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**Group Tracheophyta** – Vascular Plants: Key to the Divisions and Classes

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GROUP TRACHEOPHYTA - VASCULAR PLANTS

Plants with a well developed vascular system (xylem and phloem) in the sporophyte generation, leaves (either macrophylls or microphylls), and roots; reproduction by spores, or by microspores and megaspores, and by seeds (in most), the latter borne in cones or flowers.

Key to the Divisions and Classes.

1. Plants with small scalelike leaves, usually with a single vein (microphylls); reproduction by means of spores; flowers or woody cones lacking .......................... 2

   — Plants with large leaves, usually with more than a single vein (macrophylls), if scalelike, as occasionally, otherwise different from above; reproduction by spores or seeds, the latter borne in flowers or cones .......................... 3

2(1). Stems jointed, fluted, and hollow in the internodes; leaves not green, reduced to a sheath of commate scales at the nodes; plants neither grass- nor mosslike .......................... Equisetophyta, p. 9

   — Stems not jointed, leaves green and imbricated, not whorled or forming a sheath at the nodes; plants either aquatic and grasslike or terrestrial and mosslike .......................... Lycopsidophyta, p. 13

3(1). Plants fernlike and with broad leaves or free-floating aquatic with small overlapping leaves; reproduction by spores; flowers and woody cones lacking .......................... Polytrichophyta, p. 15

   — Plants neither fernlike nor free-floating aquatic (except in Lemmaceae); reproduction by spores and seeds, these borne in flowers or cones .......................... 4

4(3). Seeds not borne enclosed by ripening carpels, but naked and situated on the surface of a scale, these borne crowded together on an axis and forming a cone; flowers not developed; leaves typically needle- or scalelike .......................... Pinales, p. 24

   — Seeds borne in ripening carpels, plants with flowers; leaves mainly not needle- or scalelike (Magnoliophyta) .......................... 5

5(4). Flower parts mainly 4- or 5-merous, leaves typically not veined; stems increasing in diameter by means of a cambium between the xylem and phloem; cotyledons typically 2 .......................... Magnoliopsida, p. 35

   — Flower parts typically 3-merous; leaves typically parallel veined; stems usually lacking a cambium or, if present, producing entire vascular bundles; cotyledon 1 .......................... Liliopsida, p. 647