



OPEN ACCESS INTERNATIONAL JOURNAL OF SCIENCE & ENGINEERING

Multidisciplinary Category Journal

INDIA'S SAVIOUR: THE GREAT HIMALAYAS

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ABSTRACT: The Great Himalayas or Greater Himalayas is the maximum mountain range of the Himalayan right of the window, part of the Alpine Belt. This range is isolated from the Trans Himalayan mountain range by the duty of the Main Central Thrust, which lies to the north. The collection comprises Pakistan, China, India, Nepal, and Tibet. In this study, we 're finding about the great geographical Himalayas and that it's advantageous to India. The highest peak in the world, Mount Everest, and other "near-highest" peaks K2, Kangchenjunga, Lhotse, Nanga Parbat, etc. are part of the Greater Himalayas. The complete west to east range of the great Himalayas is 2400 km (1500 miles) and has an average elevation of 6000 m (20000 ft.). They are home to several glaciers, such as the Gangotri Glacier, the Satopanth Glacier, etc.

Keywords: Himalayas, Plateau, India, Mountains, Climate, Rivers, glaciers, Geography, etc.

I INTRODUCTION

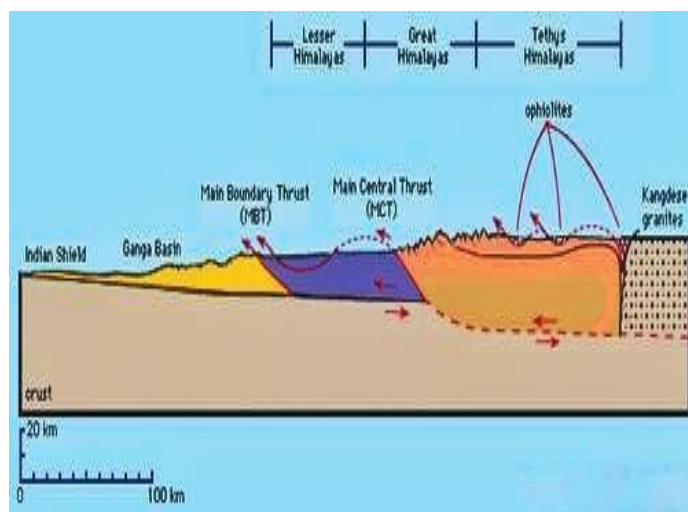
The great Himalayan mountain range of Asia is a barricade between the Tibet Plateau to the north and the alluvial plains of the Indian subcontinent to the south. The Himalayas are the highest mountains in the world, with more than 110 peaks rising to 24,000 feet (7,300 m) or more above sea level. Another of these peaks is Mount Everest, the highest in the world, with a level of 29,035 feet (8,850 meters). For thousands of years, the Himalayas had a huge meaning for the cultures of South Asia, representing their literature, mythologies and religions. Since ancient times, the enormous glacial heights have drawn the attention of the pilgrim mountaineers of India, who coined the Sanskrit term Himalaya from hima ("snow") and alaya ("abode") to the great mountain chain. In modern times the Himalayas have given mountaineers all over the world the greatest attraction and challenge. The mountains, which form the northern frontier of the Indian subcontinent and an almost impassable barrier between it and the lands of the north, are part of a large mountain chain that spreads halfway around the world from North Africa to the Pacific Ocean coast of South East Asia. The Himalayas themselves extend for around 1,550 miles (2,500 km) from west to east between Nanga Parbat 26,660 feet (8,126 metres) in the Pakistani-run Kashmir zone

and Namjagbarwa (Namcha Barwa) Peak 25,445 feet (7,756 metres) in the Tibet self-government area of China. The two countries of the Himalayas, Nepal and Bhutan, sit between the western and eastern extremities. The Himalayas are bordered to the northwest by the Hindu Kush and Karakoram Mountain Ranges, and to the north by the high and vast Tibetan Plateau. The range of the Himalayas, from south to north, is between 125 and 250 miles (200 and 400 km). The total area is nearly 230,000 square miles (595,000 square kilometres). While India, Nepal, and Bhutan are in control over much of the Himalayas, Pakistan and China are also occupying parts of them. In the disputed Kashmir zone, Pakistan has the organizational control of some 32,400 square miles (83,900 square kilometres) of the northern and western ranges of the control line (LOC) formed between India and Pakistan in 1972. China operates about 14,000 square miles (36,000 square kilometres) in the Ladakh district of Kashmir and has landed in the Indian state of Arunachal Pradesh on the eastern end of the Himalayas.

II GEOLOGIC HISTORY

Over the last 65 million years, strong global plate-tectonic forces have pushed the Earth's crust to form the Eurasian mountain ranges including the Himalayas that extend from the Alps to the mountains of South East Asia. Throughout the

Jurassic period (about 201 to 145 million years ago), deep crustless the Tethys Ocean surrounded the southern edge of Eurasia, not including the Arabian Peninsula and the Indian subcontinent. About 180 million years ago, the former Gondwana (or Gondwanaland) supercontinent started to break up. Some of Gondwana's parts, the lithosphere plate that covered the Indian subcontinent, endured a northward crash to the Eurasian Plate during the ensuing 130 to 140 million years. The Indian-Australian Plate slowly limited the Tethys trench inside a giant pincer between it and the Eurasian Plate. As the Tethys trench narrowed, rising compressive forces bent the layers of rock beneath it, producing interlacing faults in its marine sediment. The plate containing India was sheared down, or weakened, underneath the Tethys trench at an ever-increasing level.



Over the next 30 million years, the low parts of the Tethys Ocean slowly drained as its sea floor was forced up by the plunging Indian-Australian Plateau; the action created the Tibet Plateau.

On the southern edge of the plateau, the marginal mountains the Trans-Himalayan ranges of today became the first major watershed in the area and rose high enough to become a climatic barricade. To the south, the northern reaches of the Arabian Sea and the Bay of Bengal were soon filled with the remnants of the ancient Indus, Ganges (Ganga) and Brahmaputra rivers. Widespread wear and deposition continue even now, as these rivers carry huge amounts of material every day.

At last, some 20 million years ago, during the early Miocene epoch, the tempo of the crunch between the two plates was sharply enlarged, and the Himalayan mountain building began to be serious. As the Indian sub-continental plate continued to force under the former Tethys trench, the topmost layers of old Gondwana metamorphic rocks peeled back over them for a long horizontal distance to the south, forming napes. Wave after wave of napes poured south over

the Indian landmass for up to 60 miles (about 100 km). Every new nape consisted of Gondwana rocks which were older than the last. In time, those napes were folded, and the former trench was about 250 to 500 horizontal miles (400 to 800 km). All the while, down the rivers, they followed the pace of uplifting, shifting vast amounts of eroded artifacts from the rising Himalayas to the plains where the Indus, Ganges and Brahmaputra rivers were deposited. The weight of the deposit shaped depression, which could hold more sediment. In some areas, the alluvium below the Indo-Gangetic Plain is now more than 25,000 feet (7,600 meters) thick.

Possibly only in the past 600,000 years, during the Pleistocene epoch (about 2,600,000 to 11,700 years ago), did the Himalayas become the highest mountains on Earth. If the strong horizontal thrust characterizes the Miocene and the subsequent Pliocene epoch (around 23 to 2.6 million years ago), the Pleistocene is epitomized by an extreme lift. On a few peaks, such as Mount Everest, the crystalline rocks approved the old fossil-bearing Tethys sediments from the north to the summit.

Once all the Great Himalayas had risen high sufficiently, they were transformed into a climatic barricade: the marginal mountains to the north were depressed by rain, and became as parched as the Tibet Plateau. On the wet south side, however, the rivers rose with such erosional force that they needed the crest line to move gradually northward. Altogether, the great transverse rivers that broke the Himalayas continued to slow down with the boost. Landscape changes, however, forced all but those major rivers to redirect their lower courses, because, as the northern crests rose, so did the southern edges of the vast naps. Now exempt from flow due south, most of the smaller rivers flowed east or west through structural weakness in the midlands until they could break through the new southern barricade or enter a major violent flood.

Objective: To find out about The Great Himalaya how it is beneficial for Indian scenario and giving fertility to Indian region in most of the time with great dignity.

III RESEARCH METHODOLOGY

The present study is explanatory cum descriptive in nature. It depends on secondary data, gathered from different journals, sites, books and online articles.

Hydrology:

In spite of their size, the Himalayas do not form a major turning point, and a number of rivers cut across the range, especially in the eastern part of the range. As a result, the main edge of the Himalayas is not clearly defined, and the mountain passes are not as significant as the other mountain ranges. The rivers of the Himalayas flow into two main river systems:

- ★ Merge the western rivers into the Indus Basin. The Indus itself is the northern and western frontier of the Himalayas. It starts in Tibet at the union of the Sige and Gar Rivers, and flows north-west through India to Pakistan before turning south-west to the Arabian Sea. It is fed by several major tributaries on the southern slopes of the Himalayas, including the rivers Jhelum, Chenab, Ravi, Beas and Sutlej and the five rivers of the Punjab.
- ★ Some other Rivers of the Himalayas divert the Ganges-Brahmaputra Delta. Its main rivers are the Ganges, the Brahmaputra, the Yamuna, as well as other tributaries. The Brahmaputra originally comes as the Yarlung Tsangpo River in western Tibet, and flows east through Tibet and west through steppes of Assam. Ganges and Brahmaputra meet in Bangladesh and flow into the Bay of Bengal through the largest river delta in the world, the Sunderbans.

The northern slopes of Gyala Peri and the mountain ahead of Tsangpo, also included in the Himalayas, divert into the Irrawaddy River, which originates in eastern Tibet and circulates south through Myanmar to the Andaman Sea. The Salween, Mekong, Yangtze and Yellow Rivers all make up parts of the Tibetan Plateau, which are geologically distinct from the Himalayan Mountains and are therefore not calculated by the actual Himalayan Rivers.

Glaciers:

The great mountains of Central Asia, such as the Himalayas, are home to the world's third-largest ice and snow after Antarctica and the Arctic. The Himalayan range comprises some 15,000 glaciers, that store some 12,000 km³ (2,900 cu mi) of fresh water. Its reservoirs include the Gangotri and Yamunotri (Uttarakhand) as well as the Khumbu glaciers (Mount Everest region), the Langtang Glacier (Langtang region) and the Zemu Glacier (Sikkim).

Thanks to the altitude of the mountains near the tropics of cancer and Capricorn, the continuous arctic circle is one of the world's highest, usually about 5,500 m (18,000 ft). At the other side, the equatorial mountains in New Guinea, Rwenzori's and Colombia have a snow line about 900 m (2,950 ft) lower. The higher regions of the Himalayas are snow-bound during the year, given their proximity to the tropics, and they contain the sources of several large perennial rivers.

In recent years, scientists have observed a large rise in the rate of glacier recoil across the area as a result of climate change. For example, glacial lakes have been rapidly developing on the surface of debris-covered glaciers in the Bhutan Himalayas over the last few decades. Although the result will not be known for many years, it could potentially

be a disaster for hundreds of millions of people who rely on glaciers to feed their rivers during dry seasons.

Lakes

There are dozens of lakes in the Himalayan region. Most of the bigger lakes are situated on the north side of the main range. This included the sacred freshwater lake Manasarovar, near Mount Kailas, with an area of 420 km² (160 sq mi) and an altitude of 4,590 m (15,060 ft). It flows into the nearby Rakshastal Lake with an area of 250 km² (97 sq mi) and a little lower at 4,575 m (15,010 ft). Pangong Tso, which is growing across the border for both India and China, at the far northwest corner of Tibet, but also Yamdrok Tso, city in south core Tibet, are one of the highest with a particle size of 700 km² (270 sq mi) and 638 km² (246 sq mi) respectively. Lake Puma Yumco is one of the largest of the larger lakes at 5,030 m (16,500 ft) altitude.

The lakes are smaller in the south of the current series. Lake Tilicho in Nepal in the Annapurna massif is one of the largest lakes in the country. Other notable lakes involve Rara Lake in western Nepal, She-Phoksundo Lake in the Shey Phoksundo National Park of Nepal, Gurudongmar Lake in northern Sikkim, Gokyo Lakes in the Solukhumbu district of Nepal and Tsongmo Lake, near the Indo-China border in Sikkim.

Several of the lakes display the danger of a glacial lake being flooded. The Tsho Rolpa glacier lake in the Rowaling Valley, in the Dolakha district of Nepal, is considered the most dangerous. The lake, which is situated at an altitude of 4,580 m (15,030 ft), has grown considerably over the last 50 years due to glacial melting. Mountain lakes are classified as tarns to geographers because they are induced by glacial activity. Tarns are located mostly in the global wellness of the Himalayas, above 5,500 m (18,000 ft).

Temperate Himalayan wetlands are an important habitat and layout for migratory birds. Most mid-and low-lying lakes remain poorly studied in terms of their hydrology and biodiversity, such as Khecheopalri in the Sikkim Eastern Himalayas.

Climate:

The Himalayas, as a great climatic divide that moves large air and water systems, help to determine the meteorological situation in the Indian subcontinent to the south and in the Central Asian mountains to the north. Due to its good location and impressive height, the Great Himalayan range obstructs the passage of cold mainland air from the north to India in winter, and causes the southwestern monsoon (rain-bearing) winds to give it up most of their rainfall before moving the range northward. The consequence is heavy rainfall (both rain and snow) on the Indian side, but dry conditions in Tibet. The average annual rainfall on the south slopes ranges from 60 inches (1,530 mm) to Shimla, Himachal Pradesh, and

Mussoorie, Uttarakhand, in the Himalayan region, and 120 inches (3,050 mm) to Darjeeling, West Bengal, in the eastern Himalayas. North of the Great Himalayas, there are only 3 to 6 inches (75 to 150 mm) of rainfall in areas such as Skardu, Gilgit and Leh in the Kashmir region of the Indus Valley.

Local relief and location address climatic variability not only in different parts of the Himalayas, but also on different slopes of the same range. Due to its good location mostly on top of the Mussoorie range facing the Dehra Dun, the city of Mussoorie, for example, at an altitude of around 6,100 feet (1,900 meters), gets 92 inches (2,335 mm) of rainfall per year compared to 62 inches (1,575 mm) in the town of Shimla, which exists some 90 miles (145 km) to the northwest under a sequence of ridges reaching 6,600 feet (2,000 meters). The Eastern Himalayas, which are at a lower latitude than the western Himalayas, are comparatively hot. The average minimum temperature for the month of May, reported in Darjeeling at an altitude of 6,380 feet (1,945 metres), is 52 ° F (11 ° C). In the same month, at an altitude of 16,500 feet (5,000 meters) in the locality of Mount Everest, the temperature is about 17 ° F (-8 ° C); at 19,500 feet (6,000 meters) it drops to -8 ° F (-22 ° C), the lowest minimum being -21 ° F (-29 ° C); during the day, in areas protected from strong winds that often blow at more than 100 miles (160 km) per hour, the sun is often dry, even a warm one.

There are two periods of moderate rainfall caused by the winter storms and the heavy summer rains, with the south-westerly winds of the monsoon. During the winter, low-pressure weather systems travel from the west to the Himalayas and bring heavy snowfall. Across areas where western turbulence is felt, condensation occurs in the upper air and, as a result, rainfall is much higher in the high mountains. During that season, snow accumulates around the high peaks of the Himalayas, and rainfall is higher in the west than in the east. In January, for example, Mussoorie received almost three inches (75 mm) in the west, while Darjeeling received less than one inch (25 mm) in the east. By the end of May the weather conditions had changed. South-westerly monsoon currents funnel moist air to the eastern Himalayas, where the wetness rising over steep terrain cools and condenses to fall like rain or snow; in June, thus, Darjeeling receives about 24 inches (600 mm) and Mussoorie less than 8 inches (200 mm). The rain and snow stopped in September, after which the premium conditions in the Himalayas continued until the end of winter in December.

III THE HIMALAYAN PRIVILEGES TO INDIA:

The Himalayas are India's most prominent natural characteristics. Every other mountain range anywhere else in the world has influenced people's lives and shaped the destiny of a nation like the Himalayas in India. The Himalayas are the body and soul of the Indians. To a very special way, the

Himalayas are the largest mountain range of India. The following few points will show the significance of a Himalayan Mountains for India.

- ★ **Weather influence:** the Himalayas play a very important role in the climate of India. Due to their high altitude, duration and direction, summer monsoons originate from the Bay of Bengal and the Arabian Sea and cause rain or snow to precipitate.
- ★ **Défense:** Since the early days, the Himalayas have shielded India from outside attackers, thereby acting as a defensive barrier. Yet the Chinese aggression against India in October 1962 reduced the defences consequences of the Himalayas to a significant degree, given the development of modern warfare technology; the Défense importance of the Himalayas cannot be fully ignored.
- ★ **Origin of rivers:** Nearly all the great rivers of India have their origins in the Himalayas. Abundant rainfall and huge snowfields, as well as large glaciers, are the feeding grounds of the mighty rivers of India. Snow falls provide these rivers with water in the summer, and during the dry season, and these are seasonal rivers. The Himalayan Rivers, along with hundreds of their tributaries, form the very basis of life in the whole of northern India.
- ★ **Fertile soil:** the great rivers and their branch bear large quantities of alluvium when descending from the Himalayas. This is a rich soil deposit in the Great Plain of North India, making the plain one of the most fertile lands in the world. It was expected that the Ganga and the Indus would hold 19 and 10 lakh tones of silt each day in that order, and that the silt borne by the Brahmaputra would be even more so. It is also said, therefore, that the great plain of northern India is the Gift of the Himalayas.
- ★ **Tourism:** due to its scenic beauty and a safe climate, a large number of tourist spots have been established in the Himalayas. The hilly areas of the Himalayas offer a cool and comfortable climate when the surrounding plains reeling under the boiling heat of the summer season.
- ★ **Minerals:** the region of the Himalayas contains many precious minerals. In the tertiary minerals, there are large potentialities of mineral oil. Coal has been discovered in Kashmir. Copper, lead, zinc, nickel, cobalt, antimony, tungsten, gold, silver, granite, semi-precious and precious stones, gypsum and magnetite are known to occur in more than 100 locations in the Himalayas.
- ★ **Agriculture:** The Himalayas do not offer vast flat land for agriculture, but some of the slopes are terraced for cultivation. Rice is the dominant crop on

the hillsides. Certain crops include wheat, corn, potatoes, tobacco and ginger. Tea is a unique crop that can only be grown on hillsides. A wide variety of fruits such as apples, pears, grapes, mulberries, walnuts, cherries, peaches, apricots, etc.

IV CONCLUSION:

Study shows the Himalayas are shielding our nation from the cold and dry winds of Central Asia. It also prevents rain-filled monsoon winds from moving through the Indian Ocean to northern countries and induces heavy rainfall in northern India. Almost all the great rivers of India have their source in the Himalayas. Abundant rainfall and huge snowfields, as well as wide glaciers, are the feeding grounds of the mighty Indian rivers. All the beautiful hill stations in northern India, such as Srinagar, Pahalgam, Gulmarg, Shimla, Kulu, Manali, Dharamshala, Dehradun and Nainital, are situated in the Himalayas. Thousands of visitors are coming to these hill stations. Many valuable herbs that are used as medicines develop on the slopes of the Himalayas. The Himalayan forests provide kindling and a wide range of raw resources for forest-based industries. The Himalayan forests provides sanctuary for several types of wild animals and birds.

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