

What is Tmesipteris oblanceolate?

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About Tmesipteris oblanceolate:

- It is a **rare species of fern** which **grows primarily on the ground or atop fallen tree trunks** on the island nation of **New Caledonia** (an overseas French territory situated in the **Southwest Pacific**), and on **neighboring islands** such as Vanuatu.
- It is a **small plant**, typically 10-15 centimeters (4-6 inches) in height.
- It has a **record-breaking genome size** of 160.45 billion base pairs (Gbp), the units that make up a strand of **DNA**, 11 billion more than the previous record holder, the Japanese flowering plant Paris japonica, and **50 times more than the human genome**.
 - If stretched out like from a ball of yarn, the length of the DNA in each **cell** of this fern would extend nearly 350 feet (106 meters). The human genome would extend a mere 6-1/2 feet (2 meters).
- **Tmesipteris is a small genus of ferns** whose ancestors **evolved about 350 million years ago** — well **before dinosaurs** set foot on Earth.
- It is distinguished by its mainly **epiphytic habit** (it grows mainly on the trunks and branches of trees) and **restricted distribution in Oceania** and **several Pacific Islands**.

What are Ferns?

- Ferns are **plants that do not have flowers**.
 - Similar to flowering plants, ferns **have roots, stems, and leaves**.
 - However, **unlike flowering plants**, ferns **do not have flowers or seeds**; instead, they usually **reproduce sexually by tiny spores** or **sometimes can reproduce vegetatively**.
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Q1: What is Genome?

A genome is the complete set of genetic information in an organism. It provides all of the information the organism requires to function. In living organisms, the genome is stored in long molecules of DNA called chromosomes. Small sections of DNA, called genes, code for the RNA and protein molecules required by the organism. In eukaryotes, each cell's genome is contained within a membrane-bound structure called the nucleus. Prokaryotes, which contain no inner membranes, store their genome in a region of the cytoplasm called the nucleoid. The full range of RNA molecules expressed by a genome is known as its transcriptome, and the full assortment of proteins produced by the genome is called its proteome.

Source: Humble fern from New Caledonia boasts world's largest genome

Source: <https://vajiramandravi.com/current-affairs/tmesipteris-oblanceolate/>

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