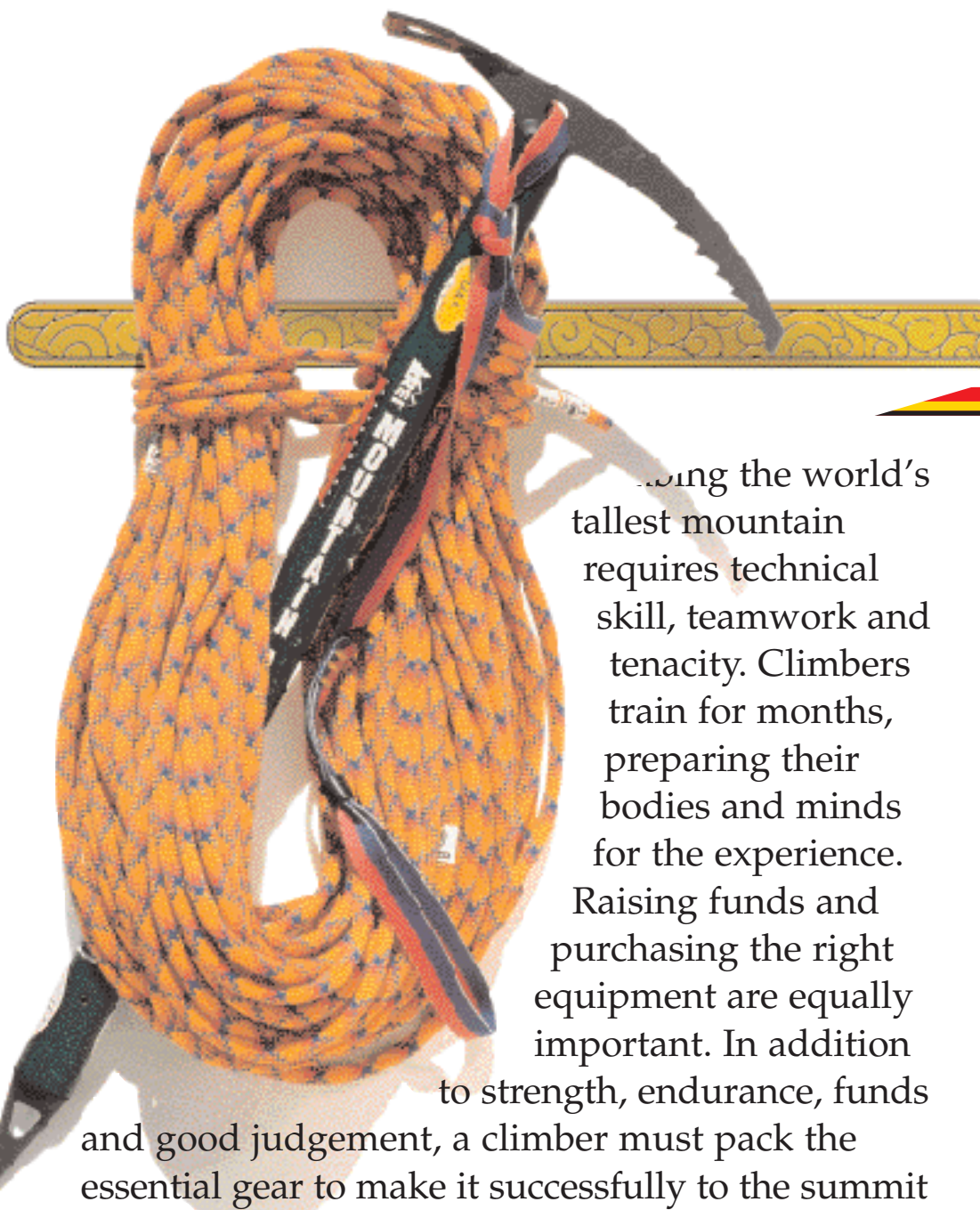


EVEREST On Top of the World

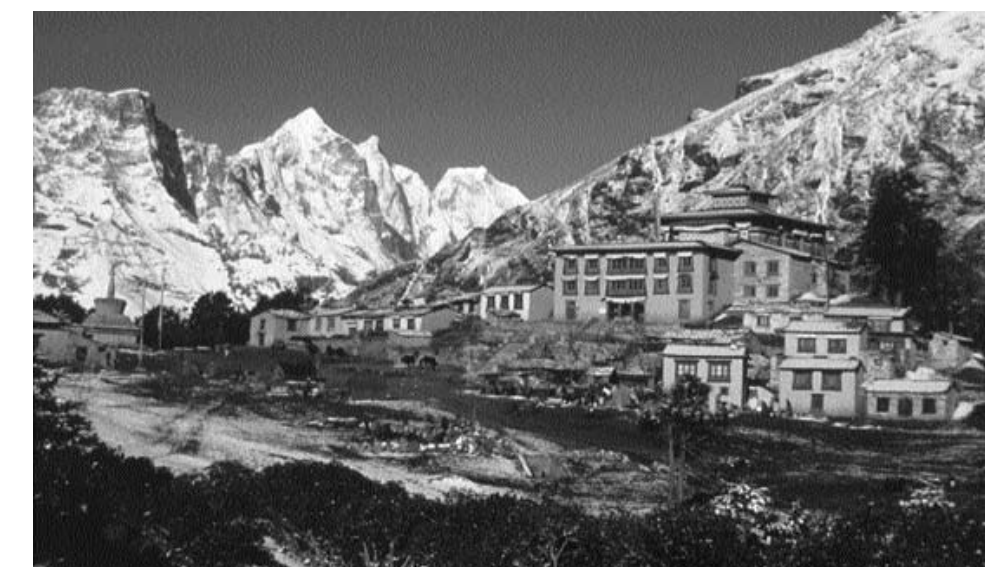
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Conquering the world's tallest mountain requires technical skill, teamwork and tenacity. Climbers train for months, preparing their bodies and minds for the experience. Raising funds and purchasing the right equipment are equally important. In addition to strength, endurance, funds and good judgement, a climber must pack the essential gear to make it successfully to the summit of Mount Everest.

The Himalayan range, of which Mount Everest is a part, was formed about fifty million years ago when the continents of India and Asia collided. As India slid under Asia, the sea bed that laid between them was pushed up by the force of the collision and continued to be forced upward. As a result, marine fossils have been found high up on the mountain. Ultimately this collision formed the Himalayan range which covers a 1500 mile (2,412 km) arc across northern India and Nepal. Scientists estimate that Everest is still moving skyward almost one quarter inch (5 mm) a year.

The altitude in the village Lukla, where climbers begin their trek to Mount Everest, is about 9,000 feet (1220 m). The temperature will drop 3.5 degrees Fahrenheit (1.7 degrees Celsius) for every 1,000 feet (305 m) altitude climbed.



The Tengboche Monastery is the center of Sherpa spiritual activity in the Khumbu region of Nepal. All Sherpas, and most climbers, stop here to receive a blessing from the Head Lama. He is referred to as Rimpoche, meaning "precious one."

There is one third as much oxygen at the summit as there is at sea level. Because of the lack of oxygen at high altitude, climbers experience hypoxia which causes some or all of the following symptoms:

- Extreme fatigue
- Blurred vision
- Memory loss
- Hallucinations
- Headaches
- High altitude cough (severe enough to break ribs)
- Reduction in sense of smell and taste
- Increased pulse rate
- Slowed reaction time
- Increased breathing rate
- Difficulty solving problems
- Nausea

There are also illnesses caused by the lack of oxygen at high altitudes that can threaten a climber's life during an expedition. These include:

- High Altitude Pulmonary Edema (HAPE) where the lungs fill with fluid.
- High Altitude Cerebral Edema (HACE) where the brain swells inside the skull.

To avoid these problems, climbers must acclimatize by ascending the route at a carefully controlled rate.

The Sherpas are Buddhist mountain people who migrated from Tibet to Nepal some 5 centuries ago. Today there are 35,000 Sherpas in Nepal, a country the size of Florida. Everest climbers often employ Sherpas to guide and carry supplies. Climbers learn about many Sherpa beliefs and religious artifacts along the way, including:

■ **Prayer flags** are square or long narrow pieces of cloth with Buddhist scriptures, mantras and symbols of deities printed on them from inked wood blocks. Sherpas believe that as the flags flap in the wind their prayers are carried to heaven and all around the world.



■ **Prayer wheels** are spun in a clockwise direction by Buddhists who believe that each revolution sends their prayers to heaven.



■ **Mani walls** are carved religious tablets piled together. Buddhist belief dictates that travelers pass these walls on the left.

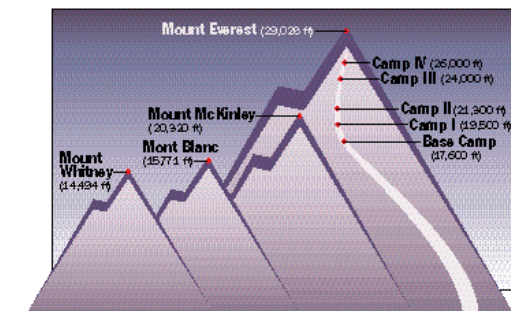
Sherpas call Mt. Everest "Chomolungma" which translates as "Mother Goddess of the World."

Seasons in the Himalaya:

- **WINTER: October to February**— heavy winds blow the snow clear off the mountain top.
- **SUMMER: March to June.** There is a mere three weeks in May when conditions are optimal for climbing.
- **MONSOON SEASON: June to September** is monsoon season which brings heavy snow to the mountain. Snow and winds make climbing during this season dangerous.

The jet stream is a high speed wind current that blows at speeds up to 250 miles (400 km) per hour from west to east around the planet between 25,000 and 40,000 feet (7,622 – 12,195 m) above sea level. It shifts seasonally, affecting the monsoon in Asia and bringing snow to Mount Everest in summer.

Of the animals that inhabit the Himalaya, yaks are useful for their milk, butter and hides. These animals, used to carry supplies and equipment, have trouble in low altitudes, and cannot go below 6,000 feet (1,829 m) without getting sick. Other animals in the region include ravens, musk deer, and snow leopards.



Mount Whitney, the highest point in the continental United States is 14,494 feet (4,418 m) tall. You are not even at Everest Base Camp at that altitude.

Everest climbers use a variety of equipment as they progress up the route to the summit.

- **Basic layer worn at all times**
Long underwear and socks.
- **Daytime Base Camp clothes**
Pants, hiking boots and pile jacket.
- **Evening Base Camp clothes**
Add a down jacket, light hat and light gloves.
- **Icefall to Camp III**
Wind pants, double boots, wool hat, gloves, harness, crampons, gaiters, glacier glasses, ice axe and storm jacket.
- **Camp IV**
Down suit, glacier glasses, heavy gloves, face mask, oxygen bottle, mask and regulator, and radio.
- **Summit**
Add overboots, ski goggles.



- 1 **Khumbu Icefall** The Icefall, actually a moving glacier, consists of very unstable blocks of ice. Climbers set ropes or ladders between the blocks to get across. These blocks, often the size of apartment buildings, shift daily so that new routes must often be established.
- 2 **Western Cwm (koom)** In the Western Cwm (Welsh word for valley), temperatures are cold, yet the strength of the sun can be extraordinarily warm.
- 3 **Lhotse Face** The Lhotse Face is a steep sheet of ice that the climbers ascend from 22,000 to 25,000 feet (6,707 – 7,621 m). Above this, climbers enter what is known as the "Death Zone." Lhotse is a mountain located next to Everest. It is 27,890 feet (8,501 m) high and is the fourth tallest mountain in the world.
- 4 **South Col** The South Col is a plateau of ice and wind-swept boulders. Rectangular in shape, it is about four football fields long by two across. There is a 7,000 foot (2,134 m) drop on one side and a 4,000 foot (1,219 m) drop on the other. It takes 8-12 hours to leave Camp Four, reach the Summit and return.

In severely cold weather, bodies need oxygen to keep warm and fluids to keep hydrated. Hypoxia and dehydration make climbers susceptible to frostbite—the irreversible death of tissue caused by prolonged exposure to severe cold. To avoid it climbers must:

- Force themselves to eat and drink lots of water and pay attention to the increased need for calories to maintain body temperature.
- Wear appropriate clothing.
- Use good judgement when climbing the mountain and know when to turn around.



Pop Quiz

- 1 If it is 60 degrees Fahrenheit (17.7 degrees Celsius) in Kathmandu (5,000 ft.), what would the temperature be on the summit of Mount Everest, assuming that there is no wind-chill? (Strong winds create wind chill which makes it feel significantly colder.)
- 2 Compare the height of Mount Everest to Mount Whitney, the highest mountain in the continental U.S., to Denali, the highest mountain in North America and to Mont Blanc, the highest mountain in western Europe. Where on Mount Everest would you be at each of these heights?
- 3 Many people have not survived their attempt to climb Mount Everest. What might some of the obstacles that stand in the way?
- 4 How did marine fossils get near the top of Mount Everest?
- 5 Find the altitude where the jet stream intersects the mountain. What effect might that have on climbers?
- 6 Which is the best season for climbing Mount Everest?
- 7 Based on its rate of growth, and not accounting for the effects of erosion, how tall will Mount Everest be in the year 2500?