



The Himalayan Fossil Hoax

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Abstract

The Himalayan fossil hoax, or simply the Himalayan hoax, or the case of the peripatetic fossils, was perpetrated by an Indian geologist Vishwa Jit Gupta of Panjab University. Since his doctoral research in the early 1960s and the following two decades, Gupta worked on the geological and fossil studies of the Himalayan region, producing hundreds of research publications that were taken as fundamental to understanding the geology of the Himalayas. The Australian geologist John Talent of Macquarie University, who also worked on the geology of the Himalayas, found that Gupta's reports did not match those geological settings and the fossils were particularly odd, with some of them extraordinarily similar to those from other parts of the world. With Glenn Brock, Talent meticulously scrutinized Gupta's voluminous publications and revealed that Gupta had manipulated, faked, recycled, and plagiarized his data. Early in 1978, Gilbert Klapper and Willi Ziegler had suspected foul play when they noticed that Gupta's conodont fossils were similar to those collected by George Jennings Hinde from Buffalo, New York, a century before. As Arun Deep Ahluwalia recalled, Gupta had faked conodont fossils by planting them in the Himalayan rock samples to impress Kiril Budurov in 1980. Gupta duped Philippe Janvier into describing a fish fossil as a new species in 1982, which Janvier later found was collected from China. Talent also discovered in 1986 that Gupta used Moroccan fossils available in a Paris shop to report the presence of ammonoid fossils in the Himalayas. Brock's investigation showed that Gupta's earliest publications including his doctoral thesis indicated plagiarized fossil pictures directly clipped from the 20th-century monographs of Frederick Richard Cowper Reed. Talent publicly revealed Gupta's anomalous fossils and geological inconsistencies at the International Symposium on the Devonian System held at Calgary, Canada, in 1987. His documented criticism was published in German serial *Courier Forschungsinstitut Senckenberg* the next year, but was not widely read. Dubbed the Himalayan peripatetic (misplaced) fossils, the case became global news in 1989 when Talent summarized the *Courier* story in *Nature*, with an associated journalistic investigation by Roger Lewin published in *science*. It came to light that many of Gupta's Himalayan fossils were acquired from different parts of the world – some bought and some apparently stolen. Gupta had chosen "phantom localities" to attribute his fossil discoveries without ever visiting them. The University Grants Commission of India withdrew its funding to his research. Although suspended for 11 months, Panjab University continued his employment until his normal retirement in 2002. The case was described as "the biggest paleontological fraud of all time" by Talent and as the "greatest scientific fraud of the century" by the Indian magazine *Down to Earth*.

Background

Vishwa Jit Gupta (1942–2022) worked for his Ph.D. degree under the supervision of Mulk Raj Sahni at [Panjab University](#) in Chandigarh, India. Focussing on the palaeontology and geological features of the Himalayas, he started his main research and field work in 1963. He and Sahni reported the initial findings in five papers in 1964 – a discovery of graptolites in two papers in *Nature*,^{[1][2]} a fossil assemblage in two papers

in *Current Science*,^{[3][4]} and one in the *Journal of the Palaeontological Society of India*.^[5] His doctoral thesis was entitled *Palaeontology, Stratigraphy and Structure of the Palaeozoic Rocks of the Area South-East of Srinagar* upon which he received his degree in 1966.^[6]

Over 25 years, Gupta published over 458 research articles and five books.^[7] His publications were recognised as standard references on the [geology](#) and fossil record of the Himalayan region.^{[8][9]} As an honour, Panjab University awarded him a D.Sc. and in 1972 created him a separate chair and director of the Institute of Paleontology.^[7]

Technical incongruities in Gupta's research were first pointed out by Sampige Venkateshaiya Srikantia, Om Narain Bhargava and Hari Mohan Kapoor of the [Geological Survey of India](#).^{[10][11]} In 1978, Srikantia's team

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described the presence of bivalve mollusk fossils (*Eurydesma cordatum* and *Deltopecten mitchelli*) from Lahaul Valley, Himachal Pradesh, following a scientific exploration of the Himalayas.^[12] They came across the accounts of Gupta on the identification of *Erydesma* at two locations in the Himalayas. In 1970 Gupta had reported finding the fossils in **Lachulung La**, identifying the deposits as Permian (Cisuralian, around 298 to 272 million years old) limestone.^[13] In 1973, he again described the same specimens from the Malung shale of Lahaul Valley in his book *Indian Palaeozoic Stratigraphy*.^[14] Here, Gupta assigned the fossils to a much younger Upper Permian (Lopingian, around 259 to 251 million years old). Srikantia's team noticed not only that Gupta's bivalves could not have existed in such different ages, but also found critical errors. They determined that Lachulung La was of a much younger series, the Triassic-Jurassic (250 to 145 million years old); Malung shale was already known to be of Upper Triassic (208 to 201 million years old). Their report ends with a cautionary statement: "The sequence built up by Gupta in the Sarchu area cannot be used for any stratigraphic work."^[12]

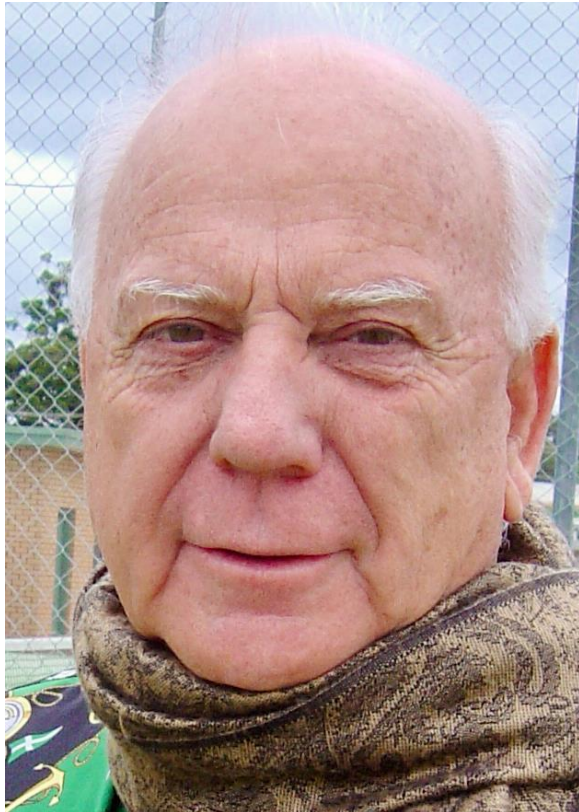


Figure 1 | John Alfred Talent at age 72. [Nadia Talent, CC0]

In 1978, American geologist **Gilbert Klapper** from the **University of Iowa** met **Willi Ziegler** at the **University of Marburg** in Germany to discuss the progress of research on the fossil group of jawless vertebrates, the **conodonts**. At the time of Klapper's visit, Ziegler had two Australian guests, John W. Pickett from the Geological Survey of New South Wales and his associate **John Alfred Talent** (Figure 1^[a]) from Macquarie University in Sydney.^[16] Talent by then was an established expert in the Devonian geology of Australian and Indian regions.^{[17][18][19]} As the leader of the research team of the first **International Geological Correlation Programme** (IGCP-1), a project of **UNESCO**, Talent explored the Himalayas from 1973–1977.^{[20][21][15]} Pickett and Talent shared their Himalayan studies and discussed Gupta's research on the conodonts. They had also investigated 20 locations around Nepal,^[22] where Gupta had claimed many discoveries of conodonts from Triassic, Permian, Carboniferous (around 359 to 299 million years old) and **Devonian** (around 420 to 360 million years old) deposits,^{[23][24][25][26][27]} and to their astonishment, found not a trace of fossils, except one that belonged to an older period, the **Silurian** (around 443 to 420 million years ago).^[28] In one particular case, they explored the area where Gupta and **William B. N. Berry** had reported in 1966 several fossils from Kashmir.^[22] They found that not only the rocks were wrongly identified, but were so deformed that no fossil could have been present.^[16]

When Klapper and Ziegler learned of this story, they checked some of Gupta's papers and instantly noticed in two papers photographs of the same conodont fossil. Gupta's report indicated they were collected from sites several miles apart. They thought this could be a case of accidental duplication of the same photograph.^[29] The real suspicion arose when they found the resemblance of Gupta's fossils with those collected by **George Jennings Hinde** from the **Eighteen Mile Creek** near Buffalo in New York (Figure 2),^[30] that had been presented before the **Geological Society of London** a century before, in 1876.^[31] Gupta sought out Klapper and Ziegler to collaborate at different times, but they declined due to their concern about the suspicious incidents.^[16]

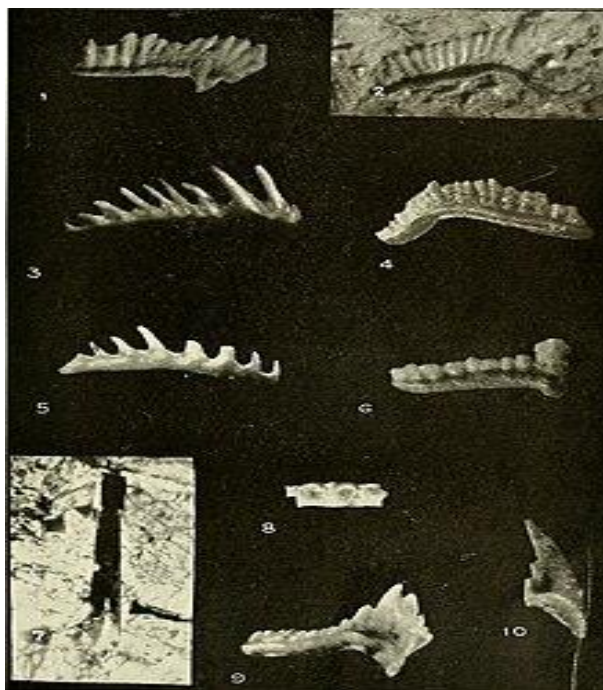


Figure 2 | Conodonts from Eighteen Mile Creek. Numbers 7 and 10 were reported by G. J. Hinde. [Buffalo Society of Natural Sciences, Flickr Commons]

The first methodical and critical analysis of Gupta's research records were done by Prem N. Agarwal and S. N. Singh of Lucknow University. In 1980, Agarwal and Singh reviewed research development in the general palaeontology of the Himalayas in which they also examined Gupta's papers.^[32] First, they found the long list of conodonts described by Gupta in 1978^[33] that bears an uncanny resemblance to those in the doctoral thesis of Nand Lal Chhabra submitted to the University of Lucknow in 1977. They noted: "It is a surprising coincidence, unless either of the authors has drawn upon the data of the other without proper reference or acknowledgement."^[32] Gupta's conodonts and their geological settings turned out to be a major issue.^[34] What Agarwal and Singh revealed next was the utterly messed up fossils with their locations in most of Gupta's papers; the same species found in the same location reported in one paper were absent in another report. The overall information was so chaotic and inconsistent that they concluded: "These anomalies in different papers by the same author/s are not understandable unless they are serious printing mistakes."^[32]

Talent made another startling discovery in 1987 while he was in Paris.^[16] He visited Alain Carion's shop of minerals, fossils and meteorites, the *Carion Minéraux*, on Île

Saint-Louis.^[35] He purchased many fossils from there including some extinct mollusks and ammonoids that were explicitly labelled to have been collected from a fossil site near Erfoud, Morocco. The Moroccan fossils, as he soon discerned, were very similar to, indeed identical to Gupta's fossils from the Himalayas. It was then that Talent decided to compile the accumulating record of discordance in Gupta's research.^[16] With his former student and associate Glenn Anthony Brock, he meticulously reanalyzed Gupta's published works, establishing that the artifice was not just one or few incidences but that Gupta was a prolific fraudster, faking, recycling and plagiarizing research data in hundreds of publications.^{[36][37]}

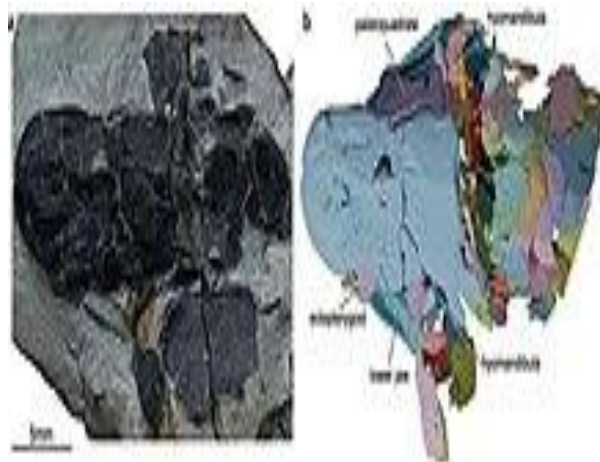


Figure 3 | *Youngolepis praecursor*, a fish fossil from Yunnan, China, which Gupta claimed also present in the Himalayas. [Cui et al., 2022, CC-BY-SA 4.0]

In 1980, Gupta met Philippe Janvier at the Museum of Natural History in Paris^[38] and showed him "a magnificent fossil fish skull" which he brought along.^[16] He claimed that the fossil was collected by him from Zaskar, Ladakh, at the foothills of the Himalayas. Recognizing the fossil as a new species, Janvier made the identification and with Gupta submitted the discovery in *Recent Researches in Geology*.^[38] Shortly after, Janvier went to Sweden where he met Mee-mann Chang (also Zhang Miman) from the Chinese Institute of Vertebrate Paleontology and Paleoanthropology who was working on her doctoral research on fish fossils from China.^[39] Janvier immediately noticed that some of Chang's fossils were exactly like the one he and Gupta had recently described. When inquired, Chang explained to him that the particular specimen was a De-



vonian *coelacanth* she named *Youngolepis praecursor* (Figure 3) that was found in Yunnan region and North Vietnam, and so common in those regions that the fossils were frequently used as gifts to visitors. Chang had already published the discovery in January 1981.^[40] Janvier told Gupta to hold their publication, but eventually got it published in 1982 with a few modifications based on Chang's paper.^{[41][42]} With an unsettled mind on the origin of the Himalayan fossil, Janvier reported a note of concern in the *Bulletin of the Indian Geologists Association*^[43] remarking that Chang's and Gupta's specimens were "strikingly similar."^[38] Although Gupta avowed that he had never been to the fossil site in China,^[42] it was known that he had a trip to China just before going to France. Janvier was convinced that Gupta had fooled him: "Now, there is no evidence that Gupta brought the fish fossil with him from China, but I'm 99% sure he did."^[16]

The exposé

Calgary symposium



Figure 4 | Genuine ammonoid fossil, *Ophiceras sakuntala*, from the Himalayas. [Ghedo, CC-BY-SA 4.0]

Gupta's practice of fakery was first publicly exposed at the "International Symposium on the Devonian System" held in Calgary, Canada from 17 to 20 August 1987.^[44] The week before, Talent came across a paper

by Gupta and German palaeontologist **Heinrich Karl Erben** (Institut für Paläontologie, Bonn) published in *Paläontologische Zeitschrift* in 1983 reporting a series of Devonian ammonoids from Himachal Pradesh (Figure 4 is an example of such an ammonoid).^[45] When Talent presented his research at the symposium,^[46] he added a discussion on the Himalayan fossils, including Gupta's ammonoids and those from Morocco displaying them side by side on the screen;^[47] they appeared "the same".^[48] Another case of identical fossils presented by Talent was from Gupta's accounts of two conodonts in 1975, allegedly collected from two sites 600 kilometers apart and described in two different papers.^[49] One scientist pointed to Gupta, who was sitting in the front row and said: "Well, how do you explain having the same fossils in two localities 600 kilometers apart?" An infuriated Gupta stormed out of the room and re-entered clenching his fist as he tried to punch Talent, but was prevented by other participants.^{[48][50]} He shouted to the organizers, demanding the list of all participants and Talent's manuscript.^[48]

The committee of the Calgary symposium informed the Vice Chancellor of Panjab University of the incident as well as associated issues with Gupta's research, but no action appeared to be taken.^[29] Despite the public exposition, only fossil experts at the symposium knew of the case, and Gupta continued to publish research papers.^[16]

Courier publication

The director of **Naturmuseum Senckenberg** in Frankfurt, Germany, had attended the Calgary symposium and asked Talent to allow publication of his presentation, who agreed.^[48] The account was published in the serial *Courier Forschungsinstitut Senckenberg* as a 50-page article "Silurian and Devonian of India, Nepal and Bhutan: Biostratigraphic and Paleobiogeographic Anomalies" in 1988. Pickett with Rajendra Kumar Goel and Arvind Kumar Jain of the University of Roorkee (now **IIT Roorkee**), India, co-authored the paper.^[51] The document exposed over a hundred fossil frauds in Gupta's research involving five books and 458 articles, published with 128 co-authors during 25 years.^[52] However, the *Courier* had a limited circulation and the article was not widely read.^[16]



Publications in *Nature* and *Science*

The case became global news when *Nature* invited Talent to publish a summary of the *Courier* article. In a three-page commentary, Talent provided reasons to suspect that Gupta's fossils were bought, stolen or received as gifts from various parts of the world, and not authentically collected from the Himalayan region,^[48] and that Gupta's research was a "quagmire of palaeontological disinformation."^[47] Published on 20 April 1989 issue, Talent's headline in *Nature* runs "The case of the peripatetic fossils",^[53] and the commentary concluded as follows:

Rhinos in Rio? Kangaroos in Kashmir? Well, something as remarkable biogeographically is said to have occurred. At first sight, it might appear that a whole circus of exotica – mainly invertebrates – was let loose and fossilized seriatim in the Palaeozoic and Mesozoic sequences of the Himalayas. Earth scientists in general, and palaeontologists in particular, have blissfully assumed that, apart from the [Piltdown Man](#), their science was largely free from attempts to pollute the literature. There have been cases of practical jokes, and examples of misappropriation of materials by individuals over-eager to publish. But compared with the cornucopia of items disgorged into the stratigraphy of the Himalayan region over the past 25 years, such instances are mere bagatelles.^[53]

It immediately prompted media investigations. The most influential was from *Science* as its news editor [Roger Lewin](#) made journalistic enquiry contacting the scientists involved. Lewin published his report on 21 April 1989, which included the following from Talent.

The database for the Silurian and Devonian of the Himalaya has become so extensively marred by error, inconsistency and implausibility as to throw grave doubts on the scientific validity of any conclusions that might be drawn from it. An appropriate way to approach this problem and clarify many of the questions raised would be through an independent fact-finding commission set up to probe most of the legions of paleontologically anomalous and suspect reports.^[16]

The story became widely known from *Nature* and *Science* articles, more so by a series of four *Nature* articles titled "the peripatetic fossils" between 1989 and 1990; a defence from Gupta,^[54] comments by Arun Deep Ahluwalia^[55] and John Bruce Waterhouse,^[56] and last by

Talent's summary.^[57] It was these reports that brought the case to an international level.^[28]

The fossils

Conodonts

The principal fossils of dispute were the conodonts.^[58] One of the first and most well-understood conodont fossils was from Amsdell Creek in New York, USA, which was determined as Devonian in age.^[59] With the help of English geologists [Frank H. T. Rhodes](#) and R. L. Austin, Gupta reported a discovery titled "Devonian Conodonts from Kashmir" in *Nature* in 1967,^[23] the first conodont report from India,^[60] and continued to discover several conodonts in and around Kashmir.^{[61][62]} According to Talent, it is "statistically beyond the bounds of possibility" that Devonian conodonts were present in the Himalayas, and that Gupta's specimens probably were those of the Amsdell Creek.^[63] Klapper also concurred, saying, "[It] is impossible to be 100% certain that the conodonts Gupta reports on come from New York and not the Himalayas as he claims, but I am as certain as I can be."^[16]

Gary D. Webster, Carl B. Rexroad and Talent published "An Evaluation of the V. J. Gupta conodont papers" in 1993 based on an investigation of 19 of Gupta's collaborators. They found that Gupta recycled his conodont reports in 15 publications.^[34]

Ammonoids

Talent was convinced that Gupta's ammonoid specimens originally came from a fossil site near Erfoud, Morocco. The characteristic features showed their identity. Talent had come across the same Moroccan ammonoids at the fossil shop in Paris and noticed that they exactly matched the images Gupta had used in his publications.^[63] He also discovered that Gupta had claimed the source of the conodonts and ammonoids as from the same rock strata, and such could not have been the case since the two groups of animals lived 15 million years apart.^[63] By May 1989, Gupta emphatically wrote Erben that the fossils were authentic of the Himalayas, to which Erben was inclined to make a statement in *Paläontologische Zeitschrift* defending his position, stating: "Whatever the truth in this highly detestable affair may be, my responsibility in the paper under discussion has been, and still is, restricted to its taxonomical



and morphological parts as well as to the illustrations."^[64]

Webster published "An evaluation of the V. J. Gupta echinoderm papers, 1971–1989" in 1991 and asserted that the observation "leaves no doubt that these fraudulent practices were knowingly continued over the past 25 years." He found 28 of Gupta's papers containing dubious information on the fossil discoveries.^[65]

Gupta's strategy

Gupta was careful in his research publications and would ask eminent scientists to collaborate. He would provide the fossils with the basic geological details and his collaborators made the fossil identification, so that they became "unsuspecting partners in crime," as Bhargava lamented,^[66] or unwitting "partners in the deception", according to Bangalore Puttaiya Radhakrishna, editor of the *Journal of the Geological Society of India*.^[67] As in the case of his first major publication in *Nature* in 1967, Gupta was able to convince Rhodes from the [University College of Swansea](#) (later president of [Cornell University](#)) and Austin from the [University of Southampton](#).^[23] Gary Webster at [Washington State University](#) had coauthored nine of Gupta's papers and asserted that his identification of the [crinoid](#) fossils was genuine, but later conceded that he was "virtually certain" they were obtained from places other than the Himalayas. He declared that Gupta "willfully tried to dupe the scientific community."^[63] By 1989, Gupta had collaborated with 128 scientists around the world, including Berry, Director of the University of California, Berkeley's Museum of Paleontology,^[68] Kiril J. Budurov of the Bulgarian Academy of Sciences,^[69] Michael E. Brookfield of the University of Guelph in Ontario,^[70] Erben,^[71] Gerhard R. Fuchs of the Geological Survey of Austria,^[72] Andrzej Gaździcki of the Polish Academy of Sciences,^[73] Janvier,^[74] Makoto Kato of Hokkaido University,^[75] Rhodes,^[76] Jovan Stöcklin from Zurich,^[77] Geneviève Termier of the University of Paris,^[78] Susan Turner of the University of Newcastle upon Tyne,^[79] Waterhouse of the University of Queensland,^[80] and Gary Dean Webster of the Washington State University.^[81] Gupta's most prolific foreign collaborator was Waterhouse who co-authored 19 research papers,^[52] followed by Webster with nine papers.^[63]

Gupta's intention to associate with notable scientists was manifest when he defended his works, writing

in *Nature* that it "is seldom possible to do fieldwork in the Himalayas by oneself" and gave a list of scientists he had teamed up with.^[54] He also stressed repeatedly that he sought experts from various countries to corroborate his findings.^{[54][82]} In his *Nature* commentary, he stated that the graptolites reported in his earliest works^{[1][2]} were substantiated by Sir [Cyril James Stubblefield](#), then director of the Geological Survey of Great Britain, and that the fossil site had been verified by his doctoral supervisor Shani in October 1964. Shani's companions and travel records indicated that he did visit Kashmir at the time but only to attend a scientific seminar. As Ashok Shani, son of Shani and colleague of Gupta, vouchsafed the alibi: "Sahni neither visited the graptolite localities nor did he accompany the post-seminar field excursion."^[83]

In another case, Gupta investigated the lower Phuchauki in Nepal with Vinod Singh Chhetri from the Department of Mines and Geology, Kathmandu, in 1974. He published four solo papers between 1975 and 1976 including three on conodont finds. In 1977, he published the geological study in *Chayanica Geologica* with Chhetri's name on it but without the latter's knowledge or consent.^{[84][85]} When Chhetri came to know of the publication, he requested Gupta for the data and fossil specimens so that he could confirm them; he never got a response.^[85] Gupta continued to report other fossils from different locations in Nepal, including a series of mammals from Gidhniya in western Nepal.^[86] Chhetri affirmed that Gupta never explored Nepal other than Phuchauki (not even the upper area, contrary to Gupta's report^[87]), and never collected any fossil of interest.^{[34][85]} To make the matter even more convoluted, Talent discovered from Ziegler that he had trained Gupta on conodont analysis at Marburg. Ziegler recalled Gupta having conodonts similar to those of Amsdell Creek, and asked why he was interested in the American fossils, the latter phlegmatically answered that they were from Nepal. That was a year before Gupta's Nepal exploration, in 1973.^[85]

One modus operandi of Gupta was that he kept the locations of the fossils vague so that it would be difficult for peers to vindicate or refute the reports.^{[9][12]} When other scientists investigated, they never found the exact location or the fossils in the area from where they were allegedly collected.^[88] Gupta had shrewdly justified that the Indian Government restricted the use of detailed topographic or army maps for political and



strategic reasons about the Himalayas,^[9] and the maps were especially restricted for foreigners.^[82] He once said: "As an Indian, I can't take such liberties [disclosing Himalayan maps to foreign scientists] and to go against the 'Law of the Land'."^[89]

Gupta was also an unapologetic plagiarist and thief. His 1966 thesis contained images of coral fossils from the 1908^[90] and 1912^[91] reports of [Frederick Richard Cower Reed](#), a British geologist who surveyed the Himalayas and Burma (now Myanmar). The same images from Reed were used in two of Gupta's papers published in the *Panjab University Research Bulletin*, in volumes 20 and 21. Gupta's coral fossils most likely came from the Amsdell Creek specimens maintained at the [Aberystwyth University](#) in Wales,^[92] where he had done research work in 1967.^[89] In 1992, researchers at Aberystwyth University intimated to *Nature* that Gupta's fossils were identical to those missing from their collection.^[93] One of Brock's observations was that Gupta had used fossil images in several instances from the reports of British geologists in the early 20th century: "And all that Gupta had done was take some scissors and cut out the specimens, put them down on a new plate with a new number on them and claim them as his own – and these were samples from somewhere very different, from parts of Somalia."^[47]

In a *Nature* commentary, Ahluwalia, Gupta's colleague and co-author in several papers,^{[94][95][96]} admitted that Talent's accusations were valid.^[97] He disclosed that once during the visit of their Bulgarian friend Budurov (whom Gupta later remarked as the "most callous" collaborator^[42]) to the Panjab University in 1980, Gupta planted conodont fossils in the limestone samples. As Budurov was about to examine the tiny fossils, Gupta insisted that he prepare fresh samples to let the fossils settle down in a solution. Ahluwalia recollected that he had not seen the fossils from that particular sample earlier, but as Gupta "prepared" it, numerous conodonts became visible. Ahluwalia did not suspect any misdeed at the time but in hindsight was "rather embarrassed at having initially missed the assemblage, but was happy at the 'discovery'."^[55] The three of them published the discovery in two articles in 1982.^{[94][96]} Following Talent's allegations, Ahluwalia later processed the original rock sample and could find no fossil at all. He also cited several instances of fossils collected and reported from sites that Gupta never explored.^[55]

Another colleague, Shashi Bhushan Bhatia recalled his suspicion when Gupta told him that the rock samples from Kurig were of Devonian, and gave Bhatia [ostracod](#) fossils that he claimed were from the same sediments. Bhatia saw two irregularities. One, his exploration of the same site gave a much younger geological age, [Permo-Carboniferous](#),^[9] and he could not recall a single instance of Gupta visiting Kurig. In another, as Gupta requested, Bhatia took the samples in 1972 to the [British Museum of Natural History in London](#). There, Bhatia analysed the specimens and found that they were the same as those from [Haragan Formation](#) in Oklahoma.^[98] Yet, in good faith, he, Jain and Gupta reported the discovery of the Himalayan ostracod in 1982.^[99] When the controversy broke out in 1989, Bhatia consulted Robert Folke Lundin at [Arizona State University](#), who confirmed that the Himalayan ostracods were the same as the American specimens,^[98] that he had described in 1968.^[100] On the same sediments, another collaborator, Udai K. Bassi of the [Geological Survey of India](#), later verified that Kurig does not contain Devonian deposits but only of a much younger [Carboniferous](#) sediment,^[101] and that the border and village records in which visitors are normally listed did not have any mention of Gupta visiting the site.^[9] In the same vein, Gupta and Erben reported in 1983 the occurrence of Carnian (298 to 272 million years old) conodonts and ammonoids from Khimokul La.^{[102][103]} Bassi, who had surveyed the area several times, attested that there is no Carnian sediment there and that the check-post register or the villagers had no record of Gupta, Erben or any foreigner.^[101]

Reactions

Talent expressed that Gupta "inundated geological and biogeographical literature of the Himalayas with a blizzard of disinformation so extensive as to render the literature almost useless."^[104] Gupta said to [The New York Times](#) that he had invited Talent to Panjab University and the Himalayan sites to verify the research findings following the Calgary incident,^[54] but that Talent had declined.^[63] In trying to undermine the accusations, he described the affair as "minor disagreements over taxonomy among experts."^[67] He defended himself by claiming Talent's allegations as "'malicious bias and professional jealousy" based on lies that were "building



up a story without any basis." He added, "We've had differences for the past 20 years, and he's trying to cash in on them." Talent admitted that he did reject Gupta's invitation to visit Panjab University as he felt it more appropriate for independent investigations from other scientists to make inspections.^[63]

In the *Science* report, Webster admitted having already had the information on the similarity between the Himalayan fossils and those in America and Europe, especially the crinoids which were found only in the United States. Commenting on Talent's Calgary speech, he conceded: "I am now virtually certain that most of these specimens did come from places other than the Himalayas. I certainly should have been more wary."^[16] Janvier also stated that he had asked Gupta to make a site expedition himself where the fossils were collected, to which Gupta replied that it was not possible due to political reasons. In his commentary "Breakdown of trust" in *Nature*, he decried the lack of awareness of scientific frauds and wrote: "The Gupta case may just be a 'big noise'."^[38]

Erben responded to Lewin's report claiming his innocence in *science* while admitting that Talent could be right, he blamed him for "zealous exaggerations" as Talent trusted a Paris shopkeeper rather than him. While avowing that he and Gupta were qualified scientists, he disparaged Talent as "without qualifications". He retorted: "However, while cogent evidence is, indeed, lacking, the circumstantial evidence assembled by Talent seems to be rather convincing."^[105] Talent replied, blaming Erben for ignoring or not being aware of a series of fossils Gupta produced and for trying to downplay the fraud allegations. He mentioned that the Moroccan-type ammonoids were available in large supplies not only in Paris but also in Sydney, Australia, which Erben could have investigated.^[106]

Writing in *Nature*, Gupta made a defensive response in September 1989. He upheld that most of his explorations were done with other researchers and that he was not alone in visiting the allegedly dubious sites. Referring to the Devonian fish which he described with Janvier in 1982, he asserted that he had never met Chang or visited her institute so that the specimen as a gift was an implausibility.^[54] However, he made a misinterpretation of Lewin's report which simply said that Chang had explained the availability of the fossils in

China and North Vietnam.^[16] He made a scathing remark:

John Talent has made sweeping pronouncements on Himalayan geology. Yet he is not an authority on the subject. I can only conclude that his attack on me was made for two reasons – to draw attention to himself and to deflect criticism of his failure to contribute to Himalayan geology.^[54]

A. K. Prasad, then director of Gupta's department at Panjab University, backed up Gupta, saying that Talent's accusation was "a conspiracy to denigrate a top Indian scientist".^[82] On the other hand, Ahluwalia affirmed that the fossils were recycled and assigned made-up localities, commenting that "most of the doubts expressed by Talent are well-founded" and that it was a "great embarrassment" that made him want to retract the published reports which he and Budurov co-authored.^[55] Expressing his dismay at revealing Gupta's manipulation of data and fabricated specimens in a report he co-authored about the discovery of a conodont, *Neogondolella regale*,^[107] Bassi considered withdrawal of the paper.^[101] The editor of *Nature* found Gupta's commentary unimpressive, noting that "close readings of the accusations and responses leaves the impression that Gupta's defence is flimsy."^[108]

The only collaborator to stand up for Gupta was Waterhouse. Calling Talent's accusation "A case of exaggeration",^[56] Waterhouse stated that Gupta's specimens were collected from the Himalayas.^[108] He asserted that the Himalayan research was reported with accurate locations, as he had verified the fossils and explored the fossil sites himself. He criticised Talent for never examining first-hand the actual fossils, and Ahluwalia for misrepresenting some of the reports. He defended Gupta by saying there could have been a bit of sloppy field and laboratory work^[15] but no fraudulent intention while admitting that Gupta's geological descriptions (stratigraphy) were "often too coarse and too rushed." Commenting in *Nature*, he wrote: "I can personally vouch that much of Gupta's materials emphatically came from the Himalayas... The 'case' against Gupta is remarkably rich in bold metaphors and unproven assertions, and somewhat thin in scientific analysis."^[56]



Panjab University issued a circular in 1990 that "it is interested not in brushing the controversy under the carpet, but arriving at the truth." It sought help from major authorities including the [University Grants Commission](#), the [Indian Council of Medical Research](#), [Indian National Science Academy](#), [Council of Scientific and Industrial Research](#), [Wadia Institute of Himalayan Geology](#), [Department of Science and Technology](#), and [Geological Survey of India](#).^[109] Then in March that year, the university took a controversial decision by instituting a scientific expedition team,^[108] to be led by Gupta. The [Geological Society of India](#) was disappointed by the proposal, as Radhakrishna remarked: "We fail to understand why Gupta should have been asked to lead the expedition. Besides, it is beyond our comprehension as to how allegations of recycling can be proved or disproved in the field."^[110]

The Geological Survey of India^{[111][b]} and the Society for Scientific Values (led by [Autar Singh Paintal](#)) independently organized a one-week expedition to the Himalayan fossil sites. Gupta refrained from the expedition due to "poor health".^[112] The investigators submitted their reports to Panjab University in December 1990. In February 1991, the university accepted the allegations and Gupta was momentarily suspended from service the next month.^[113] The report of the Society for Scientific Values was kept confidential.^[111] The Indian National Science Academy also conducted an independent investigation but failed to come up with a definitive conclusion.^{[114][115]}

Geological Society of India

The Geological Society of India, which claimed that it normally avoids controversial matters for publications in its *Journal of the Geological Society of India*, fearing that "the accusations [against Gupta] could be construed as quiescence" was obliged to publish two articles from Talent further damning the research malpractices of Gupta.^[67] In the first paper published in December 1989, Talent's team gave an elaborate account of fossil recycling and mismatching of the fossil sources.^[36] In the next article published in June 1990, details of Gupta's plagiarism were documented.^[37]

As Ian Anderson reported in *New Scientist*, the Geological Society of India made a "controversial move" by issuing an [expression of concern](#), stating that "the fossil finds of V J Gupta are not reliable", although they did

not formally retract any of Gupta's papers.^[116] The society reassessed Gupta's papers and found "several discrepancies lending support to the accusations levelled against V. J. Gupta" in 19 publications.^[88] The society's scientists visited seven localities in the Himalayas from where Gupta claimed to have collected Devonian fossils but found no such evidence,^[7] declaring "the falsification of facts attempted by Gupta."^[117] They requested Gupta for access to his specimen collections, research notes and laboratory register for verification, but never received any response.^{[111][118]} The report titled "The Himalayan Fossil Controversy" was issued on 1 January 1991, condemning Gupta's works as "fictitious and based on spurious fossils" and "incomplete bordering on disinformation."^{[88][111]} It ran the pronouncements:^[88]

- The most glaring deficiency noticed in nearly all the papers is the absence of precise locality information. Subsequent field checks by officers of the Geological Survey of India and some of Gupta's colleagues have failed to reveal not only the fossils but also rock formations stated to have been present in the area... He [Gupta] has failed to produce the originals of the recycled fossils with their registration number, date of collection, field description as entered in Field Note Books and Laboratory Registers and other pieces of evidence which could confirm the genuineness of his fossil collections.
- It is obvious from the volume of evidence that has now been collected that the fossil finds of V. J. Gupta are not reliable, that there are internal inconsistencies, and that the data is incomplete bordering on disinformation.
- The Society has no other alternative but to publish the evaluation report with the recommendation that *the incomplete and doubtful fossil records as published in the Journal and listed in the enclosed report be ignored till such time that independent proof is forthcoming of the in situ existence of the fossils* [emphasis in original].



Consequences

The Panjab University Vice Chancellor [Ram Prakash Bambah](#) issued Gupta's suspension order in February 1991.^[111] As [Triloki Nath Kapoor](#) soon replaced him, Gupta was reinstated in January 1992.^[119] That year, the University Grants Commission of India stopped its funding to Gupta,^{[120][121]} and *Nature* reported a note of disappointment over Gupta's reinstatement, calling it an "Indian rope trick".^{[93][122]} The resurgent controversy compelled Kapoor to a proper action.^[121] The affair was investigated in an official inquiry led by [Man Mohan Singh Gujral](#), the retired Chief Justice of the Sikkim High Court.^{[120][123]} The inquiry started in February 1992 and lasted two years with the final report submitted in April 1994. Gupta could not make any evidential rebuttal, resorting to lame pretexts such as claiming that he did not have a good memory of his field research and never kept field notes.^[121] The verdict found Gupta guilty of all charges including data recycling, plagiarism, concocting research locations and conning other scientists.^[7] Panjab University imposed three penalties on Gupta: (1) he was officially reprimanded; (1) he was debarred from administrative positions, his becoming a dean which was due that year was stayed;^[120] and (3) his annual increments of salary were ceased.^{[124][122]} In 1993, the UGC rescinded Gupta's department from the status of the Centre of Advanced Study in Palaeontology and Himalayan Geology.^[125]

Gupta's dismissal from the Panjab University was discussed by the Syndicate meeting on 30 June 1994, but no decision was made and the case was deferred to the Senate.^[7] The Senate meeting on 24 September made a majority decision, 50 out of 55, that Gupta was not to be discharged; only five were in favour of a dismissal.^[126] Gupta was however restricted from teaching palaeontology,^[123] and was assigned a course in environmental and groundwater geology.^[48] He was allowed to continue supervising research students.^[117] Pressured by the academic community and public outcries, the university once again brought back Gupta's expulsion case in 1996. When Gupta knew his case was coming up in a special meeting of the Senate to be held on 17 March, he submitted a letter of resignation for voluntary retirement on 1 March. He requested the cancellation of the Senate meeting. However, [Kocheril Raman Narayanan](#), then Vice President of India and Chancellor of the university, pushed for the

Senate meeting to uphold the integrity of the university. Learning of this insistence, Gupta reversed his resignation three days before the meeting and went to the Punjab and Haryana High Court seeking protection from the outcomes of the Senate meeting. The court made a notification to the university not to exercise further retribution on Gupta. Having no other option, the Senate decided to accept the resignation letter upon which Gupta took it to the court as he had already revoked that resignation. Gupta won the court case and continued his academic duties.^[124]

Gupta was still defiant of his research and called the whole ordeal a "conspiracy by foreigners."^[126] He wrote seven books on environmental geology.^{[127][128]} Receiving a full pension benefit, he retired (some sources say premature superannuation^[47]) in 2002.^{[104][129][c]} [Dhiraj Mohan Banerjee](#) of the Geological Survey of India condemned the university's ineptness in Gupta's continued service and superannuation saying that it "reflects the utter poverty of the Indian ethics."^[130]

Gupta gave death threats to Talent.^[60] Talent sarcastically revealed in an [ABC News](#) interview when asked if he was a hero: "Oh, I don't know about a hero. There were no particularly dire consequences, just a few death threats. The people who were hurt most were in India."^[48] One day, a Panjab University technical assistant who had been involved in preparing fossil photographs for Gupta announced that he had evidence of the sources of fossil frauds and was planning to reveal them. He was killed in a hit-and-run accident the following night in front of his residence.^{[60][47]} Gupta allegedly offered money to people to physically assault the co-authors of the *Courier* paper, Goel and Kumar, according to Talent. A few days later, the mother of one of them [not specified] was the victim of a hit-and-run accident, resulting in both legs and arms and several ribs broken.^[48]

Impact

Once recognized as "India's most celebrated fossil scientist",^[48] Gupta has been called "the greatest" and "most notorious paleontological fraudster"^[28] and "Houdini of the Himalayas."^[56] His forgery was often compared with the case of Piltdown Man, sometimes remarked as the greatest hoax in science.^{[52][131]} *Nature* announced Talent's observations with a statement



that it "will cast a longer shadow" than the Piltdown Man because of its elaborate publications involving numerous discoveries through a quarter of a century, fossils and scientists."^[132] The *Chicago Tribune* conveyed the news as "the most serious case of its kind since the Piltdown hoax."^[133] *The New York Times* further explained: "Unlike the case of Piltdown man, in which a single skull was passed off as a fossil of a prehistoric human, this one involves a much broader range of reported finds that have become a part of scientific literature."^[63] Talent described the meaning and consequences of Gupta's research as proving the most contradictory distribution of animals. Given the scale of fossils and the research publications, he described it as "[perhaps] the biggest paleontological fraud of all time."^[63] In 1994, *Down to Earth* reported it as the "greatest scientific fraud of the century."^[120] Tony Mayer of the *Nanyang Technological University* in Singapore stated that the affair "is possibly one of the most extensive instances of malpractice in the whole scientific record."^[123]

Gupta never faced criminal or ethical charges from the university or government authorities. There was an alleged cover-up of the saga by the government.^{[134][47]} None of Gupta's papers are retracted.^[135] Pushpa Mittra Bhargava, founder-director of the Centre for Cellular and Molecular Biology in Hyderabad, explained the reason for his resignation from India's largest scientific establishments including the Indian National Science Academy, *National Academy of Sciences*, *Indian Academy of Sciences*, and *Indian Social Sciences Academy*, citing Gupta's case: "Charges of fraudulent claims laid by him [Gupta] on the discovery of Himalayan fossils have been proved, but the only punishment he has been awarded is the stoppage of some of his increments. What is worse is that the person who exposed him is now being harassed and victimized instead of being made a hero."^[136]

Gujral's inquiry concluded that none of Gupta's co-authors were responsible for the misconduct. Ahluwalia who had openly supported Talent's allegations and blamed Gupta for misconduct in research with which he was linked, lived with trepidation of being ousted from his profession.^{[9][125]} He and three colleagues were threatened by the Panjab University to be punished for conspiracy.^[137] He was denied a chance of promotion in 1995^[138] and was rejected from the position of professor even after two personal interviews in 2003.^[139] The

Geological Society of India's secretary Srikantia made a press statement criticizing the Panjab University's decision in 1994 as "a mild censure which amounts to a blatant disregard of ethical values... [and] chosen to ignore all the scientific and legal opinions... [referring to Ahluwalia's case] no one with conscience will come forward to speak the truth and the scientific community will be anaesthetized."^[117] *Nature* commented on the failure of Panjab University in the case: "Chandigarh's indulgence of Gupta is a kind of rope trick in that it defies the admittedly unwritten laws that usually apply when people are accused of publishing fraudulent data."^[93] It subsequently reported that the university was "disgracefully lenient" on Gupta.^[122]

Vindhyan fossil controversy

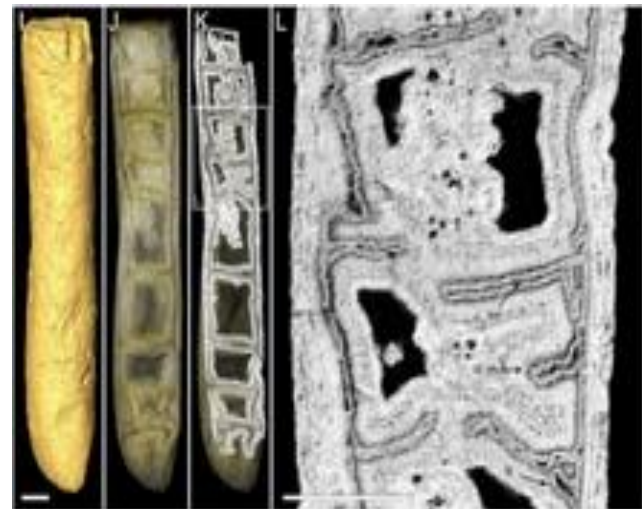


Figure 5 | *Rafatazamia chitrakootensis*. [Bengtson et al., 2017. CC-BY-SA 4.0]

Gupta's case had lingering effects on Indian palaeontology and the controversy was blamed as the reason "palaeontology lost prestige" in India^[104] and that it caused "irreparable damage to Indian science."^[140] Indian discoveries not only in geology but also in other science disciplines were seen with suspicion. India was perceived as "a leading nation in fraudulent scientific research."^[129] An example of such prejudice was the discovery of one of the oldest multicellular eukaryotes.^[141] The fossils were discovered in the *Vindhyan Mountains* in Central India by Rafat Jamal Azmi, of the Wadia Institute of Himalayan Geology in Dehradun, who reported in the *Journal of the Geological Society of India* in 1998.^[142] As Azmi announced the discovery



in *Science*,^[143] it was immediately received with scepticism. When renowned palaeontologists including Nicholas Butterfield, [Simon Conway Morris](#) and Soren Jensen (all at the [University of Cambridge](#)) examined the samples, they concluded that they were not fossils at all but artefacts.^[142] At the behest of the Geological Society of India, a team of palaeontologists from the Geological Survey of India, Wadia Institute of Himalayan Geology and Lucknow University, coordinated by Om Narain Bhargava, conducted an expedition in 1999 to verify the discovery.^[144] They found no evidence of Azmi's claims.^[145] In 2000, based on the report of the expeditionary team, the *Journal of the Geological Society of India* issued a concluding statement declaring "that the identification of fossils by R. J. Azmi is far from convincing and that more detailed work is necessary before the authenticity of the find is accepted."^[144]

The dispute became a persisting controversy until it was resolved in 2009 when Stefan Bengtson and his team at the [Swedish Museum of Natural History](#) in Stockholm published the full analysis of the case in the *Proceedings of the National Academy of Sciences of the United States of America*.^[146] Azmi's discovery became accepted as genuine.^[147] In a further vindication published in *PLoS Biology* in 2017, Bengtson's team established that the fossil was that of an alga, which they named *Rafatzamia chitrakootensis* (Figure 4) after the discoverer, and was estimated to be 1.6 billion years old,^[148] becoming the oldest known alga.^[149]

Policy and popular culture

In 1989, the [US House of Representatives](#) used the case as evidence of scientific fraud in its first hearing on its policy on "Maintaining the Integrity of Scientific Research".^[150]

In 1991, a 52-minute documentary of the hoax was presented by [Robyn Williams](#) in an [ABC TV](#) programme *The Professor's New Clothes*.^[151]

In 2000, a 24-minute podcast documentary was broadcast on 31 March by [BBC](#) in its programme "Science Friction" with the headline "Tampering with the Fossil Record".^[152]

In 2013, S. K. Shah of the Palaeontological Society of India published a book *Himalayan Fossil Fraud: A View from the Galleries*.^[66]

In 2021, the University Grants Commission of India used the affair as a case study in its policy titled *Academic Integrity and Research Quality*.^[153]

Additional information

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Competing interests

The author has no competing interests.

Ethics statement

Not applicable.

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None.

Footnote

1. ↑ Talent, aged 91, died on 27 March 2024 and this paper was under peer review.^[15]
2. ↑ Jayaraman mistook the Geological Survey of India for the Geological Society of India.
3. ↑ Sources, even from Talent, indicate the claimed retirement in 2004 may not be reliable, and not an "early" retirement.^{[47][48]}

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