





*The white flowers of Schumannianthus dichotomus, a native emergent plant of Singapore.*

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## GLOSSARY

<b>Acuminate</b>	Tapered to a point.	<b>Axillary</b>	A single bud that is borne at the axil of a leaf and is capable of developing into a branch shoot or flower cluster. It is also known as a lateral bud.
<b>Acute</b>	With a sharp point or tip.	<b>Bark</b>	Outer layer of a tree trunk, composed of phloem tissue. Its texture varies from being smooth, scaly to fissured.
<b>Adventitious</b>	Growth arising from an abnormal position on the plant.	<b>Basal</b>	Leaves attached to rhizome or other underground stem.
<b>Aerial roots</b>	A root descending from a branch but not penetrating into the soil.	<b>Berry</b>	Fleshy fruit containing one or more seeds.
<b>Aggregate</b>	Individual, small fruits from separate ovaries within a single flower crowded or massed into a dense cluster.	<b>Biomass</b>	Estimation of the total mass of a living organism during a certain growth stage.
<b>Algae</b>	(singular, alga; adjective, algal) Oldest and most primitive plant group; mostly aquatic, comprising diverse but mostly unspecialized growth forms.	<b>Blade</b>	Flat green part of the leaf that collects sunlight.
<b>Alternate</b>	Leaves growing singly on each side of the stem at one leaf per node.	<b>Brackish</b>	Water with salinity levels between that of fresh and seawater.
<b>Anaerobic</b>	Devoid of or occurring in the absence of oxygen.	<b>Bract</b>	Modified or specialised leaf, from the axil of which a flower or flower stalk arises. Bracts are usually green and resemble the other leaves. Some bracts are brightly-colored in order to attract pollinators.
<b>Angiosperms</b>	Plants that bear seeds.	<b>Bud</b>	Embryonic shoot with an immature stem tip.
<b>Angular</b>	Sharp-cornered.	<b>Bulb</b>	Short and modified underground stems surrounded by fleshy and modified leaves that contain stored food for the dormant shoot within.
<b>Annual</b>	Plant that completes its life cycle within a year.	<b>Buttress</b>	Roots growing above ground from the base and trunk to provide support to tall trees growing on shallow or waterlogged soils.
<b>Anther</b>	See stamen.		
<b>Apex</b>	Tip of leaf, root or shoot.		
<b>Aquatic</b>	Pertaining to a watery habitat, which may be fresh, brackish or seawater.		
<b>Attenuate</b>	Base becoming thinner, more slender.		
<b>Axil</b>	Upper angle between a leaf and the stem to which it is attached.		

<b>Calyx</b>	Collective term for the sepals of a flower.	<b>Cuticle</b>	Waxy film covering most leaf and young stem surfaces to reduce water loss by evaporation.
<b>Capsule</b>	Single dry fruit derived from two or more fused ovaries that usually split open at maturity to release the seeds.	<b>Dewatering</b>	Removal of moisture from aquatic plants.
<b>Catkin</b>	Single slender, spike-like flower cluster, sometimes drooping.	<b>Dichotomous</b>	Continually dividing into twos.
<b>Clasping</b>	Base partially or completely surrounds the stem.	<b>Dicotyledons</b>	(dicots) Largest subgroup of flowering plants, with embryos with two seed leaves, broad and net-veined leaves, and flowers mostly in five parts or sometimes in four parts.
<b>Cleft</b>	Deeply divided towards midrib.	<b>Dioecious</b>	Pattern in which some plants of a species have male flowers, producing only pollen, while other plants have female flowers, producing only ovules.
<b>Climber</b>	Weak, slender-stemmed plant which climbs on other plants. Climbers may be herbaceous (non-woody) or woody.	<b>Drupe</b>	Fleshy fruit in which the innermost part of the ovary wall becomes hard, thus forming a stone, within which is a single seed or kernel.
<b>Coastal</b>	Land next to the sea.	<b>Ecosystem</b>	Interdependence of different species in the living world and their environment. Ecosystems encompass communities of all sizes, from small ponds to the entire planet.
<b>Compound leaf</b>	Single leaf with more than one blade. Composed of a number of leaflets on a common stalk, arranged either palmately, as the fingers of a hand, or pinnately, as the leaflets of a fern; the leaflets themselves may be compound.	<b>Ellipsoid</b>	Three-dimensional shaped elliptic in outline.
<b>Conifer</b>	(adjective, coniferous) Largest group of cone-bearing seed plants, with mostly needle or scale leaves.	<b>Elliptic</b>	Shaped like an ellipse.
<b>Cordate</b>	Heart-shaped.	<b>Emarginate</b>	Having a shallow notch at the tip.
<b>Corm root</b>	(also corms) Short, thick and solid food-storing stem, sometimes bearing papery, scale leaves.	<b>Endosperm</b>	Nutritive matter in seed plant ovules, derived from the embryo sac.
<b>Corolla</b>	The collective term for the petals of a flower, which is usually not green.	<b>Entire</b>	Smooth leaf margin with no bumps.
<b>Cross-breed</b>	Producing a hybrid plant by breeding two plants of different species or varieties.	<b>Ephemeral</b>	Flowers that last for a short duration, usually around one to two days.
<b>Cultivated</b>	Plant species deliberately planted by humans.	<b>Erect</b>	Vertical or upright.
<b>Cuneate</b>	Wedge-shaped, narrowly triangular.	<b>Evergreen</b>	Used to describe a tree or shrub that never sheds its

	leaves completely and so whose crown is never bare.	<b>Glabrous</b>	Smooth, without hairs.
<b>Exotic</b>	Non-native (alien, introduced or non-indigenous) species. A species which has been deliberately or accidentally introduced to a country.	<b>Gland</b>	Substance-secreting organ.
<b>Family</b>	Major unit of taxonomic classification comprising related genera.	<b>Globose</b>	Almost globular or spherical.
<b>Fern</b>	Vascular plants reproducing by spores, often with large, much divided leaves (fronds) that are spirally coiled when young.	<b>Gymnosperm</b>	Seed plants whose ovules or seeds are carried naked on the cone scales.
<b>Fibrous roots</b>	Root system made up of many thread-like members of more or less equal length.	<b>Habit</b>	General appearance of the plant.
<b>Filament</b>	Part of a stamen that typically serves as a stalk for the anthers.	<b>Habitat</b>	Place and specific type of local environment that an organism occupies.
<b>Fissure</b>	Long, narrow, sometimes deep cracks on the surface.	<b>Hastate</b>	Spearhead-shaped.
<b>Flower</b>	Reproductive structure of angiosperms; a complete flower that includes sepals, petals, stamens (male structures), and carpels (female structures).	<b>Herb</b>	Non-woody plant. Herbs are usually small plants but larger ones such as bananas or ginger may also occur.
<b>Follicle</b>	Dry fruit derived from a single carpel. The margins of the follicle, which met and fused during the development of the carpel, split apart again to release the seeds; generally considered to be the most primitive fruit.	<b>Herbaceous</b>	Non-woody.
<b>Freshwater</b>	Water that contains less than 2 parts per thousand salinity (2‰).	<b>Hybrid</b>	Individually produced as a result of a cross between two different species, often infertile and expressing vigorous growth.
<b>Funnel-form</b>	Corolla that is shaped like a funnel.	<b>Hypocotyl</b>	Portion of the stem from a seedling below the cotyledons.
<b>Genus</b>	Unit in the taxonomic hierarchy, subordinate in rank to family, but above species level.	<b>Indigenous</b>	Native species.
<b>Germination</b>	Start of growth of a seed, spore or pollen grain, usually followed by a dormant period.	<b>Inflorescence</b>	Single connected group of flowers. In botany, the term refers to the way individual flowers are arranged on the plant or in which single or multiple flowers develop on the same stem.
		<b>Invasive</b>	Alien species which becomes established in semi-natural or natural habitats; it is an agent of possible change in the environment and threatens the survival of native species in these habitats.
		<b>Knee roots</b>	Above-ground roots shaped like a knee.
		<b>Lamina</b>	Blade of a leaf.
		<b>Lanceolate</b>	Shaped like a head of a lance.

<b>Leaflet</b>	One of the blades of a compound leaf; several leaflets form a leaf on a common petiole.	<b>Naturalised</b>	Animal or plant species that has spread significantly and successfully reproducing sexually or asexually.
<b>Lenticel</b>	Small, corky pores or narrow lines that allow the interchange of gases between the interior tissue and the surrounding air.	<b>Nitrification</b>	Conversion of organic nitrogen and ammonium to nitrate.
<b>Linear</b>	Single slender, long leaf.	<b>Nitrogen fixation</b>	Biological process by which atmospheric nitrogen gas is converted into ammonia.
<b>Lobe</b>	Roundish projection or division.	<b>Node</b>	Point on a stem where a leaf is attached or has been attached.
<b>Macrophyte</b>	Aquatic plants or hydrophytes large enough to be seen without a microscope, includes algae, mosses, liverworts, ferns and angiosperms.	<b>Ob lanceolate</b>	Lance-shaped but broadest above the middle.
<b>Malesia</b>	Floristic region, on and between the Sunda and Sahul shelves; an area comprising Malaysia, Singapore, Brunei Darussalam, Papua New Guinea, the Philippines and the islands of Indonesia.	<b>Oblique</b>	Having sides of unequal length of form.
<b>Mangrove forests</b>	Swamp forests that develop in brackish or saline water, on tropical and subtropical tidal mud flats in estuaries.	<b>Oblong</b>	Somewhat elongated form, with approximately parallel sides.
<b>Monocotyledons</b>	(monocots) Smaller of the two subgroups of flowering plants, with embryos with one seed leaf, mostly long, narrow, parallel-veined leaves, and flowers with their parts in threes.	<b>Obovate</b>	Inversely egg-shaped, with the broader end upward.
<b>Mosses</b>	Non-vascular plants reproduced by spores, with stems and small leaves, and sporangia that open by terminal lids.	<b>Obovoid</b>	Pear-shaped.
<b>Mucronate</b>	Ending abruptly in a sharp point.	<b>Obtuse</b>	Having a blunt or rounded tip.
<b>Native</b>	Single indigenous species which occurs naturally in its natural habitat and has evolved there for over thousands or millions of years.	<b>Old World Tropics</b>	Tropical region of the Eastern hemisphere which comprises of Africa, Asia, Papua New Guinea and northern parts of Australia.
		<b>Opposite</b>	Leaves growing in pairs on either side of a stem, two leaves per node.
		<b>Oval</b>	Resembling an ellipse in shape; elliptical.
		<b>Ovate</b>	Broad and rounded base, tapering towards the end.
		<b>Ovoid</b>	Egg-shaped solid.
		<b>Ovule</b>	Structure in angiosperms and gymnosperms that develops into a seed when fertilised.
		<b>Parallel</b>	Having the same tendency or direction.
		<b>Perianth</b>	Collective term for the sepals and petals of a flower.



<b>Perennial</b>	Single plant that will live for three years or more, under normal conditions.		divides to form two sperms that fuse with eggs in the ovules. The cell resulting from the fusion of a sperm and an egg is the first cell of a new plant.
<b>Petal</b>	Sterile, highly modified leaf that is a single unit of a corolla. Petals often carry special markings that guide bees to the pollen.	<b>Pollination</b>	Transferring of pollen from the anthers to stigma, which is a prerequisite for fertilisation: the fusion of nuclei from pollen grain with nuclei in the ovule. Fertilisation allows the flower to develop seeds. See cross- and self-pollination.
<b>Petiole</b>	Stalk by which a leaf is attached to the stem.	<b>Pollinator</b>	Single animal which acts as a dispersal agent for a plant's pollen.
<b>pH</b>	Value on a scale of 0-14 that measures the acidity or alkalinity of a substance. A pH of 7 indicates that the substance is neutral.	<b>Prop root</b>	Single root which grows from the lower part of the tree's trunk that supports the tree.
<b>Photosynthesis</b>	Process by which sunlight is harnessed by the plant to convert water and carbon dioxide into sugars for energy, with oxygen released as a by-product. There are three photosynthetic pathways; the C3 pathway which is utilised by the majority of plants that grow where temperatures are moderate and rainfall is reliable.	<b>Protists</b>	Diverse group of organisms, comprising eukaryotes that cannot be classified in any of the other kingdoms as fungi, animals, or plants.
<b>Pinna</b>	(pinnas or pinnae) Single leaflet or primary segment of a pinnate compound leaf.	<b>Pulau</b>	Malay word for island.
<b>Pinnate</b>	Feather-like; parts or branches arranged on each side of a common axis.	<b>Raceme</b>	Stalked flowers arranged singly along an elongated unbranched axis.
<b>Pioneer</b>	Species which is first introduced and establishes itself in a bare ground or freshly disturbed area.	<b>Receptacle</b>	Modified portion of the stem or axis that bears the organs of a single flower or the florets of a flower head. It can become part of the fruit after fertilisation.
<b>Pith</b>	Sponge-like, central cylinder of the stems of most flowering plants.	<b>Respiration</b>	Reversal process of photosynthesis. Using oxygen, plants and animals break up sugar molecules to release the life-enabling energy captured by photosynthesis. The by-products are water and carbon dioxide.
<b>Pneumatophore</b>	Breathing roots found on plants that grow on poorly-aerated substrates such as mangrove mud.	<b>Rhizome</b>	Horizontal, usually underground stem that often sends out roots and shoots from its nodes. Also known as rootstock or rootstalk.
<b>Pollen</b>	Pollen grains of flowering and cone-bearing seed plants form pollen tubes to reach the ovules of the same or different plants of their species. The nucleus of each pollen grain	<b>Ridge</b>	Angular with lengthwise lines.

<b>Riparian</b>	Wetlands found in and around river channels.	<b>Simple</b>	Single-bladed leaf or a lobed leaf in which the separate parts do not reach down to the midrib.
<b>Rosette</b>	Radiating cluster of leaves.	<b>Spadix</b>	Fleshy club-like spike bearing minute clusters or unisexual (having either stamens or pistils but not both) apetalous (having no petals) flowers.
<b>Rounded</b>	Shaped into the form of a circle or sphere.	<b>Spathe</b>	Bract, or pair of bracts, that encloses the flower cluster.
<b>Sagittate</b>	Arrowhead-shaped.	<b>Species</b>	(plural, species) Number of populations of individuals which are morphologically similar and usually free to interbreed to produce viable offspring. The abbreviations are sp. (singular) and spp. (plural).
<b>Scrub</b>	Vegetation that is dominated by shrubs and short trees.	<b>Spike</b>	Elongated, un-branched inflorescence with stalk-less flowers arranged along an axis.
<b>Seagrass</b>	Marine flowering plant that grows with its roots embedded in mud and/or sand of the intertidal zone.	<b>Spikelet</b>	Flower unit that makes up the inflorescence of members of the grass family (Gramineae).
<b>Seawater</b>	Water of about 35 parts per thousand salinity (35‰).	<b>Spine</b>	Often long, hard and sharply-pointed processes, modified from entire leaves or from their marginal teeth.
<b>Sedges</b>	Ecologically-important monocots providing food and shelter for aquatic and wetland animals. Their usual features: solid stems which are often triangular; sheath type leaves and small spikes of minute flowers, which are not enclosed in bracts.	<b>Sporangia</b>	(single, spongarium) Rounded organs with hollow interiors containing spores.
<b>Seed</b>	Reproductive unit of flowering and cone-bearing seed plants. A seed is multi-cellular and sometimes quite large, and develops from a fertilised ovule. The seed contains an embryonic plant and usually food reserves.	<b>Spore</b>	Single-celled, microscopic, reproductive unit of non-seed plants.
<b>Seedling</b>	Newly-emerged plant which has germinated from a seed.	<b>Stamen</b>	Appendage in flowers that consists of a stalk or filament, bearing at its tip is an anther with cavities containing pollen grains.
<b>Sepal</b>	Sterile, modified leaves that are part of the calyx. They protect the flower whilst developing from a bud which is frequently green and inconspicuous.	<b>Stigma</b>	Receives pollen during fertilisation and is covered in a sticky substance that pollen grains will adhere to.
<b>Serrate</b>	Leaf margin pointing to the leaf's tip.	<b>Stilt-root</b>	Single root arising from the stem some distance above the ground and affording support to the plant, often called prop roots.
<b>Sessile</b>	Lacking a stalk.		
<b>Sheath</b>	Tubular covering that surrounds part of a plant.		
<b>Shrub</b>	Woody, small to moderately-sized, multi-trunked plant.		

<b>Stipule</b>	Leafy appendage found, often in pairs, at or near the base of the petiole of a leaf.	<b>Upright</b>	More or less vertical, not spreading much.
<b>Stolon</b>	(or runners) Single shoot that bends towards the ground or grows horizontally above the ground, and produces roots and shoots at the nodes.	<b>Vascular</b>	Referring to plants that contain vessels which are differentiated from other cells for the purpose of transporting water, mineral salts and synthesized food materials from one part of the plant to another.
<b>Style</b>	Extension of a carpel, on which the stigma is borne.	<b>Vascular bundle</b>	Single longitudinal strand consisting of xylem and phloem. Vascular bundles transport water and soluble nutrients, and contribute towards the support mechanism of the plant.
<b>Substrate</b>	Material upon which an organism lives, e.g., soil for plants.	<b>Vegetation</b>	All the plant life in a particular habitat.
<b>Sungei/Sungai</b>	Malay word for river.	<b>Vein</b>	Single vascular bundle or rib.
<b>Swale</b>	Low-lying land between sand ridges with different plants to the flanks of the ridges.	<b>Viviparous</b>	Single germinated seedling that has developed while still attached to the parent plant.
<b>Tap roots</b>	Main root of a plant, usually stouter than lateral roots, growing straight downwards from the stem.	<b>Wasteland</b>	Vacant urban land awaiting development.
<b>Taxon</b>	Group of organisms belonging to a taxonomic rank, such as species, genus or family.	<b>Whorl</b>	Single group of three or more appendages, arising from the same point on an axis or stem.
<b>Thorn</b>	Short, sharply-pointed, modified branchlet.	<b>Whorled</b>	Having or forming whorls or a whorl, three or more leaves per node.
<b>Tree</b>	Large, woody plant with a single main stem or trunk.	<b>Widespread</b>	Animal or plant species that occurs naturally in many countries.
<b>Tuber</b>	Single, swollen, fleshy underground stem; a modified stolon thickened for use as storage organs. A tuber mostly develops when the stolons become subterranean.	<b>Wild</b>	Animal or plant species that occurs naturally or spontaneously; not cultivated or reared by humans; or those that have "escaped" from cultivation or captivity.
<b>Tuberous roots</b>	Swollen root in which nutrients (usually starch) are stored for the parent plant.	<b>Woody</b>	Containing wood which is a hard, fibrous substance found beneath the bark of lianas, shrubs and trees.
<b>Tubular</b>	Calyx forms a tube.		
<b>Umbel</b>	Flat-topped or rounded flower cluster in which individual flower stalks arise above from about the same point.		



*Bishan Park.*



*Woodlands Town Garden.*





*Chinese Garden*

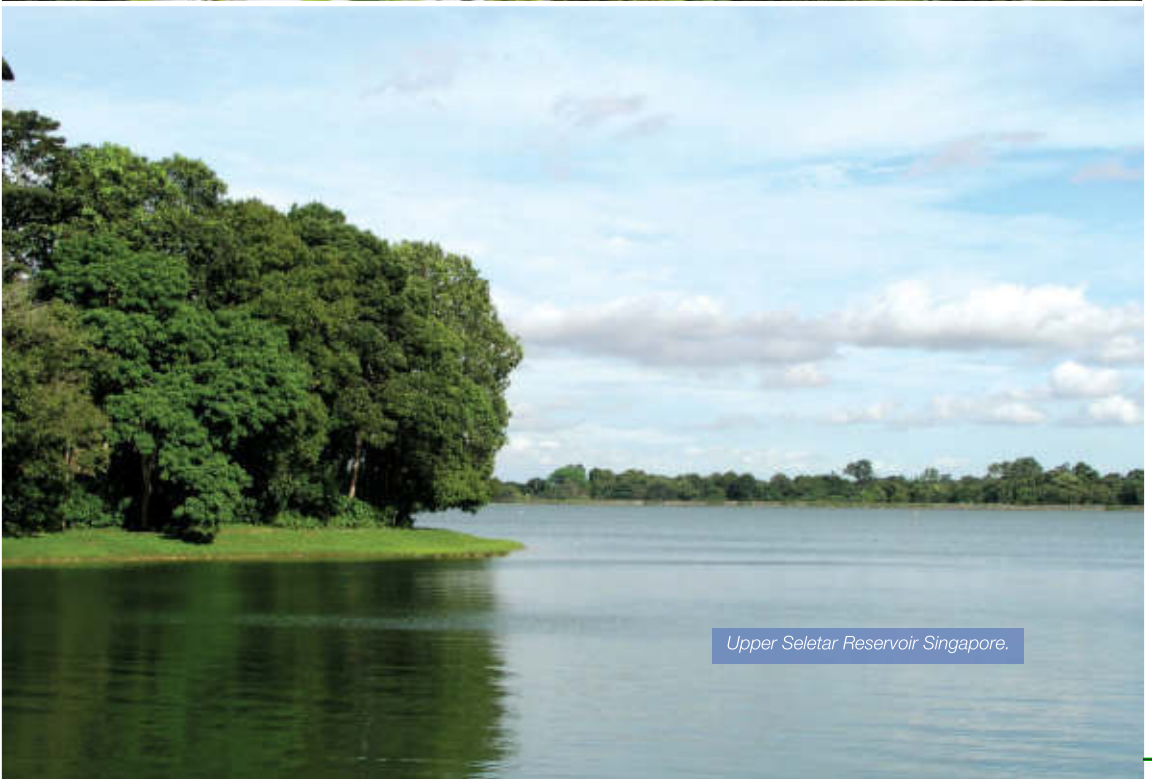
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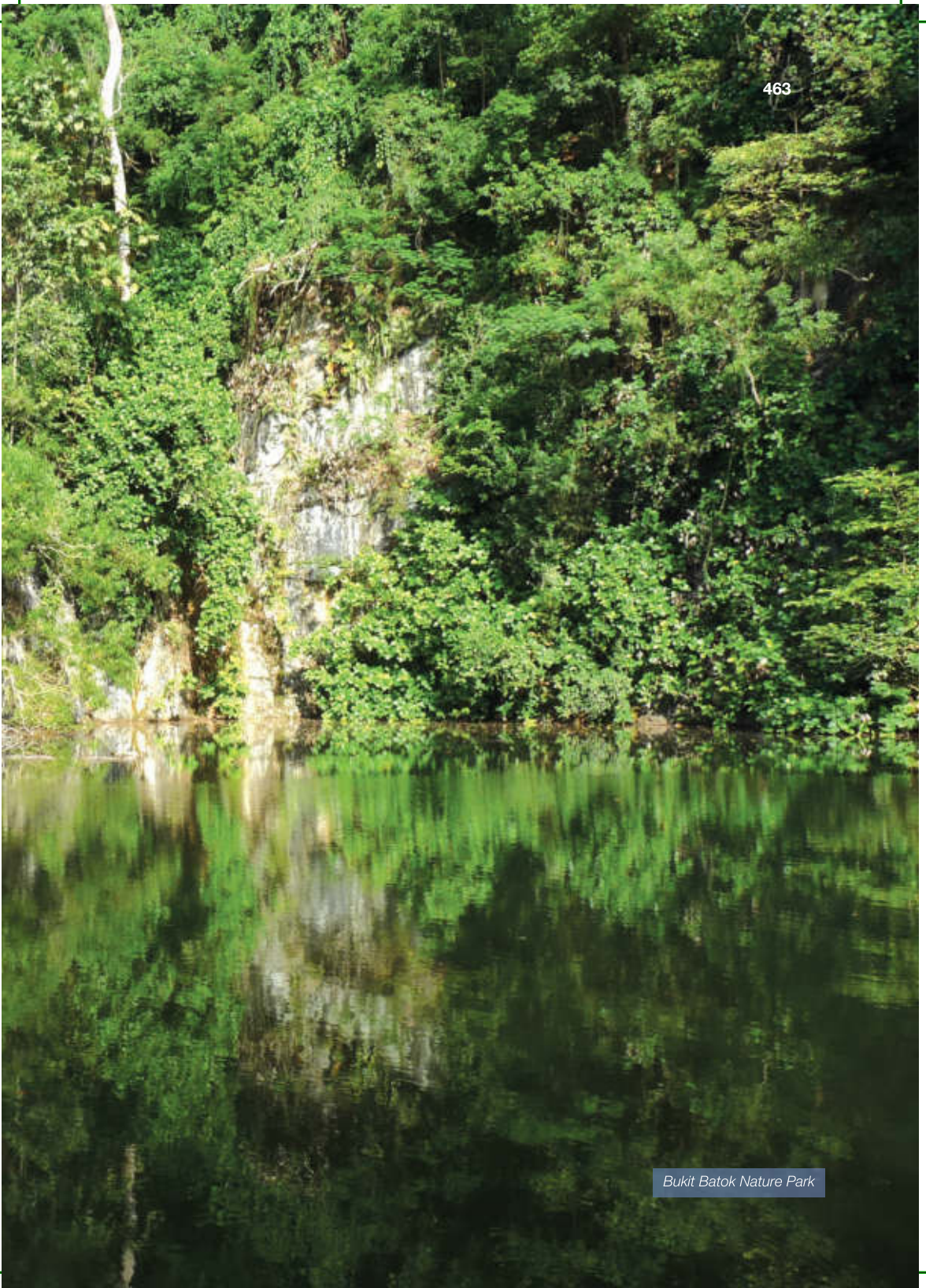
*Forested areas at Murai Reservoir.*



*Upper Seletar Reservoir Singapore.*







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