions of India. Of these, eighteen new combinations, here proposed, are: *Hammenisporis attenuatus* (H. P. Singh & S. K. M. Tripathi) R. K. Saxena comb. nov., *Hammenisporis cauveriensis* (B. S. Venkatachala & M. S. Rawat) R. K. Saxena comb. nov., *Hammenisporis discontinuous* (R. Y. Singh et al.) R. K. Saxena comb. nov., *Hammenisporis indicus* (R. Y. Singh et al.) R. K. Saxena comb. nov., *Hammenisporis jagdevii* (R. Y. Singh et al.) R. K. Saxena comb. nov., *Hammenisporis jorajanensis* (H. P. Singh & R. K. Saxena) R. K. Saxena comb. nov., *Hammenisporis juxtacostatus* (R. Y. Singh et al.) R. K. Saxena comb. nov., *Hammenisporis macrocostatus* (S. K. Baksi) R. K. Saxena comb. nov., *Hammenisporis pachyexinus* (M. R. Rao & H. P. Singh) R. K. Saxena comb. nov., *Hammenisporis pseudocostatus* (H. P. Singh & S. K. M. Tripathi) R. K. Saxena comb. nov., *Hammenisporis pudens* (S. K. Salujha et al.) R. K. Saxena comb. nov., *Hammenisporis punctatus* (R. K. Saxena & M. R. Rao) R. K. Saxena comb. nov., *Hammenisporis sahnii* (R. Y. Singh et al.) R. K. Saxena comb. nov., *Hammenisporis sinuosus* (M. R. Rao & H. P. Singh) R. K. Saxena comb. nov., *Hammenisporis striatus* (S. K. Salujha et al.) R. K. Saxena comb. nov., *Hammenisporis tetradites* (M. R. Rao) R. K. Saxena comb. nov., *Hammenisporis venustus* (S. K. Salujha et al.) R. K. Saxena comb. nov., *Hammenisporis vulgaris* (S. K. Salujha et al.) R. K. Saxena comb. nov. Indian records of these species are also provided.

Key-words: *Hammenisporis*, Ceratopteridaceae spores, new combinations, Tertiary, India.

INTRODUCTION

Van der Hammen (1954, p. 14) proposed "*Striatriletes*" as the epithet for a subgenus of *Triletes* but without any illustration and without assigning any species to the subgenus, so *Triletes* subg. *Striatriletes* is not validly published name. Potonié (Sept. 1956, p. 42) published a new genus *Striatriletes* by including a diagnosis and illustration and designating *S. sulcatus* (Dijkstra) Potonié 1956 as type of the generic name. This was the first valid publication of the name *Striatriletes*. Later in the

same year, Van der Hammen (Dec. 1956) validly published the same name (*Striatriletes*; Type: *S. susannae*) for another, distinctly different, genus. *Striatriletes* Van der Hammen 1956 is therefore illegitimate, being a later homonym of *Striatriletes* Potonié 1956. Saxena and Trivedi (2009, pp. 258-259) discussed the taxonomic status of this genus and proposed *Hammenisporis* as a substitute name for *Striatriletes* van der Hammen 1956 (Boln. Geol. 4(2-3), p. 115, figure 5), non Potonié 1956, and published one new species and five

new combinations under *Hammenisporis*. These are: *Hammenisporis aidaensis* (Kar) Saxena and Trivedi, *Hammenisporis assamensis* Saxena and Trivedi, *Hammenisporis microverrucosus* (Kar & Saxena) Saxena and Trivedi, *Hammenisporis multicostatus* (Kar & Saxena) Saxena and Trivedi, *Hammenisporis paucicostatus* (Kar) Saxena and Trivedi and *Hammenisporis susannae* (van der Hammen) Saxena and Trivedi.

THE GENUS *HAMMENISPORIS* SAXENA & TRIVEDI

Genus: *Hammenisporis* Saxena & Trivedi 2009

Type species: *Hammenisporis susannae* (van der Hammen) Saxena & Trivedi 2009

Original diagnosis (van der Hammen 1956, p. 115): Trilete spores, sculpture type striate.

Emended diagnosis (Saxena & Trivedi 2009, p. 258): Spores triangular to subcircular in polar view, medium to large sized. Trilete mark generally distinct, sometimes indistinct, rays equal, uniformly broad, extending from half to three-fourths radius, commissure distinct. Exine striate, striations 3-7, running \pm parallel to each other but never coalesce, generally arise at inter-radial area or at ray ends and continue on respective distal side as successive concentric rings, striations sparsely or closely placed, generally psilate, sometimes variously ornamented and branched.

Remarks: Twenty-four species of this genus have so far been recorded from the various Tertiary sediments of India, under illegitimate generic name *Striatriletes* van der Hammen 1956, non Potonié 1956. Of these, six species (one new species and five new combinations) have been recorded by Saxena and Trivedi (2009) from the Kopili Formation (Late Eocene) of North Cachar Hills, Assam (India). In addition to these, eighteen validly published and recognized species, hitherto described under *Striatriletes* Van der Hammen, are here combined with *Hammenisporis*, as new combinations.

NEW COMBINATIONS

***Hammenisporis attenuatus* (H. P. Singh & S. K. M. Tripathi) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes attenuatus* H. P. Singh & S. K. M. Tripathi, Geophytology 13(2), p. 224-225, plate 1, figures 3, 6. 1983.

Holotype: Singh & Tripathi 1983, plate 1, figure 3, slide no. 6954, coordinates 100.7 x 22.5, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Singh & Tripathi 1983, p. 224-225, plate 1, figures 3, 6, Kopili Formation (Late Eocene), Jowai-Sonapur Road Section, Jaintia Hills, Meghalaya; Tripathi & Singh 1985, p. 171, plate 2, figure 14, Kopili Formation (Late Eocene), Jowai-Sonapur Road Section, Jaintia Hills, Meghalaya; Singh & Tripathi 1990, p. 329, plate 1, figures 16, 23, Siwalik sediments (Miocene), Arunachal Pradesh.

***Hammenisporis cauveriensis* (B. S. Venkatachala & M. S. Rawat) R. K. Saxena, comb. nov.**

Basionym: *Magnastriatites cauveriensis* B. S. Venkatachala & M. S. Rawat, Palaeobotanist 20(2), p. 239, plate 1, figure 5. 1973.

Holotype: Venkatachala & Rawat 1973, plate 1, figure 5, slide no. and repository not mentioned.

Indian records: Venkatachala & Rawat 1973, p. 239, plate 1, figure 5, Oligocene-Miocene, Cauvery Basin, Tamil Nadu.

***Hammenisporis discontinuous* (R. Y. Singh et al.) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes discontinuous* R. Y. Singh et al., J. Palynol. 21, p. 46, plate 1, figures 12, 15, 17. 1985.

Holotype: Singh et al. 1985, plate 1, figure 12, slide no. LUGM 33/ 9/ 3, stored in the museum of the Geology Department, Lucknow University, Lucknow, India.

Indian records: Singh et al. 1985, p. 46, plate 1, figures 12, 15, 17, Barail Group (Oligocene), Assam and Meghalaya; Kapoor et al. 2003, p. 182, Dharmasala and Siwalik (Oligocene-Neogene),

new combinations under *Hammenisporis*. These are: *Hammenisporis aidaensis* (Kar) Saxena and Trivedi, *Hammenisporis assamensis* Saxena and Trivedi, *Hammenisporis microverrucosus* (Kar & Saxena) Saxena and Trivedi, *Hammenisporis multicostatus* (Kar & Saxena) Saxena and Trivedi, *Hammenisporis paucicostatus* (Kar) Saxena and Trivedi and *Hammenisporis susannae* (van der Hammen) Saxena and Trivedi.

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NEW COMBINATIONS

Hammenisporis attenuatus (H. P. Singh & S. K. M. Tripathi) R. K. Saxena, comb. nov.

Basionym: *Striatriletes attenuatus* H. P. Singh & S. K. M. Tripathi, Geophytology 13(2), p. 224-225, plate 1, figures 3, 6. 1983.

Holotype: Singh & Tripathi 1983, plate 1, figure 3, slide no. 6954, coordinates 100.7 x 22.5, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Singh & Tripathi 1983, p. 224-225, plate 1, figures 3, 6, Kopili Formation (Late Eocene), Jowai-Sonapur Road Section, Jaintia Hills, Meghalaya; Tripathi & Singh 1985, p. 171, plate 2, figure 14, Kopili Formation (Late Eocene), Jowai-Sonapur Road Section, Jaintia Hills, Meghalaya; Singh & Tripathi 1990, p. 329, plate 1, figures 16, 23, Siwalik sediments (Miocene), Arunachal Pradesh.

Hammenisporis cauveriensis (B. S. Venkatachala & M. S. Rawat) R. K. Saxena, comb. nov.

Basionym: *Magnastriatites cauveriensis* B. S. Venkatachala & M. S. Rawat, Palaeobotanist 20(2), p. 239, plate 1, figure 5. 1973.

Holotype: Venkatachala & Rawat 1973, plate 1, figure 5, slide no. and repository not mentioned.

Indian records: Venkatachala & Rawat 1973, p. 239, plate 1, figure 5, Oligocene-Miocene, Cauvery Basin, Tamil Nadu.

Hammenisporis discontinuous (R. Y. Singh et al.) R. K. Saxena, comb. nov.

Basionym: *Striatriletes discontinuous* R. Y. Singh et al., J. Palynol. 21, p. 46, plate 1, figures 12, 15, 17. 1985.

Holotype: Singh et al. 1985, plate 1, figure 12, slide no. LUGM 33/ 9/ 3, stored in the museum of the Geology Department, Lucknow University, Lucknow, India.

Indian records: Singh et al. 1985, p. 46, plate 1, figures 12, 15, 17, Barail Group (Oligocene), Assam and Meghalaya; Kapoor et al. 2003, p. 182, Dharmsala and Siwalik (Oligocene-Neogene),

Dharmsala and Nurpur areas, Kangra District, Himachal Pradesh.

***Hammenisporis indicus* (R. Y. Singh et al.) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes indicus* R. Y. Singh et al., J. Palynol. 21, p. 44, 46, plate 1, figures 13-14. 1985.

Holotype: Singh et al. 1985, plate 1, figure 13, slide no. LUGM 33/ 8/ 4, stored in the museum of the Geology Department, Lucknow University, Lucknow, India.

Indian records: Singh et al. 1985, p. 44, 46, plate 1, figures 13-14, Barail Group (Oligocene), Assam and Meghalaya; Kapoor et al. 2003, p. 182, Dharmsala and Siwalik (Oligocene-Neogene), Dharmsala and Nurpur areas, Kangra District, Himachal Pradesh.

***Hammenisporis jagdevii* (R. Y. Singh et al.) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes jagdevii* R. Y. Singh et al., J. Palynol. 21, p. 42, 44, plate 1, figures 7, 11. 1985.

Holotype: Singh et al. 1985, plate 1, figure 11, slide no. LUGM 33/ 8/ 2, stored in the museum of the Geology Department, Lucknow University, Lucknow, India.

Indian records: Singh et al. 1985, p. 42, 44, plate 1, figures 7, 11, Barail Group (Oligocene), Assam and Meghalaya; Kapoor et al. 2003, p. 182, Dharmsala and Siwalik (Oligocene-Neogene), Dharmsala and Nurpur areas, Kangra District, Himachal Pradesh.

***Hammenisporis jorajanensis* (H. P. Singh & R. K. Saxena) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes jorajanensis* H. P. Singh & R. K. Saxena, in Sharma A. K. et al. (Editors) - Proceedings of the Symposium on Evolutionary Botany and Biostratigraphy Calcutta 1979, A. K. Ghosh Commemoration Volume, Current Trends in Life Sciences 10, p. 618, plate 1, figures 9-11. 1984.

Holotype: Singh & Saxena 1984, plate 1, figure 9, slide no. 6002/ 2, stored in the museum

of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Singh & Saxena 1984, p. 618, plate 1, figures 9-11, Girujan Clay and Dhekiajuli Formations (Neogene), Jorajan Well-3, Assam.

***Hammenisporis juxtacostatus* (R. Y. Singh et al.) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes juxtacostatus* R. Y. Singh et al., J. Palynol. 21, p. 42, plate 1, figures 2-3, 9. 1985, non Sah et al., p. 638, 640, plate 1, figure 2, plate 2, figure 32. 1980 (nomen nudum).

Holotype: Singh et al. 1985, plate 1, figure 2, slide no. LUGM 55/ 2/ 6, stored in the museum of the Geology Department, Lucknow University, Lucknow, India.

Indian records: Singh et al. 1985, p. 42, plate 1, figures 2-3, 9, Barail Group (Oligocene), Assam and Meghalaya; Kapoor et al. 2003, p. 182, Dharmsala and Siwalik (Oligocene-Neogene), Dharmsala and Nurpur areas, Kangra District, Himachal Pradesh.

***Hammenisporis macrocostatus* (Baksi) R. K. Saxena, comb. nov.**

Basionym: *Ceratopteris macrocostata* Baksi, Bull. Geol. Min. Metall. Soc. India 26, p. 20, plate 4, figure 53. 1962. *Cicatricosisporites macrocostatus* (Baksi 1962) Sah & Dutta, Palaeobotanist 16(2), p. 185, plate 1, figures 6-7. 1968. *Striatriletes macrocostatus* in Gupta et al., Gondwana Geol. Mag., Special Volume 6, p. 210. 2003 (nomen nudum).

Holotype: Baksi 1962, plate 4, fig 53, photo ser. No. 6495, slide no. and repository not mentioned.

Indian records: Baksi 1962, p. 20, plate 4, figure 53, Tertiary, Simsang River Section, Meghalaya; Sah & Dutta 1968, p. 185, plate 1, figures 6-7, Tipam Series (Miocene), Assam; Venkatachala & Rawat 1973, p. 240, plate 3, figure 6, Oligocene-Miocene, Cauvery Basin, Tamil Nadu; Sein & Sah 1974, p. 103, plate 2, figures 15-17, Kopili Formation and Barail Group (Late Eocene-Oligocene), Jowai-Badarpur Road Section, Jaintia

Hills, Meghalaya; Singh 1977, p. 192, plate 1, figure 21, Tura Formation (Palaeocene), Nongwal Bibra, Garo Hills, Meghalaya; Sah et al. 1980, p. 638, Tipam Sandstone Formation (Miocene), Nahorkatiya Well no. 1, Assam; Mathur & Mathur 1980, p. 55, plate 1, figure 4, Upper Baratang Formation (Early Oligocene), Bakultala Section, Middle Andaman, Andaman and Nicobar Islands; Nandi 1981, p. 30, plate 1, figure 15, Neogene, Moran and Nahorkatiya Wells, Assam; Nandi & Sharma 1984, p. 567, plate 1, figure 8, Boldamgiri Formation (Early Miocene), Tura-Damalgiri Road Section, Garo Hills, Meghalaya; Banerjee & Nandi 1994, p. 216, plate 1, figure 6, Middle Bhuban Formation (Early-Middle Miocene), near Kolasib, Aizawl District, Mizoram.

***Hammenisporis pachyexinus* (M. R. Rao & H. P. Singh) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes pachyexinus* M. R. Rao & H. P. Singh, *Palaeobotanist* 35(3), p. 275-276, plate 2, figures 7, 10. 1987.

Holotype: Rao & Singh 1987, plate 2, figure 10, slide no. 8391, coordinates 56.0 x 101.5, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Rao & Singh 1987, p. 275-276, plate 2, figures 7, 10, Jenam Formation (Middle Oligocene), Sonapur-Badarpur Road Section, Jaintia Hills, Meghalaya and Cachar District, Assam; Kumar & Takahashi 1991, p. 583-584, plate 7, figure 5, Middle Bhuban Formation (Middle Miocene), Silchar-Haflong Road Section, Assam; Kumar 1994, p. 40, 64, 87, plate 10, figure 6, Jenam, Bhuban and Bokabil formations (Middle Oligocene and Miocene), Silchar-Haflong Road Section, Assam; Rao 2000, p. 295, Kherapara Formation (Oligocene), Tura-Dalu Road Section near Kherapara, West Garo Hills District, Meghalaya.

***Hammenisporis pseudocostatus* (H. P. Singh & S. K. M. Tripathi) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes pseudocostatus* H. P. Singh & S. K. M. Tripathi, *Geophytology* 13(2), p. 224, plate 1, figure 2, plate 2, figures 11-12. 1983.

Holotype: Singh & Tripathi 1983, plate 1, figure 2, slide no. 6952, coordinates 77.2 x 11.8, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Singh & Tripathi 1983, p. 224, plate 1, figure 2, plate 2, figures 11-12, Kopili Formation (Late Eocene), Jowai-Sonapur Road Section, Jaintia Hills, Meghalaya; Tripathi & Singh 1985, p. 171, plate 2, figure 22, Kopili Formation (Late Eocene), Jowai-Sonapur Road Section, Jaintia Hills, Meghalaya; Saxena & Bhattacharyya 1990, p. 110, plate 1, figure 2, Dharmsala Group (Oligocene-Early Miocene), Churan Khad Section near Dharmsala, Kangra District, Himachal Pradesh; Singh & Tripathi 1990, p. 329, Siwalik sediments (Miocene), Arunachal Pradesh; Saxena & Rao 1996, p. 46, Boldamgiri Formation (Early Miocene), Adugiri-Purakhasia Road near Boldamgiri, West Garo Hills District, Meghalaya.

***Hammenisporis pudens* (S. K. Salujha et al.) R. K. Saxena, comb. nov.**

Basionym: *Cicatricosisporites pudens* S. K. Salujha et al., in Ghosh A. K. et al. (Editors) - *Proceedings of the Symposium on Paleopalynology and Indian Stratigraphy*, Calcutta, 1971, Botany Department, Calcutta University, p. 272, plate 1, figures 24-25. 1972.

Holotype: Salujha et al. 1972, plate 1, figure 24, photo no. 6/12, slide no. not mentioned, stored in the Palynology Laboratory, K. D. Malviya Institute of Petroleum Exploration, Oil and Natural Gas Corporation, Dehradun, India.

Indian records: Salujha et al. 1972b, p. 272, plate 1, figures 24-25, Palaeogene, Garo Hills, Meghalaya; Salujha & Kindra 1984: 395, pl 1, fig 14, Miocene, Atharmura Anticline, Tripura; Salujha & Kindra 1986, p. 242, plate 1, figure 15, Oligocene-Miocene, Silchar-Haflong Road Traverse, Cachar District, Assam; Kumar & Takahashi 1991, p. 584, plate 4, figure 4, Jenam Formation (Middle Oligocene), Silchar-Haflong Road Section, Assam; Salujha et al. 1991, p. 65, plate 1, figure 14, Neogene, Adamtila Well-A, Cachar District, Assam.

***Striatriletes punctatus* (R. K. Saxena & M. R. Rao) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes punctatus* R. K. Saxena & M. R. Rao, Geophytology 26(1), p. 50, 52, plate 1, figures 16-17. 1996.

Holotype: Saxena & Rao 1996, plate 1, figure 17, slide no. BSIP 11661/ 5, coordinates 21.8 x 163.6, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Saxena & Rao 1996, p. 50-52, plate 1, figures 16-17, Boldamgiri Formation (Early Miocene), Adu giri-Purakhasia Road near Boldamgiri, West Garo Hills District, Meghalaya; Rao 2000, p. 295, Kherapara Formation (Oligocene), Tura-Dalu Road Section near Kherapara, West Garo Hills District, Meghalaya.

***Hammenisporis sahnii* (R. Y. Singh et al.) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes sahnii* R. Y. Singh et al., J. Palynol. 21, p. 46, plate 1, figures 4, 16. 1985.

Holotype: R. Y. Singh et al. 1985, plate 1, figure 16, slide no. BSIP 5085/ 1, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Singh et al. 1985, p. 46, plate 1, figures 4, 16, Barail Group (Oligocene), Assam and Meghalaya; Kapoor et al. 2003, p. 182, Dharmsala and Siwalik (Oligocene-Neogene), Dharmsala and Nurpur areas, Kangra District, Himachal Pradesh.

***Hammenisporis sinuosus* (M. R. Rao & H. P. Singh) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes sinuosus* M. R. Rao & H. P. Singh, Palaeobotanist 35(3), p. 275, plate 2, figures 2-3. 1987.

Holotype: Rao & Singh 1987, plate 2, figure 3, slide no. BSIP 8407, coordinates 66.10 x 95.10, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Rao & Singh 1987, p. 275, plate 2, figures 2-3, Lubha Member, Bhuban

Formation (Early Miocene), Sonapur-Badarpur Road Section, Jaintia Hills, Meghalaya and Cachar District, Assam; Rao & Patnaik 2001, p. 269, plate 2, figure 5, Pinjor Formation (Late Pliocene), Nadah, Panchkula, Haryana.

***Hammenisporis striatus* (S. K. Salujha et al.) R. K. Saxena, comb. nov.**

Basionym: *Magnastriatites striatus* Salujha et al., J. Palynol. 14(1), p. 75, plate 1, figures 31-32. 1979.

Lectotype (here designated): Salujha et al. 1979, plate 1, figure 31, photo no. 86/ 22, slide no. and repository not mentioned.

Indian records: Salujha et al. 1979, p. 75, pl 1, figures 31-32, Miocene, Gojalia Anticline, South Tripura District, Tripura.

Remarks: Salujha et al. (1979) illustrated two specimens but did not designate any of them as holotype. One of them (plate 1, figure 31) is selected here as lectotype.

***Hammenisporis tetradites* (M. R. Rao) R. K. Saxena, comb. nov.**

Basionym: *Striatriletes tetradites* M. R. Rao, Palaeobotanist 49(2), p. 299, plate 2, figure 17. 2000.

Holotype: Rao 2000, plate 2, figure 17, slide no. BSIP 12302, coordinates 10.5 x 130.6, stored in the museum of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.

Indian records: Rao 2000, p. 299, plate 2, figure 17, Kherapara Formation (Oligocene), Tura-Dalu Road Section near Kherapara, West Garo Hills District, Meghalaya.

***Hammenisporis venustus* (S. K. Salujha et al.) R. K. Saxena, comb. nov.**

Basionym: *Cicatricosisporites venustus* S. K. Salujha et al., in Ghosh A. K. et al. (Editors) - Proceedings of the Symposium on Paleopalynology and Indian Stratigraphy, Calcutta, 1971, Botany Department, Calcutta University, p. 272, plate 1, figures 22-23. 1972, non Sah et al., p. 638, plate 2, figures 20-21, 30. 1980 (nomen nudum).

Magnastriatites venustus (S. K. Salujha et al.) S. K. Salujha et al., *Palaeobotanist* 21(3), p. 272, plate 1, figure 16. 1974.

Holotype: Salujha et al. 1972, plate 1, figure 22, photo no. 1/13, slide no. not mentioned, stored in the Palynology Laboratory, K. D. Malviya Institute of Petroleum Exploration, Oil and Natural Gas Corporation, Dehradun, India.

Indian records: Salujha et al. 1972, p. 272, plate 1, figures 22-23, Palaeogene, Garo Hills, Meghalaya; Salujha et al. 1974, p. 272, plate 1, figure 16, Palaeogene, Khasi and Jaintia Hills, Meghalaya; Salujha et al. 1977, p. 124, Bokabil Subgroup (Late Miocene-Early Pliocene), Gojalia Anticline, South Tripura District, Tripura; Salujha & Kindra 1984, p. 395, plate 1, figure 13, Miocene, Atharmura Anticline, Tripura; Salujha & Kindra 1986, p. 242, plate 1, figure 14, Oligocene-Miocene, Silchar-Haflong Road Traverse, Cachar District, Assam; Salujha et al. 1991, p. 65, pl 1, fig 13, Neogene, Adamtila Well-A, Cachar District, Assam.

Hammenisporis vulgaris (S. K. Salujha et al.)

R. K. Saxena, *comb. nov.*

Basionym: *Magnastriatites vulgaris* S. K. Salujha et al., *J. Palynol.* 14(1), p. 75-76, plate 2, figures 33-34. 1979.

Holotype: Salujha et al. 1979, Plate 2, figure 33, photo no. 90/28, slide no. and repository not mentioned.

Indian records: Salujha et al. 1979, p. 75-76, plate 2, figures 33-34, Miocene, Gojalia Anticline, South Tripura District, Tripura.

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