

DR. HUKAM SINGH

Scientist 'F'

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Field of specialization: Vertebrate Paleontology and Amber biota (Research experience even in the field of micro and macro flora). Diversified (Palaeontological) research findings closely cover all the field of Palaeobiological research work.

Education:

- **M.Sc. Ph.D.** HNB Garhwal University Srinagar Garhwal Uttarakhand, India.
- **Ph.D. in Geology** 2005 from HNBGU Srinagar Garhwal Uttarakhand, India.
- **Ph.D. thesis title:** Early Tertiary **vertebrate** fauna from Barmer Basin, western Rajasthan, India and their palaeoenvironmental implications.
- **Mentor: Professor R.S. Rana**, HNB Garhwal University Srinagar, Uttarakhand, India.
- **Research Interest:** Multidisciplinary research work (Vertebrate/Invertebrate/Arthropods/Plants).
- **Research work done:** Cambay Basin (Vastan, Tarkeshwar, Mangrol, Valia lignite deposits) and in Kutch Basin (Umarsar, Panandhro, Matanomadh lignite deposits) Gujarat, excluding these I have done the work in Barmer, Bikaner, Nagaur, Jaisalmer Basin Rajasthan. Within these even covered some of the study areas of Darjeeling District, West Bengal and Himachal Pradesh etc.
- **Field Experience:** Covered nearly all the field areas of Paleontology, Palaeoentomology (amber biota) and Palaeobotany (micro, macro and mega flora) in Palaeogene age.

Residential as well Official addresses:

- **Official address:** Birbal Sahni Institute of Palaeosciences, 53 University Road Lucknow.
- **Phone:** +91(522) 274940 (Office), **Fax:** +91(522) 2740485 (Office), **Mobile:** 9919401173.
- **Residential address:** House No. 610/1828, Keshav Nagar, Sitapur Road, Lucknow, 226021.

Research Interest:

More than 23 years research experience in the field of scientific carrier, I have covered nearly most of the field areas of Palaeontology (vertebrates, invertebrates) amber biota (plant, arthropods, insects) as well as palaeobotany (mega, macro and micro plant fossils) of the sedimentary sequences associated with Rajasthan Basin (Barmer, Bikaner, Nagaur) and Cambay Basin (Tarkeshwar, Vastan, Valia and Mangrol) and recently Kutch Basin (Umarsar, Panandhro and Matanomadh (lignite deposits) Gujarat, India. I have studied the diverse Tertiary vertebrates, invertebrates, teredolite ichnofossils, amber embedded bio-organisms and also variety of mega

and micro faunal-floral assemblages from different Tertiary deposits of Rajasthan and Gujarat province. I have made significant contribution to the biogeography, stratigraphy, palaeoecology, palaeoenvironment, age and phytogeography of the Tertiary faunal-floral remains on these sedimentary sequences of these study areas. In addition to the aforementioned contribution, I have to my credit, the first reporting of Dipterocarp fossil from Early Eocene of Cambay Basin, Gujarat and the discovery of dammarane type of terpanoid compound preservation in the amber from Matasukh Lignite mine, Nagaur Basin, Rajasthan and Cambay Basin, Gujarat. I have reported various groups of significant amber embedded social insects (ant, bees, and termite), even spore and pollen remains recorded for the first time in amber from Cambay Basin Gujarat India and also some of the new shark fish assemblages (several species) were reported for the first time in the Indian subcontinent in the sedimentary sequences of Cambay Basin, Gujarat and Barmer, Bikaner and Jaisalmer Basins of Rajasthan. One of the biogeographically significant contributions of my work is the finding of fossil bat record which dates back to Early Eocene. I am continuing palynological studies in Himalaya regions of Lower Siwalik in Darjeeling district also. I have been working on the multidisciplinary research in Cambay Basin which has attracted well reputed international scientists from diverse field. The contribution along with all these scientists has brought out exciting findings (ant, bee, termite, spider, mosquito, fly, bugs, scorpions, beetle, web spinners), more than 150 species and in fossil plants (leaf impression, seed, wood, spore, pollen, flowers etc) the research is still under way towards the progress of new exciting fossil findings.

- **Project area:** Presently working in the Institute project (Project no. 3.8): Analysis of Amber biota from early Palaeogene sedimentary sequences of Gujarat and Rajasthan basins: Palaeoclimatic and palaeoecological perspectives. Excluding the Institutes (In-house) Project working in Collaboration with the well reputed scientists with India, US and Germany to cover overall diverse biotic assemblages on Cambay Basin (Surat District) and Kutch Basin (Bhuj District) Gujarat as well as Rajasthan Basin (Barmer, Bikaner, Nagaur and Jaisalmer).

➤ Award Certificates:

- **Received most cited research paper Certificate (Year 2020-21)** from the Editor 'Palaeontology' (WILEY) on the top cited research article in the year 2020-2021. The increasing citation of the article is the major achievement of significant findings as well it increases the impact of the Journal.
- **Received most cited research paper Certificate (September 19, 2019) from the Editor** (International Journal): "PLOS ONE" on the investigation of 'Biting Midge (Diptera: Ceratopogonidae) from Cambay Amber Indicate that the Eocene Fauna of the Indian Subcontinent was not Isolated'. (Article was published in 2017).

- **Received most cited research paper Certificate (Year 2010) from the Editor** (International Journal): “**Acta Palaeontologica Polonica**” on the discovery of ‘Diverse snake fauna from the Early Eocene of Vastan Lignite mine Surat District, Gujarat, India’. (Article published 2008).

Awards Medals:

- **Awarded ‘S. K. Singh Memorial Gold Medal for the Year 2023’** from Palaeontological Society of India, Lucknow for the best scientific contribution among the paper published in the Journal Palaeontological Society of India. Journal of the Palaeontological Society of India. 67 (2), 357-362. (Notification Announced)
- **Awarded ‘S. K. Singh Memorial Gold Medal in the Year 2020’** from Palaeontological Society of India, Lucknow for the best scientific contribution among the paper published in the Journal Palaeontological Society of India (2019), V. 64 (2), 184-226.
- **Awarded ‘Team Medal 2018’** for high quality research work including high quality Impact Factor publications of the several research articles in Refereed Journal viz. Scientific Report PLOSONE etc. **(Impact Factor: 13♣). Award received from BSIP, Lucknow.**
- **Awarded ‘Team Medal 2010’ in the year 2013** for high quality/ high Impact Factor publishing papers in Refereed Journal (**PNAS, US and New Phytologist, Fungal Biology etc**). **Impact Factor: 18 ♣. Award received from BSIP, Lucknow.**

Major International Collaboration and Research Experience:

1. Worked in National and International Collaboration with **National Geographic** team India, US and Belgium, (Year 2002 to 2007).
2. International Collaborative research on **amber** is still in rapid progress and excellent research development with International well repute scientists from India, US and Germany, (Year 2008 to till date, continued).
3. National Collaboration with the scientist **IIT Bombay** and Inter institutional Scientist **BSIP, Lucknow** is still continued.

Field workshop: Attended an major International field workshop at Vastan Surat, Gujarat. Participated in the field workshop (17th to 19th January, 2012) which was organized by Palaeontological Society of India (PSI) Department of Geology, University Lucknow, which was highly interesting and significant for the scientific community where several universities/ Institutions/ organizations involved.

Professional Membership:

1. Life member of the 'Journal Palaeontological Society of India' Lucknow, India.
2. Life member of the 'Journal Himalayan Geology' Dehradun, India.
3. Life member of the 'The Palaeobotanical Society' Lucknow, India.

- **Project work experience:** Worked as Project Fellow/Senior Research Fellow in Department of Geology, University Srinagar Garhwal, engaged in DST sponsored project on faunal investigation of Barmer District, western Rajasthan during Ph.D. Course.
- ♣ **Sponsored Project:** Working on mega DST Sponsored Project on the title: Analysis of Early Eocene Amber from Cambay and Kutch Basin, Gujarat, Western India: Palaeoecological, Environmental and Climatic Significance. It begins from 07/03/2017 to continue.

Total Published/Accepted Research Articles: (97)

(♣) Indicates International well reputed (Impact factor) Journals, and (*) indicates corresponding author.

- [1]. Agnihotri, P. Singh, H. Singh, B. Agarwal, A.K. Nadein, K. (2026). New species of leaf beetle (Coleoptera: Chrysomelidae) from the Middle Eocene amber of Kutch, India, based on synchrotron micro-CT- data. *PALZ*. <https://doi.org/1007/s12542-026-00781-0> (Impact Factor: 1.5).
- [2]. Andre, P. A. Silva, F.L. Singh, H. Azar, D. Perkovsky, E. Muller, P & Baranov, V. (2026). New mandibulate Chironomidae from Cretaceous and Eocene amber deposits: insights into the evolution of biting midges. *PALZ* (IF. 1.5).
- [3]. Singh, H* Agnihotri, P. Mishra, S. (2026). Biogeographical implications of the flora from the Middle Eocene Harudifformation in the Umarsar Lignite Mine, western India.. *Palynology*. <https://doi.org?10.1080/01916122.2026173> (Impact Factor: 1.8).
- [4]. ♣Singh, H*. Tiffney, B.H. Judd, W.S. Agnihotri, P. Manchester, S. R (2026). Flower and fruit of Malvaceous affinity preserved in amber from the Eocene of western India. *International Journal of Plant Sciences*. (In press). (IF. 1.6).
- [5]. Prasad, M. Singh, H*. Singh, P.K and Singh, S.K (2026). Record of new fossil leaf species, *Mappia siwalika* and *Leea himachalensis* from Middle Siwalik sediments of Himachal Pradesh, India and their biogeographical significance. *Himalayan Geology*. V. 47 (1), pp. 34-41. (IF. .9).
- [6]. Prasad, M. Singh, H*. Singh, S.K. (2025). Fossil leaves of the genera, *Canarium* Linn. (Burseraceae) and *Lagerstroemia* Linn. (Lythraceae) from Middle Siwalik sediments of

Himachal Pradesh, India: phytogeographic and palaeoclimatic implications. *Journal of Palaeosciences*. V. 74, pp.89-99. <https://doi.org/10.54991/10.54991/jop.2025.1921>.

- [7]. Prasad, M. Pandey, S.M. Singh, A. **Singh, H*** and Singh, S.K. (2025). Upper Miocene flora of Sarkaghat area in the Himalayan foreland basin of Mandi district, Himachal Pradesh, India and its palaeoclimatic and phytogeographic significance. *Geophytology*. V. 55 (2), 221-250
- [8]. Saxena, R.K. Doweld, A.B. Lanjewar, S.G. and **Singh, H** (2025). Validation of the names of one genus and three species of fossil angiosperms from India. *Geophytology*. V. 55 (2), 191-194.
- [9]. ♣Agnihotri, P. Singh, V.P, **Singh, H**. Grimaldi, D. Thakkar, M.G. Priya, T. Subramanian, K. A. Dutta, S. Mishra, S. (2025). Eocene amber fossils reveal how complex tropical interactions shaped tropical rain forest biodiversity. *iSCIENCE (CellPress)*. 28, 113430, September 19, 2025. (IF: 4.1).
- [10]. ♣Sroka, P. Agnihotri, P. **Singh, H***. (2025). The first record of mayflies (Ephemeroptera: Leptophlebiidae) from Cambay amber suggests a Gondwanan mayfly fauna in early Eocene India. *Zoological Journal of Linnean Society*. 2025, 204, zlaf065<https://doi.org/10.1093/zoolinnea/zlaf065> Advance access publication 1 July 2025. (IF: 2.9).
- [11]. Ranjan, R. Prasad, M. & **Singh, H***. (2025). New fossil leaves resembling *Chisocheton* Blume and *Swietenia* Jacq. Of family Meliaceae from Middle Siwalik Group of Sarkaghat area, Mandi District, Himachal Pradesh, India. *Geophytology*. 55 (1), 95-104.
- [12]. Farooque, A. **Singh, H***. (2024). *Habrotrocha angusticollis* from Miocene sediments and their extant forms in the Indian Sub-Continent. *Journal Palaeosciences*. 73, 149-156.
- [13]. **Singh, H***. Singh, P.K. Prasad, M. Singh, S.K. (2024). Fossil leaves belonging to family Annonaceae from Sub-Himalayan zone (Siwalik) of Himachal Pradesh, India and their climatic and phytogeographic implications. *Journal Palaeosciences*. 73, 165-178.
- [14]. **Singh, H***. Agnihotri, P. (2024). A note on the significance and futuristic approach of the newly established Amber Analysis and Palaeoentomology Laboratory at the Birbal Sahni Institute of Palaeosciences, Lucknow. *Journal Palaeosciences*. 73, pp. 93-94.

- [15]. **Singh, H***. Agnihotri, P. (2024). Amber Analysis and Palaeoentomology Laboratory at the Birbal Sahni Institute of Palaeosciences, Lucknow: a new dimension to Indian palaeontology. *Current Science*. 126 (11), p. 1309. (Impact Factor: 1.2).
- [16] Agnihotri, P. **Singh, H** Subramanian, K.A. Vishwanathan, J. Sahni, A. (2024). A new genus and species of fossil pseudoscorpion (Arachida: Pseudoscorpiones) from the Eocene amber of Western India. *Palaeontologia Electronica*. 27 (2): a26. <https://doi.org/10.26879/1276>. (Impact Factor: 2.2).
- [17]. Agnihotri, P. **Singh, H**. Subramanian, K.A. & Acharya, S. (2023). Scanning electron microscopy of *Sarcoptes kutchensis*, a new species of a Middle Eocene sarcoptid mite in amber from the Umarsar Lignite Mine of Kutch, Western India. *Historical Biology*. 36(12), 2847-2853. <https://doi.org/10.1080/08912963.2023.2281579>. (Impact Factor: 1.9).
- [18]. Uddandam, P. Agnihotri, P. Agrawal, S. **Singh, H*** (2023). Early Eocene biotic assemblage from the sedimentary deposits of the Tarkeshwar Lignite Mine, Gujarat and its palaeoenvironmental implications. *Journal of Palaeosciences*. 72, 127-139.
- [19]. Agnihotri, P. **Singh, H***. (2022). Stratigraphic Harudi signatures at the Umarsar Lignite Mine, Kutch Basin, Gujarat, India. *Journal of the Palaeontological Society of India*. 67 (2), 357-362. (Impact Factor: .8).
- [20]. Singh, P.K. **Singh, H***. Singh, S.K. Prasad, M. (2022). Fossil leaf and fruit of the genus *Harpullia* Roxb. From Upper Miocene (Siwalik) sediments in the Sub-Himalayan zone of West Bengal and its biogeographic and palaeoclimatic significance. *Journal of the Palaeontological Society of India*. 67 (2), 342-348. (Impact Factor: .8).
- [21]. **Singh, H**. Ranjan, R. Singh, P.K and Prasad, M. (2022). Two new fossil leaf species, *Fissistigma himachalensis* (family: Annonaceae) and *Berberis siwalika* (family: Berberidaceae), from Middle Siwalik of Sarkaghat, Himachal Pradesh, India. *Geophytology*. 52 (1&2), 57-66.

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- [23]. Wagner, R. Agnihotri, P. Singh, H. (2022). A new species of Sycorax (Sycoracinae: Psychodidae) from the Lower Eocene amber of Tadkeshwar, Gujarat, India. *Palaeoentomology*. 005 (4), 319-326. (Impact Factor: 2.3).
- [24]. Singh, H*. Agnihotri, P. Sharma, J. (2022). Amber flora and fauna from Early Eocene Vastan Lignite, Mine, Cambay Basin, Gujarat: Ecological Diversity and Environmental Significance. *Journal Geological Society of India*. 98, 661-668. (Impact Factor: 1.4).
- [25]. ♣Umamaheswaran, R. Dutta, S. Singh, H. Kumar, S. (2022). Pyrolysis-GCxGC-TOFMS as a tool for distinguishing the macromolecular structure of nitrogen-bearing animal biopolymers in fossil tissues. *Journal of Analytical and Applied Pyrolysis*. 161, 105362. (Impact Factor: 5.5).
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- [35]. Dutta, S. Kumar, S. Singh, H. Khan, M.A. Barai, A. Rana, R.S. Tewari, A. Bera, S. Sen, S. Sahni, A. (2020). Chemical Evidence of Preserved Collagen in 2.5 Ma and 54 Ma old Fossilized Fish Remains. *Palaeontology*. 1-8. Doi: 10.1111/pala.12469. (Impact Factor: 2.6)].
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implications on habitats of Diptera. *Palaeogeo, Palaeoclimat, Palaeoecol.* 475, 154-161. **(Impact Factor: 3.3).**

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phytogeographic and palaeoclimatic implications. *Palaeoworld*. 24, 293- 323. (Impact Factor: 1.7).

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- [1]. Mishra, H. Agnihotri, P and Singh, H (2026). Early Eocene Dipteran Families from the Valia Deposits (Cambay Basin, India): Implications for Tropical Rainforest Evolution. 30th ICMS2026/SEOCS/095. P. 98. [10-12 June, 2026].
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- [3]. Agnihotri, P and Singh, H. (2026). Palaeoecology locked in resin: Spider Families from Indian Amber: Their implications in palaeoenvironmental reconstruction. 30th ICMS2026/SEOCS/149. P. 152. [10-12 June, 2026].
- [4]. Agnihotri, P. Singh, H. (2025). The bearing of amber microbiota from the Eocene lignite sequences of Gujarat on palaeoenvironmental reconstruction. NIO Goa Colloquium Conference.
- [5]. Singh, H*. Agnihotri, P. (2024). The Lignite Mines of Kutch Bain, Gujarat and its sedimentary deposits: Their impact on age dynamics and biotic records. 40th Convention of Indian Association of Sedimentologists & National Conference on an Odyssey of Sedimentology from Precambrian to Anthropocene: Significant contributions in Environmental Climatic and Energy Research, December 11-13, 2024. Abstract No. IAS2024/BSIP/085

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- [8]. Agnihotri, P*. [Singh, H.](#) Subramanian, K.A. (2022). Diverse record of spider fossils in amber from the Valia lignites of western India. **XXVIII Indian Colloquium on Micropalaeontology and Stratigraphy**. p.144.
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Supervised PhD students as main Supervisor:

- [1]. **PhD Supervised (Priya Agnihotri):** Entitled: Eocene arthropods in amber from the Kutch and Cambay lignites, Gujarat, India: their bearing on palaeoenvironments. *Awarded PhD Degree (on 6th December, 2023).*
- [2]. **PhD Supervising (Pawan Kumar Singh, Thesis work in progress):** Entitled: Studies on plant mega fossils from the Siwalik (Miocene) sediments of Darjeeling District, West Bengal, India.

Supervised three Master's Dissertation:

- [1]. Khushbu Kumari (2026). Early Eocene biotic assemblage and palaeoenvironmental reconstruction from the Valia lignite, mine, Cambay basin, Gujarat, India. 20 January, 2026 to 21 May, 2026. Certificate no. Diss./2026/05/331. [Roll No.2401035306015]. Maharishi University of Technology, Lucknow.
- [2]. Pooja Devi (2026). Amber embedded bio-inclusions: An insight into the nature of preservation, their palaeoecology, forest ecosystem and palaeoenvironmental significance of Umarsar lignite deposit, Kutch, Gujarat, India. 19 January, 2026 to 20 May, 2026. Certificate no. Diss./2026/05/328. [Roll No.2310014195012]. Maharishi University of Technology, Lucknow.
- [3]. Saurav Awasthi (2026). Cambay amber and its bio-inclusions into the nature of trapped biological remains. 20 January, 2026 to 21 May, 2026. **Certificate No. Diss./2026/---** [Roll No. 2401035306029]. Maharishi University of Technology, Lucknow.

- [4]. Sakshi Tiwari (2025). Palynological applications, investigated floral components and palaeoenvironmental significance of Umarsar lignite mine, Kutch, Gujarat, western India. MSc (Semester II, Department of Botant (**Environmental Science, Roll No. 2310014195012**)). Dissertation Training was three months starting from April 2025 to June, 2025.
- [5]. Miss. Rupal Dubey M.Sc. (Tech) Semester II, Dept. of Geology BHU. Training was **three weeks** starting from 21 May, 2012.
- [6]. Mr. Abhisekh Sharma, student B. Tech (Geo-Science Engg.) Semester- VI, Dept. of Petroleum Engineering and Earth Sciences, University of Petroleum and Energy Studies, Dehradun. The tenure of his training was **eight weeks** starting from 4th June, 2012.