

the 3,000-foot level, while the treeless slopes and summits above treeline constitute a separate floral region of alpine and arctic-alpine plants. Shaw (1909) has published a paper entitled *The Causes of Timber-line on Mountains*.

The floras of the various major subdivisions of the Western Floral Region are described briefly under several headings:—

Coast Forest Region.—The lower levels of Vancouver Island, the Queen Charlotte Islands and the mainland coastal strip north to the Alaska Panhandle lie in this Region, whose heavy rainfalls and mild temperatures are reflected in the dominance of the following mesophytic (moisture-loving) trees essentially confined to the Region: Sitka spruce (*Picea sitchensis*), amabilis fir (*Abies amabilis*), mountain hemlock (*Tsuga mertensiana*), yellow cypress or cedar (*Chamaecyparis nootkatensis*), shore pine (*Pinus contorta*; the var. *latifolia*, with a more slender trunk, is the more widely distributed lodgepole pine), red alder (*Alnus rubra*), broadleaf maple (*Acer macrophyllum*) and cascara (*Rhamnus purshiana*; a small area also in the interior). On Vancouver Island and the adjacent mainland are the only stands in Canada of Garry oak (*Quercus garryana*), arbutus (*Arbutus menziesii*; bark bright orange-red), and vine maple (*Acer circinatum*). Pacific dogwood (*Cornus nuttallii*), usually a shrub but occasionally a small tree, is found on Vancouver Island and in the lower Fraser Valley.

More wide-ranging trees include grand fir (*Abies grandis*), western hemlock (*Tsuga heterophylla*), lodgepole pine (*Pinus contorta* var. *latifolia*), western white pine (*P. monticola*), western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga mucronata*), Rocky Mountain juniper (*Juniperus scopulorum*), western yew (*Taxus brevifolia*), Sitka alder (*Alnus sinuata*), black cottonwood (*Populus trichocarpa*) and dwarf maple (*Acer glabrum*).

The large-leaved ericaceous shrub, salal (*Gaultheria shallon*), has its main distribution in this Region. A member of the Broom-rape Family (*Boschniakia hookeri*) lives parasitically on its roots and was formerly used as a food plant by the Indians. Other shrubs essentially confined to the Coast Forest Region include Sitka willow (*Salix sitchensis*), two gooseberries (*Ribes divaricatum* and *R. lobbii*), two currants (*Ribes bracteosum* and *R. sanguineum*), Indian plum (*Osmaronia cerasiformis*), salmon-berry (*Rubus spectabilis*), Oregon crab-apple (*Pyrus fusca*), red bilberry (*Vaccinium parvifolium*) and evergreen huckleberry (*V. ovatum*). More wide-ranging shrubs include Oregon grape (*Mahonia aquifolium*), thimbleberry (*Rubus parviflorus*), buck-brush (*Ceanothus sanguineus*), devil's-club (*Oplopanax horridus*), tall mountain bilberry (*Vaccinium membranaceum*) and wax-berried elder (*Sambucus cerulea*).

Common herbs of this Region include giant horsetail (*Equisetum telemateia*), several ferns (*Blechnum spicant*, *Cheilanthes gracillima*, *Dryopteris arguta*, *Gymnogramme triangularis*, *Polypodium scolieri*, *P. vulgare*, *Polystichum andersonii*, *P. munitum*, *Woodwardia fimbriata*), western skunk-cabbage (*Lysichitum americanum*), western bluehead-lily (*Clintonia uniflora*), western wake-robin (*Trillium ovatum*), western wild ginger (*Asarum caudatum*), western yellow water-lily (*Nuphar polysepalum*), western marsh-marigold (*Caltha asarifolia*), western buttercup (*Ranunculus occidentalis*), false bugbane (*Trautvetteria grandis*), cutleaf goldthread (*Coptis asplenifolia*), vanilla-leaf (*Achlys triphylla*), western Dutchman's-breeches (*Dicentra formosa*), foamflowers (*Tiarella laciniata* and *T. unifoliata*), several western miterworts (*Mitella*), goat's-beard (*Aruncus sylvestris*), ocean spray (*Holdiscus discolor*), a violet (*Viola glabella*), water parsley (*Oenanthe sarmentosa*), white-veined wintergreen (*Pyrola picta*), white-flowered rhododendron (*Rhododendron albiflorum*), false azalea (*Menziesia ferruginea*), little prince's pine (*Chimaphila menziesii*), deer-cabbage (*Nephrophyllidium crista-galli*) and swamp hedge-nettle (*Stachys mexicana*). The beautiful California rhododendron (*Rhododendron macrophyllum*) has extensive colonies on Vancouver Island and near Hope, B.C. On Vancouver Island are the only stations in Canada for such representatives of a California-type flora as a member of the Lily Family (*Brodiaea hyacinthina*), a member of the Poppy Family (*Meconella oregana*), two members of the Mustard Family (*Platyspermum scapigerum* and *Thysanocarpus curvipes*; a third, *Athysanus pusillus*, is also found here and near Kootenay Lake), and a violet (*Viola nuttallii* var.