

THE FORESTS OF THE PACIFIC
COASTS OF BRITISH COLUMBIA
AND SOUTHEASTERN ALASKA

BY

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The narrow coasts of British Columbia and Southeastern Alaska are precipitous with the glaciers and the mountains rising sheer from the ocean's edge. The western slopes of the coastal ranges are covered with forests of great density and in their general uniform facies remind the plant geographer of the forests of northern Finno-Scandinavia. The American Pacific coast forests mentioned are found from tide-water up to an elevation which varies from 2500 to 4000 feet.

The breadth of these forests changes as the mountains advance or recede from the coast line. The unbroken, primeval character of these forests is one of the features which makes the inland waterways scenically attractive and beautiful enhanced by the great icefields or glaciers, which descend to the sea from the higher peaks covered with perpetual ice and snow. The United States Forest Service has wisely erected two national forests north of the boundary of British Columbia, where Southeastern Alaska geographically begins. These national forests are officially denominated the Tongass and the Chugach. The Tongass National Forest extends from Dixon Entrance (Sound) northward in one direction to the head of Lynn Canal and northwestward to a line which extends east and west above the opening of Glacier Bay, where it joins Icy Strait. This forest covers the western slopes of mainland Alaska and the larger and smaller islands off the coast. The Chugach National Forest extends from Bering Glacier and Controller Bay around Prince William Sound and the head of Resurrection Bay to Cook Inlet. Each forest has been mapped by the U. S. Forest Service.

Both national forests are fairly uniform in their facies and floral composition, but the character of the terrain has produced differences which the forest ecologist, who studies these forests in detail, must

recognize as of scientific import. In a general survey, such as the writer made in the summer of 1926, he was impressed by the fairly uniform character of the forests with a few coniferous trees, as the dominant species from south to north. If the dominant trees are alone considered, it is difficult to distinguish forest types, but if the principle of forest types elaborated by Prof. A. K. CAJANDER for the Finno-Scandinavian forests is applied, it is probable that the forest ecologist will find it possible to delimit in Alaska and British Columbia various facies, or types of forest lands. Professor CAJANDER distinguished the various forest types of the Finno-Scandinavian taiga by the herbaceous and small woody plants found associated with the dominant trees, using the different associations of herbs and under shrubs, as indices of the types. He found the plant associations varied from place to place, and thus he was able to distinguish a variety of forest types.

The following observations made in the forests of British Columbia and Southeastern Alaska during the summer of 1926 are offered as a contribution to the important investigation suggested above. The dominant trees in the two Alaska national forests are the aeroplane, or Sitka spruce (*Picea sitchensis*) and the coast hemlock (*Tsuga heterophylla* = *T. Mertensiana*). Associated with these two species, which constitute the bulk of the forests, are Alaska cypress (*Chamaecyparis nootkatensis*) and the lodgepole pine (*Pinus contorta*), which pine tree was found in the forest near Ketchikan, and here and elsewhere seems to occupy swampy, or dry and gravelly situations. The Sitka alder (*Alnus sitchensis*) was collected in the forest at Seward and on Mt. Tripod, according to field notes based on herbarium material made in the summer of 1926. The larger shrubs, then collected, comprised *Sorbus sitchensis*, *Ribes acerifolium*, *Echinopanax (Fatsia) horrida* (devil's club), *Sambucus racemosus* (red-berried elder), *Viburnum pauciflorum* (squash berry), *Cladothamnus pyrolaeiflorus* (copper bush), *Gaultheria ovatifolia*, *G. shallon*. The under shrubs comprised *Ledum groenlandicum*, *Menziesia ferruginea*, *Phyllodoce glanduliflorus*, *Vaccinium ovalifolium*, *V. parvifolium* and

V. uliginosum. The western skunk cabbage (*Lysichiton Kamtschatcense*) occupied wet, swampy places in the forests, while the conspicuous forest herbs were *Streptopus amplexifolius*, *Veratrum viride* (var. *penduliflora* Harshberger, new variety), *Aconitum columbianum*, *Aquilegia formosa*, *Aruncus sylvester*, *Tiarella trifoliata*, *Osmorrhiza divaricata*, *Cornus canadensis* (in mats), *Pyrola secunda* and *Pedicularis parviflora*. The ferns of these coniferous forests were *Adiantum pedatum*, *Athyrium felix-femina*, *Dryopteris Linneana*, *D. oreopteris*, *D. phegopteris*, *Struthiopteris spicant* with the club mosses *Lycopodium clavatum* and *L. sitchense*. Among the mosses, two were prominent in these forests: *Pleurozium Schreberi* and *Rhytidiadelphus lorens*.

It is with these floral elements that the forest ecologist must construct the various forest types, which exist on the western coasts of Alaska and British Columbia. He will determine whether the principle of forest types elaborated by Professor CAJANDER will be applicable in their delimitation.

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