Lepidoptera Species and Climate Change

January 25, 2021

In News

- According to a recent study, rising average temperatures in the Himalayan region have driven several dozen species of butterfly and moth to habitats higher up the mountains.

Lepidoptera

- The Himalayas are home to more than 35% of Lepidoptera species (butterflies and moths) found in India.
- Lepidoptera is the order of insects that includes butterflies, moths and skippers.
- The name Lepidoptera is derived from the Greek, meaning “scaly winged,” and refers to the characteristic covering of microscopic dustlike scales on the wings.
- Due to their day-flying habits and bright colours, the butterflies are more familiar than the chiefly night-flying and dull-coloured moths, but the latter is far more varied and abundant.
- The skippers are a worldwide group intermediate between butterflies and moths.

Importance Lepidoptera Species

- They transform large amounts of plant matter into the animal matter and in turn serve as food for many other groups of animals
- They aid in pollination.

About Study

- It was carried out by the Zoological Survey of India (ZSI) and was funded by the Ministry of Environment,

Forest and Climate Change.

- The four-year study tracked 1,274 species of moth and 484 species of butterfly in Jammu and Kashmir (J&K), Himachal Pradesh, Uttarakhand, Sikkim, North Bengal, and Arunachal Pradesh.
- It also identified 80 new species of butterfly and moth.

Finding Of Study

- At least 49 species of moth and 17 species of butterfly have shown considerable new upward altitude movement.
- The extension of the range of Lepidoptera due to climate change has been observed all over the world as well.
- The ZSI predicts a decline of as much as 91% in the suitable area for the Notodontidae family of moths in J&K, Himachal, and Uttarakhand by 2050.
- The study also revealed an increase in the richness of Lepidoptera biodiversity from the Western to the Eastern Himalayas.
- The study has identified two species richness hotspots:
- One is in West Bengal’s Darjeeling hills, where more than 400 species records were documented.
- Another one is in Kumaon, Uttarakhand, where more than 600 species records were found.

Zoological Survey of India

- The Zoological Survey of India (ZSI), a subordinate organization of the Ministry of Environment and Forests was established in 1916.
- It is a national centre for faunistic survey and exploration of the resources leading to the advancement of knowledge on the exceptionally rich faunal diversity of the country.
- It has its headquarters at Kolkata and 16 regional stations located in different geographic locations of the country.