

## GLOSSARY

The more specialised terms used in the Handbook are explained below. Most of the morphological terms are defined and many illustrated in Stearn's *Botanical Latin* (1973), which I have used as the standard reference work when preparing the descriptions. A few terms have, however, been defined more narrowly than usual for the purposes of this Handbook.

- Abaxial:** the side of an organ facing away from the axis of a stem (cf *adaxial*).
- A-chromosome:** the normal chromosome, composed of euchromatin and heterochromatin (cf *B-chromosome*).
- Acuminate:** tapering to a long, fine point.
- Acute:** narrowed to a point.
- Adaxial:** the side of an organ facing the axis of the stem (cf *abaxial*).
- Adnate:** applied to two organs which are attached along their lengths, as if fused together.
- Air channel:** a tubular channel running along the length of the leaf. Air channels are found on each side of the midrib in *Potamogeton* Subgenus *Coleogeton* and *Ruppia*.
- Alternate:** arising at different levels on an axis, first on one side and then on another.
- Amplexicaul:** clasping the stem for at least half its diameter; **semi-amplexicaul:** clasping the stem for less than half its diameter.
- Anthesis:** the period of flowering.
- Apical:** situated at the apex.
- Apiculate:** rounded to obtuse, but terminating in a short point composed partly or entirely of the lamina (cf *mucronate*).
- Appressed:** pressed against the surface.
- Auricle:** an ear-like lobe or appendage, usually at the base of a leaf (adjective, **auriculate**).
- B-chromosome:** a supplementary chromosome, usually composed wholly of heterochromatin (cf *A-chromosome*).
- Beak:** a point, formed by the persistent style, which projects from the apex of the fruit.
- Calcicole:** growing in habitats characterised by high concentrations of calcium.
- Calcifuge:** avoiding habitats characterised by high concentrations of calcium, i.e. found in acidic habitats.
- Canaliculate:** with a groove along the length of the organ.
- Capitate:** knob-shaped, borne on a narrower axis (literally, with a head).

**Carpel:** one of the basic units of the gynoecium, found at the centre of the flower and containing (in the Potamogetonaceae and Ruppiaceae) a single ovule.

**Casual:** only persisting for a short period, usually a single generation.

**Clone:** a single genetic individual, spreading vegetatively or propagated asexually (adjective, **clonal**).

**Compressed:** (of a stem or peduncle) with the longest axis of the cross-section 1.5–2.5 times as long as the shortest; **slightly compressed:** with the longest axis 1.1–1.5 times as long as the shortest; **strongly compressed:** with the longest axis 2.5–3.5 times as long as the shortest (cf *flattened*, *terete*).

**Conductivity:** the ability of water to conduct electricity. Conductivity provides an estimate of the total content of dissolved salts; waters with high conductivity are usually eutrophic or brackish.

**Contiguous:** touching or overlapping.

**Cordate:** with two rounded lobes at the base separated by a deep sinus.

**Coriaceous:** with a toughness resembling that of leather. Many leaves so described, including those of *Potamogeton*, are not literally as tough as leather but are relatively tough compared to leaves borne elsewhere on the plant or on related species.

**Cuneate:** with a V-shaped base.

**Denticulate:** with small teeth pointing outwards.

**Distal:** away from the point of attachment (cf *proximal*).

**Distant:** separated, not touching or overlapping.

**Distichous:** arranged in two opposite ranks, e.g. alternate leaves in which the first leaf lies directly below the third, the second below the fourth, etc.

**Dorsal:** the side of the carpel or fruit facing away from the central axis of the flower (cf *ventral*).

**Dystrophic:** peat-stained. In Britain and Ireland dystrophic waters have very low concentrations of dissolved nutrients and can therefore be included within the more general term *oligotrophic*.

**Elliptical:** broadest at the middle, narrowing towards each end, with the margins curved.

**Emarginate:** with a shallowly concave outline at the apex. This is not the normal meaning of emarginate, which means notched at the apex, but I have used it in the apparent absence of a more appropriate word to describe the stipule apex of, for example, *P. crispus*.

**Endocarp:** the layer of cells below the two thin outer layers of the fruit, the exocarp and the mesocarp. In *Potamogeton* it is composed of sclerified cells and forms the hard 'stone' of the fruit.

**Entire:** (of an edge) without teeth or lobes.

**Erect:** standing upright.

**Eutrophic:** with high concentrations of the nutrients required for plant growth. Eutrophic waters normally support high algal or macrophyte growth in



favourable seasons and therefore become depleted of oxygen (cf *mesotrophic*, *oligotrophic*).

**Eutrophication:** an increase in the concentration of nutrients required for plant growth. Although eutrophication can be a natural phenomenon, the word is usually applied to artificial increases, e.g. those occurring when run-off from fertilised fields enters a water body.

**Excurrent:** projecting beyond the margin.

**Falcate:** curved like the blade of a sickle.

**Filiform:** very narrowly cylindrical (literally, thread-like).

**Flattened:** (of a stem or peduncle) with the longest axis of the cross-section at least 3.5 times as long as the shortest (cf *terete*, *compressed*).

**Flexuous:** gently bending alternately inwards and outwards.

**Flimsy:** a folded piece of thin paper used to contain a plant specimen in the press or before it is mounted on a herbarium sheet.

**Fugacious:** falling off very rapidly.

**Fusiform:** (of a solid body) broad in the middle, tapering at both ends (literally, spindle-shaped).

**Glabrous:** without hairs.

**Grazing marsh:** low-lying pasture, the fields often separated by ditches (which are sometimes called dykes, reens or rhines).

**Heterophyllous:** with submerged and floating leaves which differ in morphology (cf *homophyllous*).

**Homophyllous:** with submerged but no floating leaves (cf *heterophyllous*).

**Hyaline:** colourless and transparent.

**Hypogynous:** with the tepals attached beneath the base of the ovary.

**Imbricate:** closely appressed and overlapping.

**Intercostal veins:** the veins between the two strong veins or ribs of a stipule.

The intercostal veins of open stipules are counted along the closed side.

**Keeled:** with a ridge running along the longitudinal axis, like the keel of a boat.

**Lacunae:** pale bands of tissue alongside the midrib or the veins of a leaf.

**Lamina:** the leaf-blade.

**Lanceolate:** broadest below the middle and about three times as long as wide.

**Lateral veins:** the veins running from base to apex of the leaf on either side of the midrib.

**Ligule:** a hyaline appendage at the apex of the sheath in *Potamogeton* Subgenus *Coleogeton*.

**Linear:** narrow, with parallel sides.

**Loch:** Scottish word for lake (diminutive: **lochan**).

**Lustrous:** shining with reflected light.

**Machair lake/loch:** a lake influenced by stabilised sand ('machair') on the west coasts of Ireland and Scotland. Machair lakes usually lie at the junction of machair and rocky ground, and therefore demonstrate an interesting range of environmental conditions.



- Macrophyte:** a macroscopic, submerged or floating water plant.
- Marl lake:** a lake containing water with a high concentration of dissolved calcium carbonate, which often becomes deposited on plant stems and inorganic objects in the water. Marl lakes usually contain low concentrations of other nutrients (e.g. nitrogen, potassium) and are therefore calcareous but oligotrophic.
- Mesotrophic:** with moderate concentrations of the nutrients required for plant growth (cf *eutrophic*, *oligotrophic*).
- Midrib:** the vein which runs along the central line of the leaf from base to apex.
- Monopodial:** (of a rhizome) a pattern of growth in which the apical bud grows horizontally, the upright shoots developing from lateral buds (cf *sympodial*).
- Monotypic:** (of a genus or family) containing only one species.
- Mucronate:** rounded to obtuse, but with a short point composed of the excurrent midrib (cf *apiculate*).
- Muricate:** rough, with short, hard projections (diminutive: **muriculate**).
- Nodal gland:** a swelling at the node of the stem. Nodal glands are found in opposite pairs.
- Numerous:** (of flowers in an inflorescence) more than 20.
- Oblanceolate:** broadest above the middle and about three times as long as wide (i.e. inverted lanceolate).
- Oblong:** approximately rectangular, broadest at the middle and with more or less parallel sides.
- Obovate:** with the outline of a hen's egg, broadest near the apex (i.e. inverted ovate).
- Obtuse:** blunt (cf *acute*, *rounded*).
- Oligotrophic:** with low concentrations of the nutrients required for plant growth. Oligotrophic waters normally support low algal or macrophyte growth and therefore retain high concentrations of oxygen (cf *eutrophic*, *mesotrophic*).
- Ontogenetic:** (of change) occurring during the development of the individual.
- Opaque:** not transmitting light, i.e. neither transparent nor translucent.
- Opposite:** arising at the same level on different sides of an axis. Structures so arranged are therefore grouped in pairs.
- Orbicular:** circular.
- Ovate:** with the outline of a hen's egg, broadest near the base.
- Peduncle:** the stalk of an inflorescence.
- Persistent:** remaining attached.
- Petiole:** the stalk of a leaf.
- Phyllode:** a leaf formed from a petiole.
- Proximal:** towards the point of attachment (cf *distal*).
- Recurved:** curved back towards the base of an organ.
- Reticulate:** forming a network.



- Rhizome:** a modified stem, usually growing within the substrate and bearing roots at the nodes and stems at some nodes (adjective, **rhizomatous**).
- Robust:** (of a rhizome, stem or peduncle) 2.0–4.0 mm in diameter; **very robust:** over 4.0 mm in diameter (cf *slender*).
- Rounded:** with an apex which approximates in shape to an arc of a circle (broader than *obtuse*).
- Rugose:** wrinkled, like the surface of a prune.
- Sclerenchymatous strand:** a length of strengthening tissue in the lamina of a leaf.
- Secondary vein:** a vein running from the midrib to one of the inner lateral veins or from one lateral vein to another.
- Semi-amplexicaul:** see *amplexicaul*.
- Serrate:** with forwardly-pointing teeth (diminutive: **serrulate**).
- Sessile:** without a stalk.
- Sheath:** a structure at the base of a leaf, which enfolds the stem.
- Sinuuous:** with an outline like that of a series of waves.
- Slender:** (of a rhizome, stem or peduncle) 1.0–2.0 mm in diameter; **very slender:** less than 1.0 mm in diameter (cf *robust*).
- Slightly compressed:** see *compressed*.
- Spike:** a cylindrical inflorescence.
- Stipule:** an appendage at the base of a leaf.
- Stylar neck:** a narrow connection between the ovary and the stigma.
- Sub:** a prefix to an adjective indicating that the object approaches the condition described but does not attain it completely.
- Submerged:** growing entirely under water.
- Sympodial:** (of a rhizome) a pattern of growth in which the apical bud grows into an aerial stem, the rhizome being continued by a lateral bud from its base (cf *monopodial*).
- Tepal:** a perianth segment.
- Terete:** circular and smooth in cross-section, not compressed, flattened, ridged, angled or grooved.
- Translucent:** allowing light to pass through partially or diffusely (cf *opaque*).
- Truncate:** ending abruptly, as if cut straight across.
- Tuber:** a small propagule of non-photosynthetic tissue which develops on the rhizome.
- Turion:** a reduced branch, with highly modified photosynthetic leaves and stipules, which is borne in a leaf axil or at the apex of a stem.
- Undulate:** with wave-like folds.
- Vein:** a strand of conducting tissue running through a leaf or stipule.
- Venation:** the system of veins in a leaf.
- Ventral:** the side of the carpel or fruit facing the central axis of the flower (cf *dorsal*).