

KALLIGRAMMATIDAE

160 - 125 Million Years Ago

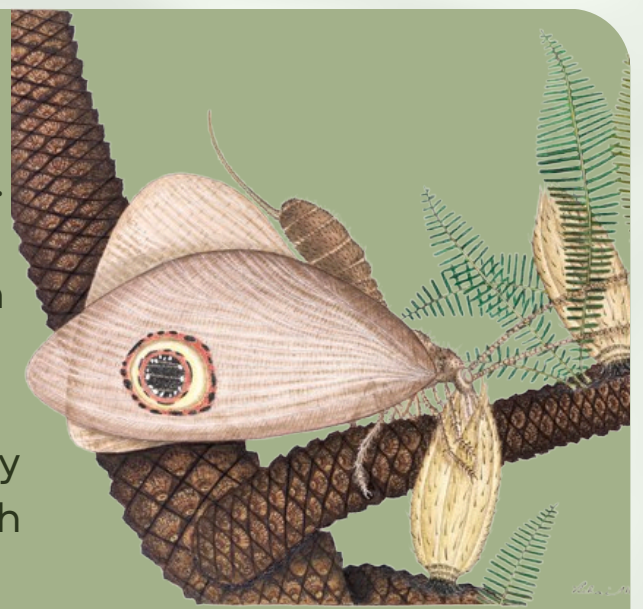


WHAT IS THE KALLIGRAMMATIDAE?

They were an extinct family of lacewing insects that lived during the Jurassic and Cretaceous periods. Called "butterflies of the Jurassic," they resembled modern butterflies, although not closely related. Fossils of these insects have been found mainly in Asia and show they likely played a role in pollination.

WHERE DID THEY LIVE?

Kalligrammatidae thrived in gymnosperm-dominated environments. Their fossils have been found mostly in the Northern Hemisphere, specifically in China and Germany. Evidence suggests they lived in forested areas. They were nectar/pollen consumers and most likely formed a close pollinator mutualism with the Bennettitalean family Williamsoniaceae. Overall, many of their behaviors were similar to modern butterflies.



Type 1



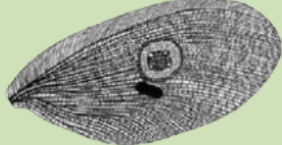
Type 2



Type 3



Type 4



WHAT ARE EYESPOTS?

Kalligrammatidae evolved intricate eyespots, similar to modern butterflies. These eyespots served as camouflage or predator deterrents. Six distinct eyespots evolved independently across multiple groups. The images to the left show types 1 - 4.

WHAT IS A PROBOSCIS?

Kalligrammatidae possessed a distinctive proboscis, a long, tube-like feeding structure adapted for siphoning liquids. This specialized mouthpart enabled them to feed on the nectar or other fluids produced by gymnosperm plants during the mid-Mesozoic.



WHAT ARE WING SCALES?

Kalligrammatidae had two types of wing scales. One was longer narrow scales that had a spatulae shape and the other was shorter scales with a broad base that tapers to a tip. They gave the wings their colors, which could help with camouflage to hide from predators. Wing scales also helped with flight control. Modern butterflies also had wing scales

