

New Nomenclature For Clouds

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Abstract

If one looks at the history or evolution of cloud nomenclature, the names were mostly derived from Latin words and they are a bit difficult to remember by ordinary people. Here is an attempt to rename the clouds which may be more acceptable to ordinary people in India.

Introduction

First, let us look at the familiar names which are described in any meteorology text book. Luke Howard, an English pharmacist has first given the names for different cloud types in the beginning of the 19th century. Howard is mainly remembered now as the father of modern meteorology.

Four basic types of Clouds

Howard initially described three types of clouds, naming them Cirrus, Cumulus and Stratus. Here we propose equivalent new names for these three types of clouds.

मेघकेशा (Meghkesha - Cirro-form)

The meaning of Latin word 'cirro' is curl of hair. Meghkesha clouds are whitish and hair-like and, they are mainly composed of ice crystals. They are the high clouds to first appear in advance of a low-pressure area such as a tropical system like cyclone.

मेघमाला (Meghmala - Cumulo-form)

Meghmala clouds generally look like white fluffy cotton balls and they are detached clouds. They represent vertical motion of air taking place in the atmosphere. They usually appear dense with very sharp outlines. The flat base of meghmala cloud occurs at the altitude where the moisture in rising air condenses.

मेघदूत (Meghdut - Strato-form)

Meghdut clouds are usually broad and wide spread appearing like a blanket. They form due to non-convective rising air and tend to occur to the north of warm fronts. The boundaries of meghdut clouds are diffuse.

To these three types, Howard subsequently added a fourth type.

मेघराज (Meghraj - Nimbo-form)

He described a special rainy cloud type, which combined the three types **Cumulo** + **Cirro** + **Stratus**. He named this cloud, '**Nimbus**', which is the Latin word for rain. Let us call it Meghraj. These clouds are very high and, the majority of precipitation occurs from meghraj clouds.

The beauty of Howard's classification system is that the basic types could be freely recombined to describe every shape and size of cloud like stratocumulus, cirrostratus, cumulonimbus etc. According to his observations, clouds could often have features of two or more types; meghkesha + meghdut, meghmala + meghdut, etc. His research served as the starting point for the ten basic types of clouds we observe.

Ten Basic Types of Clouds

From the World Meteorological Organization's (WMO) *International Cloud Atlas*, the official worldwide standard for clouds, the following are names of the ten basic cloud types. New names for these basic clouds are proposed here as follows.

1. मेघमाला (Meghmala - Cumulus)
2. मेघदूत (Meghdut - Stratus)
3. मेघमधु (Meghmadhu - Stratocumulus)
4. मेघद्रि (Meghadri - Altocumulus)
5. मेघराजदूत (Meghrajdut - Nimbostratus)
6. मेघनील (Meghneel - Altostratus)
7. मेघकेशा (Meghkesha - Cirrus)
8. मेघमणि (Meghmoni - Cirrocumulus)
9. मेघनाथ (Meghnath - Cumulonimbus)
10. मेघदूतकेशा (Meghdutkesha - Cirrostratus)

According to the height of the clouds, these are divided into three groups

High-Level Clouds

Meghkesha (Cirrus), Meghmoni (Cirrocumulus), and Meghdutkesha (Cirrostratus) are

high-level clouds. They are white and thin in appearance, but can appear in a beautiful array of colors, if the sun is low on the horizon.

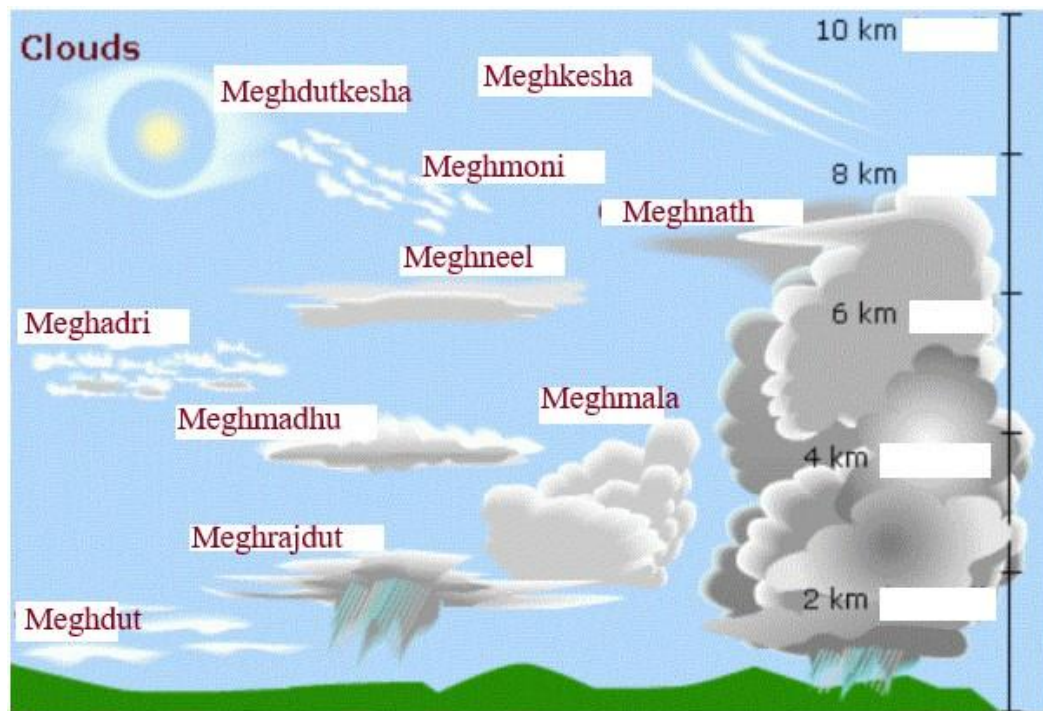
Mid-Level Clouds

Meghadri (Alto cumulus), Meghneel (Altostratus), and Meghrajdut (Nimbostratus) are mid-level clouds. Primarily they are composed of water droplets. If temperatures are very low, they can also be composed of ice crystals.

Low-Level Clouds

Meghmala (Cumulus), Meghmadhu (Stratocumulus), Meghnath (Cumulonimbus) and Meghdut (Stratus) are low clouds composed of water droplets. Meghnath, with its strong vertical updraft, extends well into the high-level of cloud.

The shapes and heights of these clouds can be visually represented by the following figure



Let us briefly describe each type of clouds and when they can be seen in the sky.

1. मेघमाला (Meghmala - Cumulus)

Meghmala clouds are the clouds one learns to draw in childhood and they serve as the symbol of all clouds. Their bottoms are relatively dark and flat. When sun is bright, their tops are also bright, rounded and puffy. Meghmala clouds develop on clear, sunny days when the sun heats the ground directly below. They also get the name of “fair weather” clouds. They appear in the late morning, grow, and then disappear toward evening.

2. मेघदूत (Meghdut - Stratus)

Meghdut clouds hang low in the sky as a flat, featureless, uniform layer of grayish cloud. They resemble fog that hugs the horizon instead of the ground. They are so broad and widespread that they can carry any message to long distance away. That is why they get their name as meghdut or messenger. Meghdut clouds are seen on dreary, overcast days and are associated with light mist or drizzle.

3. मेघमधु (Meghmadhu - Stratocumulus)

Meghmadhu are low, puffy, grayish or whitish clouds that occur in patches with blue sky visible in between. When viewed from ground, meghmadhu has a dark, honeycomb appearance. One can see meghmadhu clouds on mostly cloudy days. They form when there is weak convection in the atmosphere.

4. मेघद्रि (Meghadri - Altocumulus)

Meghadri and meghmadhu are often mistaken. Besides meghadri being higher up in the sky, another way to distinguish them apart is by the size of their individual cloud mounds. If one places one's hand up to the sky and in the direction of the cloud; if the mound is the size of one's thumb, it is Meghadri. If it is closer to fist-size, it is probably Meghmadhu. Meghadri clouds are often spotted on warm and humid mornings, especially during summer. They can signal thunderstorms to come later in the day.

5. मेघराजदूत (Meghrajdut - Nimbostratus)

Meghrajdut clouds cover the sky in a dark gray layer. They extend from the low and middle layers of the atmosphere. They are very thick to blot out the sun. Meghrajdut are the quintessential rain cloud. You will see them whenever steady rain or snow is falling over a widespread area.

6. मेघनील (Meghneel - Altostratus)

Meghneel appear as gray or bluish-gray sheets of cloud that partially or totally cover the sky at mid-levels. Even though they cover the sky, you can typically still see the sun as a dimly lit disk behind them, but not enough light shines through to cast shadows on the ground. Meghneel tend to form ahead of a warm or occluded front. They can also occur together with Meghmala at a cold front.

7. मेघकेशा (Meghkesha - Cirrus)

As their name suggests (which is Latin for "curl of hair"), meghkesha clouds are thin, white, wispy strands of clouds that streak across the sky. Because Meghkesha clouds appear above 6 Km, an altitude where low temperatures and low water vapour exist, they are made up of tiny ice crystals rather than water droplets. Meghkesha typically occurs in fair weather. They can also form ahead of warm fronts and large-scale storms like tropical cyclones, so seeing them can also indicate storms may be coming.

8. मेघमणि (Meghmoni - Cirrocumulus)

Meghmoni clouds are small, white patches of clouds often arranged in rows those live at high altitudes and are made of ice crystals. The individual cloud mounds of meghmoni are much smaller than that of meghadri and meghmadhu and often look like grains or pearls. Meghmoni clouds are rare and relatively short-lived, but you will see them in winter or when it is cold but fair.

9. मेघनाथ (Meghnath - Cumulonimbus)

Meghnath clouds are one of the few clouds that span the low, middle, and high layers. They resemble the meghmala clouds from which they grow, except they rise into towers with bulging upper portions that look like cauliflower. Meghnath cloud tops are usually always flattened in the shape of an anvil or plume. Their bottoms are often hazy and dark. Meghnath clouds are thunderstorm clouds, so if one sees them one can be sure there is a nearby threat of severe weather (short but heavy periods of rainfall, hail, and possibly even tornadoes). As meghnath is listed at number nine of the ten basic clouds and their tops are so high that it became the source of the proverb “on cloud nine”, meaning on top of a great height.

10. मेघदूतकेशा (Meghdutkesha - Cirrostratus)

Meghdutkesha clouds are transparent, whitish clouds that veil or cover nearly the entire sky. To distinguish meghdutkesha, one has to look for a "halo" (a ring or circle of light) around the sun or moon. The halo is formed by the refraction of light on the ice crystals in the meghdutkesha clouds. Meghdutkesha indicates that a large amount of moisture is present in the upper atmosphere. They are also generally associated with approaching warm fronts.

