Radhanath Sikdar :- The Unsung Hero of Everest.

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Abstract:-

The Unsung Hero of Mount Everest Radhanath Sikdar, a name often overshadowed by the grandeur of Mount Everest. He was a brilliant Indian mathematician who played a pivotal role in determining the height of the world's highest peak. He Born on October 5, 1813, in Calcutta, Bengal Presidency. Sikdar's contributions to the field of mathematics and geodesy were immense, yet his achievements remain largely unrecognized.

Radhanath Sikdar, an Indian mathematician and surveyor of immense significance, is celebrated for his pioneering work in the field of trigonometry and his pivotal role in determining the height of Mount Everest. His contributions to the Great Trigonometric Survey (GTS) not only established his name in the annals of scientific history but also underscored the brilliance and potential of Indian scholars in the 19th century.

Keywords :- Mount Everest, Determination, achievements, Recognize, Survey, Scientific.

Introduction:-

He Born in Jorasanko, Kolkata, on October 5, 1813, Radhanath Sikdar hailed from a humble Bengali family. His father, Tituram Sikdar, worked as a clerk. Mother name was Deviki Sikdar. His brother name was Srinath Sikdar. Young Radhanath displayed a remarkable aptitude for mathematics from an early age. His exceptional talent caught the attention of John Tytler, a professor of mathematics at the Hindu College (now Presidency University), who recognized his potential and provided him with crucial guidance and support. He Died on 17 May 1870 at the age of 56 Years at Gondal Para, Bengal.

In 1824, at the tender age of 11, Radhanath enrolled at Hindu College, where he excelled in mathematics and classica! languages. He was particularly fascinated by the works of Isaac Newton and Euclid, whose principles he mastered with remarkable ease. During his time at college, he also developed a keen interest in astronomy and trigonometry.

Great Trigonometric Survey

In 1831, George Everest, the Surveyor General of India, was in the pursuit of a mathematician who had specialised in Spherical Trigonometry, so that they could be a part of the Great Trigonometric Survey. In 1832, under the leadership of Everest, the longitudinal series of the "triangle" survey was completed from Sironj in Central India to Calcutta in Bengal.

While still working on mapping Calcutta, Bengal, Everest had begun his search for a mathematician, and soon enough, John Tytler, a professor of Mathematics at the Hindu College, now known as the Presidency College, recommended his 19-year-old pupil, Radhanath Sikdar.

Radhanath, a student of the college since 1824, was one of the first two Indians to read Isaac Newton's Principia and by 1832; he had studied Euclid's Elements, Thomas Jephson's Fluxion and Analytical Geometry and Astronomy by Windhouse. Taking inspiration from these prestigious papers, he devised a new method to draw a common tangent to two circles, when he was just a teenager. There was little doubt about Radhanath's proficiency in his subject, and he secured the job at the GTS on 19 December 1831 as a "computer" at a salary of thirty rupees per month.

Soon he was sent to Sironj near Dehradun. Even as seven other Bengali 'computers' worked alongside him, Radhanath soon showed his superior skills in mathematics and became Everest's favourite colleague. So much so, that he once stopped his transfer to another department. Radhanath's job was to carry geodetic surveys the study of the earth's geometric shape orientation in space and gravitational field. He did not just use the established methods but invented his own to accurately measure these factors.

George Everest retired in 1843 and was succeeded by Colonel Andrew Scott Waugh. Eight years later, in 1851, Radhanath was promoted to the position of Chief Computer and transferred to Calcutta. Here, he was also a superintendent for the Meteorological Department.

At the order of Colonel Waugh, Radhanath started measuring the height of mountains. The brilliant mathematician, who had perhaps never seen Mount Everest, discovered in 1852 that Kangchenjunga, which was considered to be the tallest in the world, wasn't really so. Compiling data about Mount Everest frorn six observations, he eventually came to the conclusion that it was the tallest in the world.

It was during the computations of the northeastern observations that Radhanath had calculated the height of Peak XV at exactly 29,000 ft (8839 m), but Waugh added an arbitrary two feet because he was afraid that the Sikdar's figure would be considered a rounded number rather than an accurate one. He officially announced this finding in March 1856, and this remained the height of Mount Everest till an Indian survey re-calculated it to be 29,029 ft or 8848 m in 1955.

Technological advancements, data from the thousands of climbers, and the discovery of different routes to the summit all have led to a more accurate calculation of the height of Mount Everest-a peak that grows at the rate of 4 mm every year and whose summit is slowly moving northeastwards each passing year.

Others Contribution :-

It appears that while Everest and Waugh both extolled him for his exceptional mathematical abilities, his relations with the colonial administration were far from cordial. Two specific instances are on record.

In 1851 a Survey Manual was published by the Survey Department. The preface to the Manual mentions that the more technical and mathematical chapters of the Manual were written by Babu Radhanath Sikdar. The Manual proved to be immensely useful to surveyors. However, the third edition, published in 1875 did not contain that preface, so that Sikdar's memorable contribution was de-recognized. The incident was condemned by a section of British surveyors. The paper Friend of India in 1876 called it robbery of the dead.

It is also on record that Sikdar was fined a sum of 200 rupees in 1843 for having vehemently protested against the unlawful exploitation of survey department workers by the Magistrate Vansittart. The incident was reported in detail in The Bengal Spectator edited by Ramgopal Ghosh. In 1854, Sikdar along with his Derozian friend Peary Chand Mitra started the Bengali journal Masik Patrika, for education and empowerment of women. He used to write in a simple and uncluttered style that was rather atypical for the age. Sikdar had retired from service in 1862, and was later appointed as teacher of mathematics at the General Assembly's Institution .

The GTS was a massive undertaking aimed at mapping the Indian subcontinent with unprecedented accuracy. Sikdar, as a young and enthusiastic mathematician, quickly rose through the ranks, becoming a key member of the survey team. His meticulous calculations and innovative methods were instrumental in the progress of the project.

The Discovery of Peak XV:-

In 1852, while analyzing the data collected by the GTS, Sikdar made a groundbreaking discovery. He identified a peak in the Himalayas, designated as Peak XV, and through complex calculations, determined that it was the highest point on Earth. This peak would later be named Mount Everest in honor of George Everest.

Sikdar's Role in Determining the Height:-

Sikdar's role in determining the height of Mount Everest was crucial. He employed advanced trigonometric techniques and meticulous data analysis to arrive at the accurate measurement. His calculations were based on the principle of triangulation, which involved measuring angles and distances between various points to determine the height of a distant object.

The Significance of Sikdar's Achievement:-

Sikdar's discovery was a significant milestone in the history of geography and exploration. It not only established the exact height of the world's highest peak but also provided valuable insights into the topography of the Himalayas. His work contributed to a better understanding of the Earth's surface and paved the way for future scientific explorations.

Beyond Everest: Sikdar's Other Contributions:-

Sikdar's contributions to the field of mathematics and geodesy extended beyond his work on Mount Everest. He was a prolific researcher and published numerous papers on various topics, including trigonometry, astronomy, and meteorology. He also developed innovative methods for solving complex mathematical problems and made significant advancements in the field of surveying. Legacy and RecognitionDespite his immense contributions, Radhanath Sikdar's achievements have often been overshadowed by the fame of Mount Everest itself. However, in recent years, there has been a growing recognition of his role in the discovery of the world's highest peak. Efforts are being made to highlight his contributions and ensure that his legacy is preserved for future generations.

Recognition and Legacy:-

Radhanath Sikdar's contributions to the GTS and his pioneering work in mathematics and surveying earned him widespread recognition and respect. He was awarded the title of "Moonshee" by the British government and was appointed as the Superintendent of the Trigonometrical Survey of Bengal. He also served as a professor of mathematics at the Hindu College for many years.In 1870, at the age of 56, Radhanath Sikdar passed away, leaving behind a rich legacy of Science.

Conclusion:-

Radhanath Sikdar was a brilliant mathematician and a true pioneer in the field of geodesy. His work on Mount Everest and his other contributions to science have left an enduring legacy. It is essential to acknowledge his significant role in the history of exploration and to celebrate his achievements. By recognizing the contributions of individuals like Sikdar, we can inspire future generations to pursue scientific excellence and make groundbreaking discoveries.

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