

4 Xerophytes are plants that show adaptive features for dry habitats.

(a) Complete the sentence to define the term adaptive feature.

An adaptive feature is an feature that helps an organism to and in its environment.

[2]

(b) Marram grass is a xerophytic plant.

Fig. 4.1 is a photomicrograph of a cross-section of a marram grass leaf.

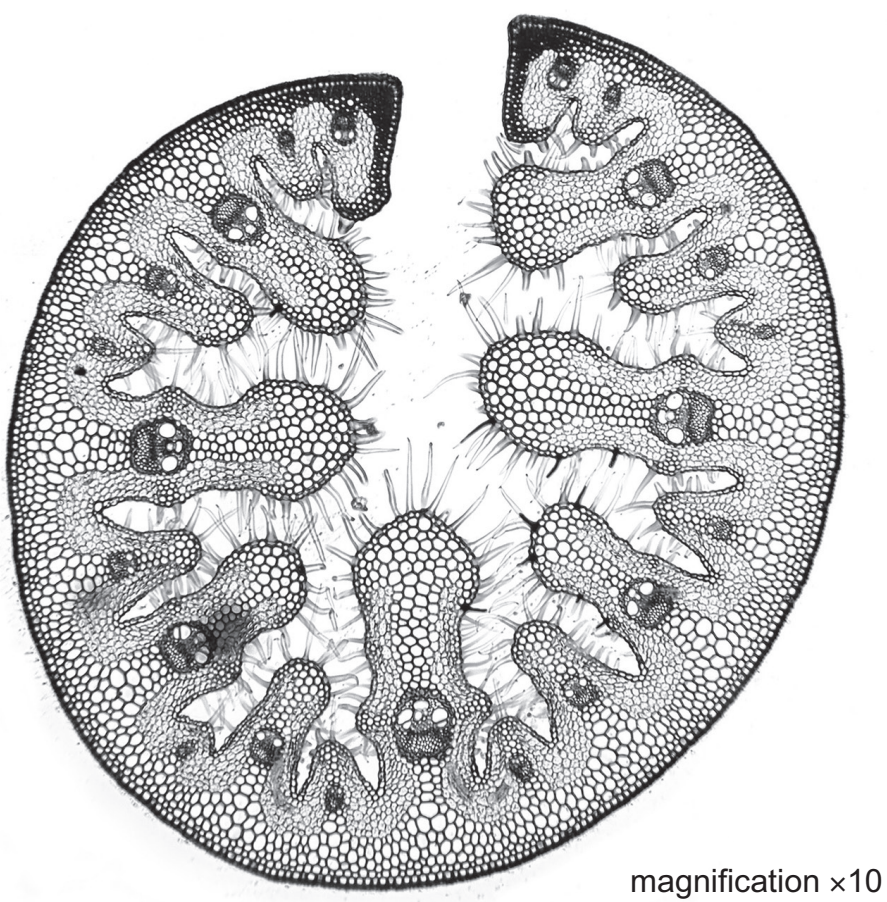


Fig. 4.1

Using Fig. 4.1, describe the visible features that identify this as a xerophyte leaf.

.....

 [2]

(c) (i) The mean cell wall thickness of an epidermal cell from one species of xerophyte is $1.276\ \mu\text{m}$.

Convert $1.276\ \mu\text{m}$ to mm.

..... mm [1]

(ii) State the name of the carbohydrate molecule used to build cell walls in xerophytes.

..... [1]

(iii) Suggest **one** way the stem of a xerophyte is adapted for dry habitats.

.....
 [1]

(d) Fig. 4.2 is a diagram showing the root systems of two different species of xerophyte.

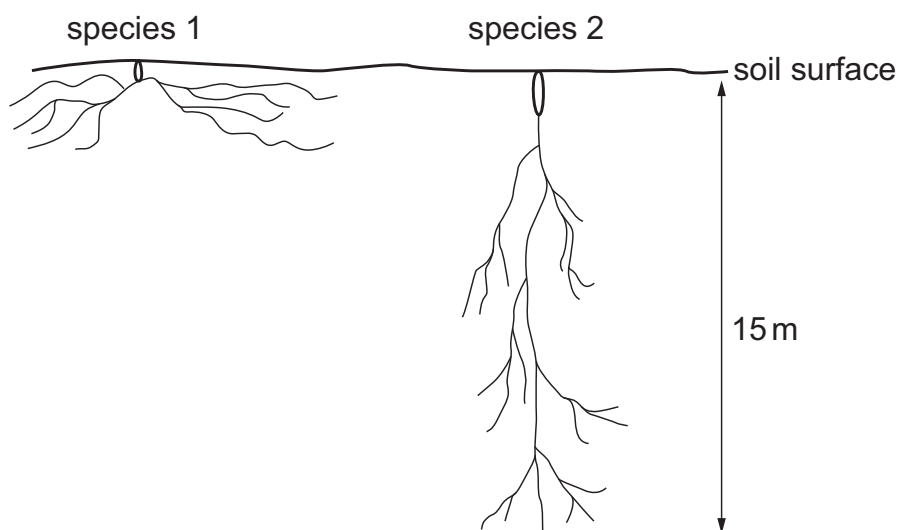


Fig. 4.2

Describe the **two** root systems shown in Fig. 4.2 **and** suggest how each one is an adaptation for living in a dry environment.

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 [3]