Scientists Uncover First 1-Centimetre Fossil in Gobi Desert

Description

A small fossil found in Mongolia’s Gobi Desert has unveiled a new species of early mammal, believed to have existed approximately 90 million years ago. This discovery is significant as it enhances understanding of the earliest relatives of placental mammals.

The specimen was extracted in 2019 from the Bayanshiree Formation, a site known for its scarcity of mammalian fossils compared to other locations in the region. Its rarity makes this find particularly noteworthy, occurring in a field largely dominated by more extensively documented fossil layers.

Called Ravjaa ishiii, this species is classified within the Zhelestidae family, an early group of eutherian mammals, which are ancestors to modern placental mammals. These small, mouse-sized creatures coexisted with dinosaurs and occupied ecological spaces that researchers are still working to comprehend.

The fossil itself comprises a mere 1-centimetre jaw fragment, including the tip of a premolar and three molars. Despite its size, this fragment contains enough anatomical detail to classify it as a new genus and species. Researchers, including Tsukasa Okoshi, highlighted that the well-preserved fossils from this era in Mongolia have been crucial to understanding mammalian evolution during the Mesozoic era.

Notably, the dental features of Ravjaa ishiii are distinctive; its molars are unusually tall and robust, setting it apart from known relatives. This suggests that early eutherians began to exploit resources linked to the rise of flowering plants during the Cretaceous period, indicating a shift in dietary habits even as dinosaurs maintained ecological dominance.

Beyond its anatomy, Ravjaa ishiii holds evolutionary significance as the first identified zhelestid specimen from the Bayanshiree Formation, representing a potential ancestral link that may date back to the transition between Early and Late Cretaceous periods. Experts like Professor Mototaka Saneyoshi remarked on the remarkable chance of discovering such a tiny fossil within the vast desert landscape.

Comprehension Questions

Multiple Choice

1. Where was the fossil of the new species found?

   Option: Mongolia
   Option: China
   Option: Russia

Option: India

2. How many years ago is the new mammal species believed to have existed?

Option: 50 million
Option: 70 million
Option: 90 million
Option: 100 million

3. What is the name of the new species discovered?

Option: Zhelestidae
Option: Ravjaa ishiii
Option: Mesozoic mammal
Option: Gobi desert mammal

4. What size was the fossil fragment?

Option: 0.5 centimeters
Option: 1 centimeter
Option: 2 centimeters
Option: 3 centimeters

5. To which family does Ravjaa ishiii belong?

Option: Eutherian
Option: Zhelestidae
Option: Placental
Option: Therapsid

6. What was a significant feature of the molars of Ravjaa ishiii?

Option: They were small and flat
Option: They were unusually tall and robust
Option: They were sharp and pointed
Option: They were absent

True-False

7. The fossil was excavated in 2019.

8. Ravjaa ishiii is part of the Marsupial family.

9. The Bayanshiree Formation is known for an abundance of mammalian fossils.

10. Ravjaa ishiii coexisted with dinosaurs.

11. The fossil is a large piece containing an entire skeleton.

12. The discovery of Ravjaa ishiii contributes to understanding early mammal evolution.

Gap-Fill

13. Ravjaa ishiii was discovered in the _____ Desert.
14. The fossil fragment is only _____ centimeters in size.

14. The fossil fragment is only _____ centimeters in size.

15. The Zhelestidae family is an early group of _____ mammals.

16. Ravjaa ishiii is believed to have existed approximately _____ million years ago.

17. The fossil includes a jaw fragment with a tip of a premolar and _____ molars.

18. The molars of Ravjaa ishiii are distinctively tall and _____.

Answer

Multiple Choice: 1. Mongolia 2. 90 million 3. Ravjaa ishiii 4. 1 centimeter 5. Zhelestidae 6. They were unusually tall and robust
True-False: 7. True 8. False 9. False 10. True 11. False 12. True 14. True
Gap-Fill: 13. Gobi 14. 1 15. eutherian 16. 90 17. three 18. robust

CATEGORY

1. Sci/Tech - LEVEL6

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