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MATRIC NUMBER: 19/MHS01/084

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1. Although we often think of fungi as organisms that cause disease and rot food, fungi are important to human life on many levels. They influence the well-being of human populations on a large scale because they are part of the nutrient cycle in ecosystems. They also have other ecosystem uses, such as pesticides.
2. 
3. Sexual reproduction in the fungi consists of three sequential stages: plasmogamy, karyogamy, and [meiosis](https://www.britannica.com/science/meiosis-cytology). The diploid chromosomes are pulled apart into two daughter cells, each containing a single set of chromosomes (a [haploid](https://www.britannica.com/science/haploidy) state). Plasmogamy, the fusion of two protoplasts (the contents of the two cells), brings together two compatible haploid nuclei. At this point, two nuclear types are present in the same cell, but the nuclei have not yet fused. Karyogamy results in the fusion of these haploid nuclei and the formation of a diploid nucleus (i.e., a nucleus containing two sets of [chromosomes](https://www.britannica.com/science/chromosome), one from each parent). The cell formed by karyogamy is called the [zygote](https://www.britannica.com/science/zygote). In most fungi the zygote is the only cell in the entire life cycle that is diploid. The dikaryotic state that results from plasmogamy is often a prominent condition in fungi and may be prolonged over several generations. In the lower fungi, karyogamy usually follows plasmogamy almost immediately. In the more evolved fungi, however, karyogamy is separated from plasmogamy. Once karyogamy has occurred, meiosis (cell division that reduces the [chromosome number](https://www.britannica.com/science/chromosome-number) to one set per cell) generally follows and restores the haploid phase. The haploid nuclei that result from meiosis are generally incorporated in spores called [meiospores](https://www.britannica.com/science/meiospore).
4. Two adaptations made the move from water to land possible for Bryophytes: a waxy cuticle and gametangia. The waxy cuticle helped to protect the plants tissue from drying out and the gametangia provided further protection against drying out specifically for the plants gametes
5. A. Eustele:  A type of siphonostele, in which the vascular tissue in the stem forms a central ring of bundles around a pith.  a stele typical of dicotyledonous plants that consists of vascular bundles of xylem and phloem strands with parenchymal cells between the bundles



1. Atactostele. Noun. (plural atactosteles) (botany) A type of eustele, found in monocots, in which the vascular tissue in the stem exists as scattered bundles.



1. Siphonostelea stele consisting of a core of pith surrounded by concentric layers of xylem and phloem.



1. dictyostele. : a stele in which the vascular cylinder is broken up into a longitudinal series or network of vascular strands around a central pith (as in many ferns)
2. 

