

# Life on Arran

## Giant Insects and Vast Forests

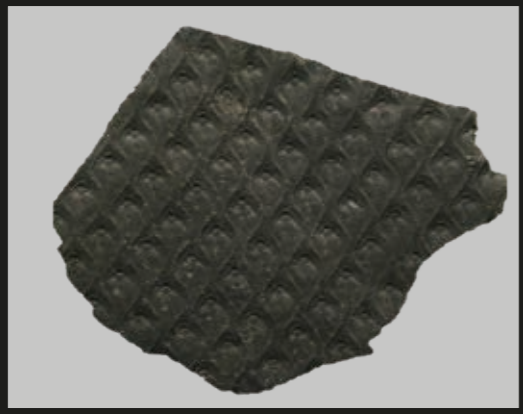
During the Carboniferous period, Arran basked in a warm tropical climate due to its position close to the equator and the land and seas were filled with life.

Dragonflies would have been the size of seagulls with a wingspan of 75 cm!

The growth of enormous forests in the Carboniferous led to higher levels of O<sub>2</sub> (35%) compared to today (21%) allowing insects to grow to gigantic proportions!

Fossilised roots or *Stigmaria* from the *Lepidodendron* have small circular depressions which represent the attachment point of rootlets.

A fossil cast of the trunk of a *Lepidodendron* exhibits a diamond shaped pattern from the imprint of leaves. They can be mistaken for fossilised snake skin!

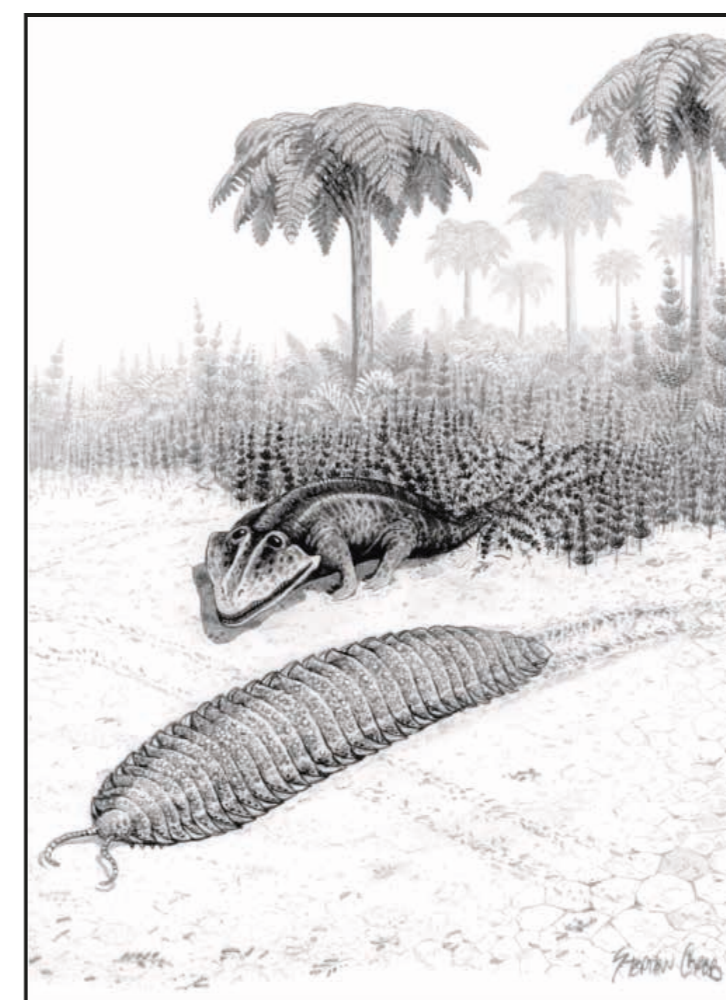


The organic matter from vast swamp forests would eventually form coal reserves. One of the most common plant fossils on Arran belong to the prehistoric tree, *Lepidodendron*, which could grow up to 38 meters high and have a diameter of 2 meters!

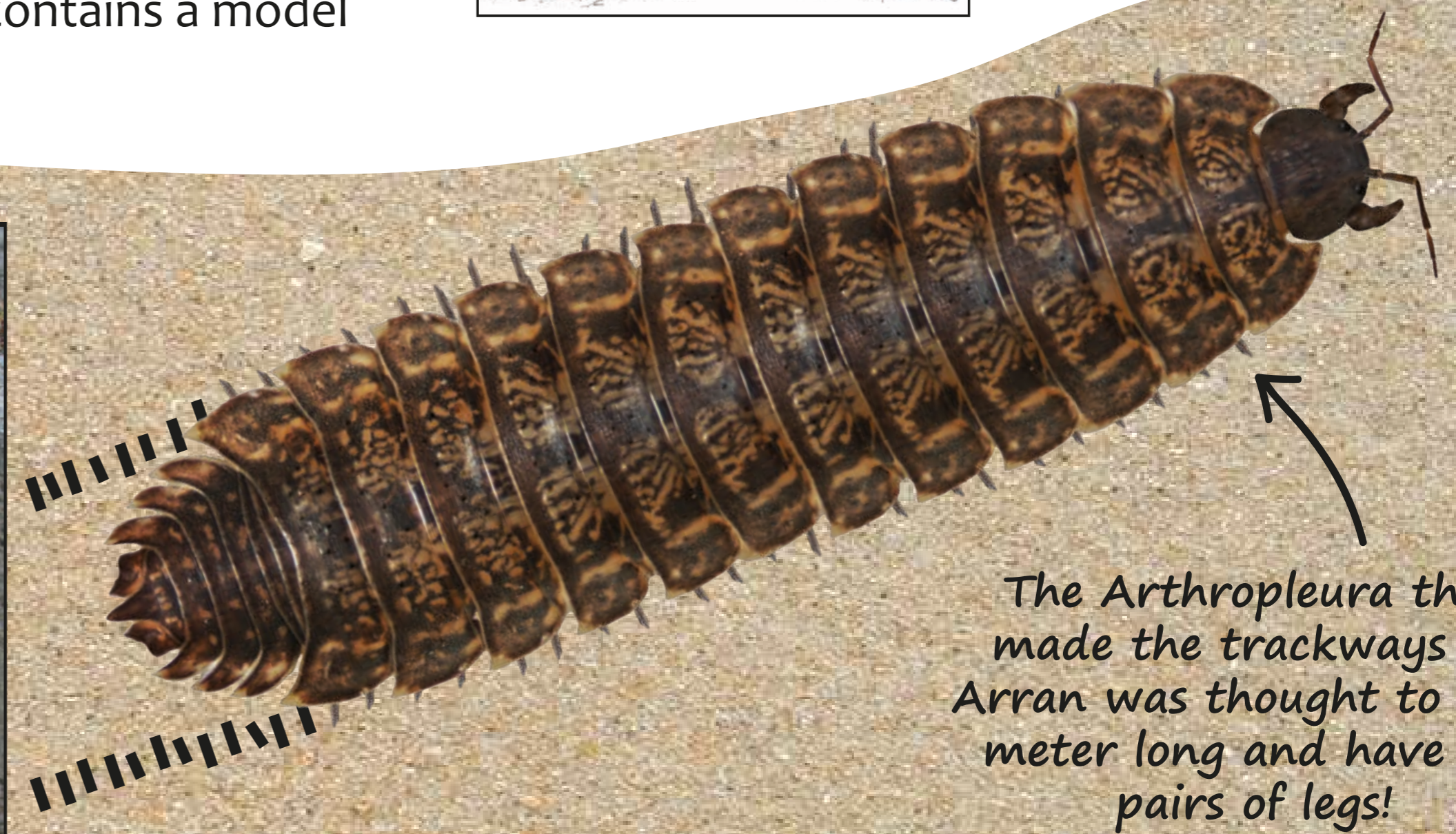
## Arthropleura Trackway at Laggan Harbour

Arthropleura was a giant myriapod that roamed parts of Scotland, North America and Europe during the late Carboniferous to early Permian (346-294 million years ago). They could grow to over 2 meters in length and are thought to be the largest terrestrial invertebrate to have lived on Earth! Arthropleura became extinct in the early Permian from a loss of habitat as the climate became hotter and drier and desert conditions prevailed.

A rare example of fossilised Arthropleura tracks can be seen at Laggan Harbour on the northeast coast of Arran. David Attenborough famously visited this site as part of his series "Lost Worlds, Vanished Lives" (1989). The tank behind you contains a model replica of Arthropleura and its tracks.

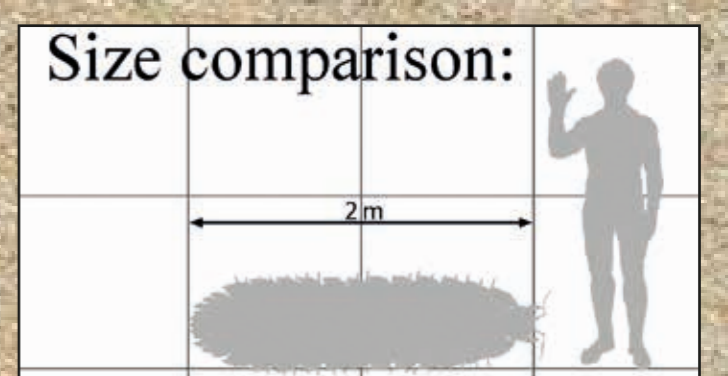


It is not clear what their diet may have consisted of, however fossil evidence from their gut and coprolites (poo!) suggest it was a herbivore. Arthropleura were likely to be predated on by larger amphibians and reptiles.



The Arthropleura that made the trackways on Arran was thought to be 1 meter long and have 23 pairs of legs!

There are two distinct trackways, the longest extends for over 6 meters and is 36 cm across!



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## In the Seas

The limestones on Arran hold an array of marine fossils indicating a diversity of life in the warm tropical seas during the Carboniferous period.

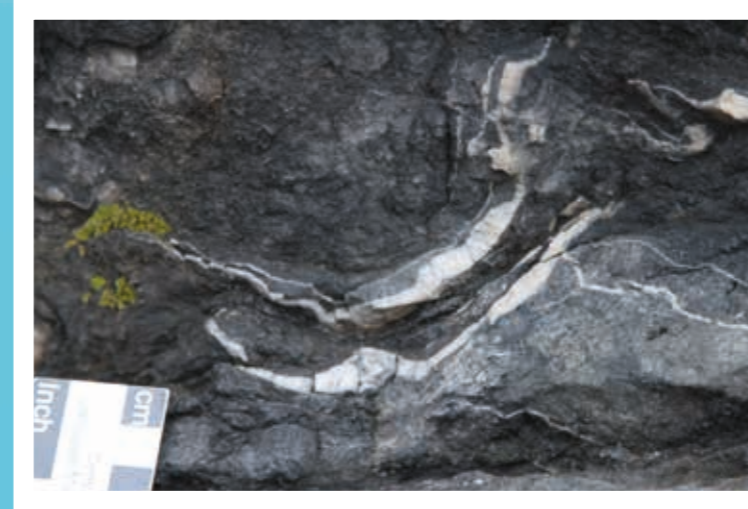
① Crinoids grew in what would have resembled crowded 'gardens'. Their stems were anchored to the ground, whilst feather-like appendages caught small particles of food.



The fossilised remains of crinoid stalks resembles polo-mint shaped discs stacked together.



Brachiopod Spiriferida



The largest brachiopod, *Gigantoproductus*, could grow up to 12 cm across! Their fossilised shells can be seen as lumps and bumps in the limestone on Arran. In cross section they leave concave white 'smiles'.

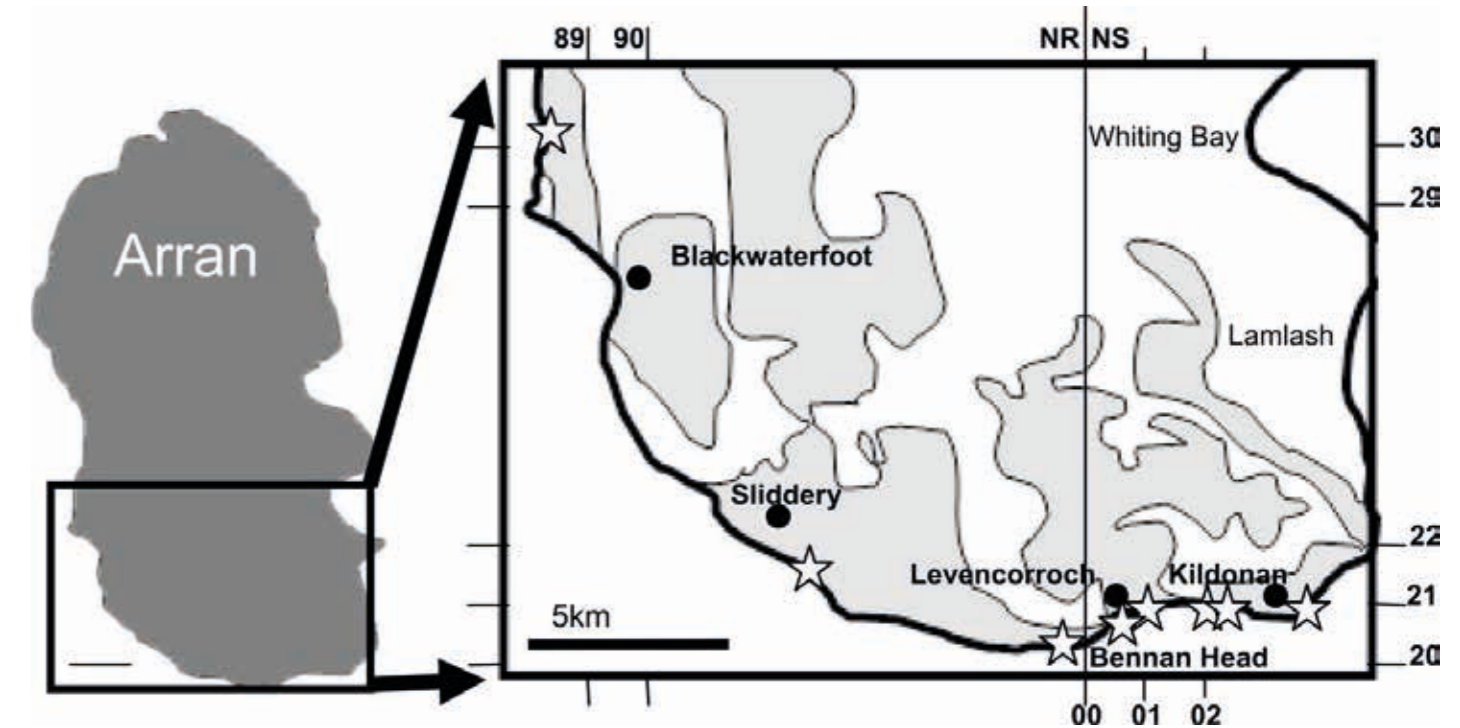
② Brachiopods are rare today, however were abundant during the Carboniferous. They consist of two shells which can open to filter feed, or be tightly shut for protection.

③ Corals are simple soft bodied animals called polyps with a calcareous skeleton. They can take food in through their mouth which is surrounded by stinging tentacles! Individual corals can form large colonies or reefs.



## The 'Hand-Beast' of Arran

The Triassic rocks on Arran hold evidence of giant reptiles walking along a sandy surface around 270 million years ago. Footprints of a giant 'hand beast' or *Isochirotherium*, were found in sandstone at various sites around the northwest and south coast of the Island. The fossilised tracks indicate the animal was a reptile, similar to crocodiles and dinosaurs, and grew to over 3 meters in length! Similar footprints have been found at different locations worldwide, however no fossilised remains of the animal itself have been discovered.



A map of Arran with stars marking the location of the footprints. Below is a sketch of what the 'hand-beast' may have looked like (Clark, N. The hand-beast of Blackwaterfoot, 2011).



Over 100 marks from the 'hand-beast' have been identified on the south coast of Arran.



The trace fossils are of five-fingered footprints which vary between 16-38 cm in length. The unusual shaped prints have a small fifth toe which is the equivalent of a human hands pinkie.