Lecture 21

- Fungi
 - diverse; widespread
 - essential to terrestrial ecosystems
 - break down organic material; recycle vital nutrients
 - estimated 1.5 million species exist
 - heterotrophs
 - feed by absorption
 - enzyme versatility = fungal ecological success
 - o decomposers
 - o parasites - diverse lifestyles
 - o mutualists
 - body structure
 - mycelia branched multicellular networks of hyphae adapted for absorption.
 - grow as large filaments, single cells (yeasts), or both
 - cell walls contain chitin
 - hyphae are divided by septa



- pores allow cell to cell organelle movement
 nocytic fungi
- coenocytic fungi
 - lack septa
 - plasin is continuou aclei
- lundreds of thousa ids d
- Preview mycorrhizae
 - phosphate ions and minerals to plants
 - haistona
 - penetrate plant tissues
 - most vascular plants have mutualistic mycorrhizae
 - some fungi are predators •
 - fungi produce spores through sexual or asexual life cycles •
 - fungal nuclei are haploid
 - brief diploid stage forms during sexual life cycles •
 - sexual reproduction •
 - fusion of hyphae from different mating types
 - use pheromones to communicate their mating type
 - karyogamy = nuclear fusion
 - asexual reproduction
 - o molds
 - o single cell yeasts
 - simple cell division
 - ancestor
 - aquatic, single-celled, flagellated protist
 - o fungi and animals more closely related than they are to plants and eukaryotes
 - oldest fossils 460 million years old

- \circ mollusks
 - snails and slugs (some are terrestrial)
 - oysters and clams
 - . octopi and squids
 - most are marine, but some inhabit freshwater
 - soft-bodied animals; most are protected by a hard shell
 - all mollusks have a similar body plan:
 - muscular foot
 - visceral mass •
 - mantle
- o annelids

- coelomates with bodies composed of a series of flat rings
 - 2 major clades
 - errantia
 - sedentaria
- ecdysozoans
 - most species-rich animal group
 - covered by a tough coat called a cuticle
 - 2 large phyla: 0
 - nematodes
 - roundworms
- sale.co.uk Il, tissues of plants, and bodily fluids found in aquatit h, b tak • and tissues of animals
 - her circulatory system Preview nođs
 - ry all habitats of the biosphere fo IP d. T.
 - 2 out of 3 known species of animals
 - consist of 3 major lineages:
 - 0 chelicerates
 - sea spiders, horseshoe crabs, scorpions, ticks, mites, and spiders
 - myriapods 0
 - centipedes and millipedes
 - pancrustaceans 0
 - lobsters, other crustaceans
 - . insects
 - hexapoda •
 - \circ enormous clade
 - insects and relatives
 - live in almost every terrestrial habitat and • freshwater
- echinoderms (phylum echinodermata) •
 - \circ sea stars, sea urchins
- chordates (phylum chordata) •
 - o vertebrates