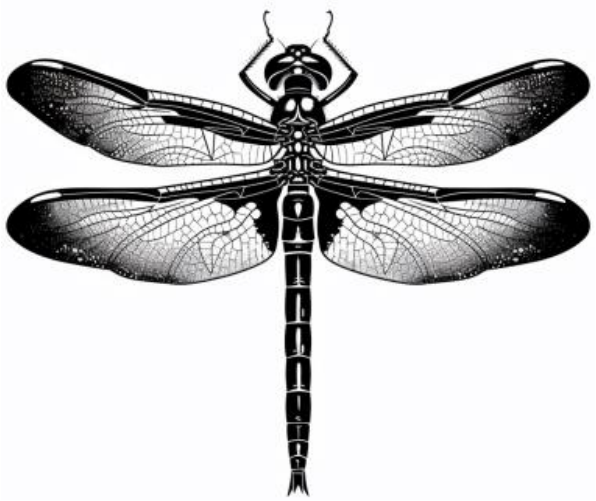
Earth’s Giant Prehistoric Dragonflies



In the ancient landscapes of the Carboniferous period, approximately 300 million years ago (and tens of millions of years before the appearance of the first dinosaurs), the skies were dominated by the gargantuan wings of Meganeura. Meganeura was a colossal dragonfly-like insect that has captivated the imaginations of both scientists and enthusiasts alike. This magnificent creature, with a wingspan that could rival many modern birds, provides a fascinating glimpse into Earth's prehistoric past.

Meganeura, meaning "large-vein," belonged to the order Meganisoptera, a group of ancient insects that shared characteristics with both modern-day dragonflies and damselflies. The size of these prehistoric insects was truly staggering, with some estimates suggesting wingspans reaching up to 70 centimeters (27.5 inches). To put this into perspective, the largest dragonflies today have wingspans of around 12 centimeters (4.7 inches).

The secret to Meganeura's incredible size lies in the environmental conditions of the Carboniferous period. During this time, Earth's atmosphere contained significantly higher oxygen levels compared to today, which allowed insects to grow to unprecedented sizes. The abundant oxygen facilitated efficient respiratory systems, enabling these insects to support larger bodies and more massive wings.

One of the most striking features of Meganeura was its large, intricate wings. Fossil evidence reveals a network of veins on the wings, resembling the pattern seen in modern dragonflies. These powerful wings allowed Meganeura to traverse vast distances and efficiently hunt for prey. Meganeura was likely a skilled and agile flyer, preying on smaller insects in the dense forests that covered the ancient landscape.

The life cycle of Meganeura mirrored that of modern dragonflies. It underwent incomplete metamorphosis, transitioning from egg to nymph and finally to the adult flying stage. The aquatic nymphs likely inhabited freshwater environments, where they would have been formidable predators in their own right.

While Meganeura's impressive wingspan and predatory nature are awe-inspiring, the question of its survival strategies arises. The ancient skies were not only home to giant dragonflies but also to various other predators, including early amphibians and reptiles. Meganeura's robust flight capabilities, combined with its potentially rapid reproduction cycle, could have been key factors in its ability to evade or outpace predators.

As the Carboniferous period gave way to subsequent geological eras, the atmospheric oxygen levels declined, and Meganeura, along with most other giant insects, vanished from the planet. The evolutionary path of insects took a different course, leading to the smaller but highly successful forms we see today.

NAME: _____ **DATE:** _____

Comprehension Quiz Practice – Giant Dragonfly

- ***Choose the best answers.***

1. **When did Meganeura, the giant prehistoric dragonfly, exist?**
   a) during the age of dinosaurs
   b) 300 million years ago
   c) the Jurassic period
   d) tens of millions of years ago

2. **What was the wingspan of Meganeura estimated to be?**
   a) 12 centimeters (4.7 inches)
   b) 70 centimeters (27.5 inches)
   c) 50 centimeters (19.7 inches)
   d) 177 centimeters (69.7 inches)

3. **What does the name "Meganeura" mean?**
   a) large vein
   b) fossil dragonfly
   c) agile flyer
   d) long wings

4. **What environmental condition led to the large size of Meganeura?**
   a) lower carbon dioxide levels
   b) increased humidity
   c) higher oxygen levels
   d) warmer temperatures

5. **Where did Meganeura likely spend its nymph stage?**
   a) in forest trees
   b) high up in the sky
   c) in freshwater environments
   d) a few centimeters below ground

6. **What is mentioned as a food source for Meganeura?**
   a) insects
   b) fish
   c) eggs
   d) berries

7. **What other larger animals preyed upon Meganeura?**
   a) dinosaurs and birds
   b) prehistoric people
   c) giant millipedes
   d) amphibians and reptiles

8. **What was the likely cause of Meganeura disappearing from the planet?**
   a) competition from other giant insects
   b) geological changes such as volcanoes
   c) the emergence of dinosaurs
   d) decrease in atmospheric oxygen

- ***Discuss the following questions with a classmate.***

1. Would you like to see giant dragonflies alive in our modern world? Why? / Why not?

2. What very large insects do you know that exist today?

3. Do you think schools should spend more time teaching science subjects? Why? / Why not?

4. Would you like to become a scientist and study ancient prehistoric animals? Why? / Why not?

5. What are some of the largest animals alive today?

6. Do you think insects would make good pets? Why? / Why not?

7. Can you suggest another name besides "Meganeura"?

Comprehension Quiz **Meganeura: Giant Dragonfly**

Level Advanced
Time Approximately 20 minutes

"Earth's Giant Prehistoric Dragonflies"

As **Reading Quiz Practice** – or as **Listening Quiz Practice**

Downloadable Audio File: 3 minutes and 42 seconds

ANSWER KEY

1. B
2. B
3. A
4. C
5. C
6. A
7. D
8. D

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Grades as percentages

8 / 8 = 100%
7 / 8 = 87.5
6 / 8 = 75
5 / 8 = 62.5
4 / 8 = 50
3 / 8 = 37.5
2 / 8 = 25
1 / 8 = 12.5
0 / 8 = 0