A wet slope between two of the cliffs gave us *Castilleia pallida*, var. *septentrionalis*, *Juniperus communis*, var. *nana*, *Carex atrata*, var. *ovata*, *Avena striata*, *Agropyron violaceum*, *Cardamine bellidifolia*, *Potentilla fruticosa* and *Galium Kamtschaticum*.

Monday, July 16, we broke camp and started upon our return down the mountain by the same path. I do not recall that on that day we had rain before late afternoon, but certainly on the day following, when we rode from the Bell Camp to Lunksoos, there came a flood; and we were compelled again to remain in the open wagons rather than wade through many pools and swollen brooks. In skirting the edge of the "Depot Pond," and at some other places, we collected some notable Carices; and along the gravelly bank of the Wassataquoik we saw much *Prunus pumila*, quite unlike our Sand Cherry of Massachusetts, *P. cuneata*, with which it has been confused.

Tuesday night we reached Lunksoos, which now seemed a most luxurious abiding place. Thence by way of Stacyville, through farewell torrents of rain, submerged forests and corduroy roads, our little party dispersed, in the diverse directions in which pleasure or duty called.

A COMPARISON OF THE FLORAS OF MT. WASHINGTON AND MT. KATAHDIN.

EMILE F. WILLIAMS.

MT. KATAHDIN lies 161 miles northeast of Mt. Washington. The latitude of its highest summit, the West Peak, is 45° 53′ 40″. The latitude of Washington is 44° 16′ 25″, a difference of 1° 37′ 15″, about 112 miles. The altitude of Mt. Washington is 6300 ft. above the sea; the most reliable determination of the altitude of the West Peak of Katahdin, made by Prof. M. C. Fernald, gives it a height of 5215 ft. above sea level. Both mountains have a similar geological formation, almost entirely granitic.

As might be expected, the general conditions for plant life are very similar on these mountains. Both are surrounded by vast areas of wooded country, both are abundantly watered by innumerable springs and rivulets, which well up out of the ground at very great elevations and both ranges are sufficiently high and extensive

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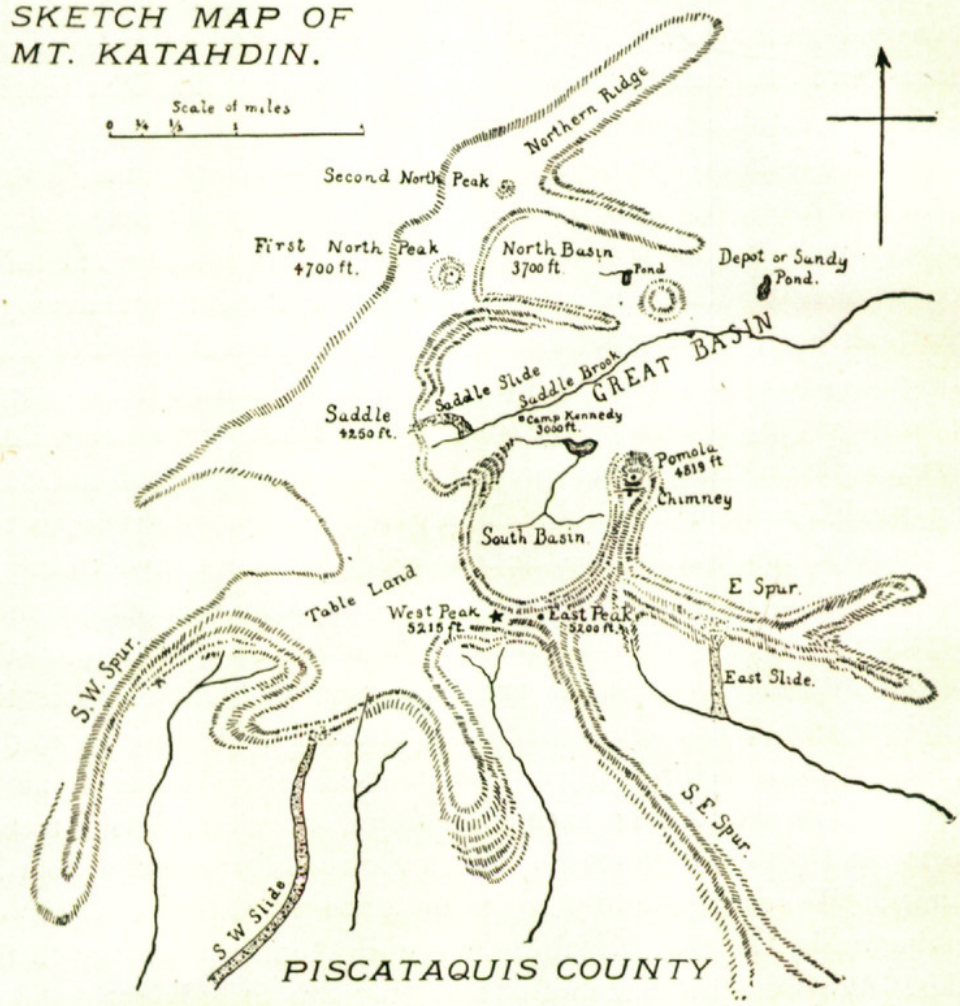
HEAD OF NORTH BASIN, MT. KATAHDIN.

to possess a considerable subalpine and alpine region. On the summit ridges of both the botanist can revel in miles of the stony wastes and upland bogs that yield the rare treasures of high mountains, while his spirits are uplifted every time he raises his eyes from the ground by the soul stirring scenery displayed before him on all sides. Indeed, if the botanist be a mountain lover as well, — and what botanist is not, — he will prefer Katahdin for its ruggedness, its summits as yet undefiled by the handicraft of man, and its magnificent panorama of numberless lakes and streams, in which last feature it is conspicuously superior to Washington.

While the general conditions of both mountains are alike, Katahdin differs from Washington in many minor particulars. It is distinctly more arctic, for one thing, although it is only 112 miles more northerly. The timber line, which on Washington averages 4000 ft. altitude, barely averages 3100 ft. in the Great Basin of Katahdin and 2200 ft. on the southern slopes; this last being partly due, however, to their excessive steepness. The entire summit ridge in fact, while in the greater part of its length somewhat flat, falls away precipitously on all sides. There being no easy grade to the summit of Katahdin, like the Fabyan ridge or the Crawford range of Washington, the flora of its slopes is found in scantier patches, the plants themselves being smaller and more stunted than on the latter mountain. Prevalent as are the fogs and abundant as is the precipitation on Washington, Katahdin appears to be an even wetter mountain. This is probably due to its isolation. It lies alone in the vast Maine wilderness, except for some ranges of lesser mountains to the North and Northwest, so that clouds form freely about its summits. We can generally count on good collecting weather on Washington in July; on Katahdin, not until August according to the guides. We were on Katahdin from July 8th to July 17th and it rained every day but one. During a ten days' stay in the immediate neighborhood, in February of this year, the mists gathered over the summits every day, pouring snow into the ravines, just as they had poured rain over us last summer. The local guides assured us that snow reaches a depth of eighteen feet in the Great Basin, where our camp was located, — truly an arctic condition of things!

The summit ridge or backbone of Katahdin, as will be seen by a glance at the accompanying map, is shaped like a huge fishhook, the shank of which lies toward the Northeast and the opening of the

hook to the east. The two highest summits, the West and East Peaks, which differ in altitude about 15 ft., and are about one third of a mile apart, are at the base of the hook. The point of the hook, which turns north from the East Peak is terminated, first by a little tower-like crag called the Chimney and then, across a deep and narrow notch, by a precipitous peak called Pomola (4819 ft.) named



from the Indians' demon of the mountain. Pomola according to them is responsible for the bad weather with which the intruding mountain climber is assailed, this being the divinity's method of showing his displeasure at the invasion of his domain. Beyond the West Peak (5215 ft.) the ridge curves in an arc of a circle to the North Peaks, of which there are two close to each other. The depression between the West Peak and the North Peaks (4700 ft.) is called the Saddle, the lowest part of which is at 4250 ft. altitude. The Tableland lies between the West Peak and the Saddle, and is

an almost plane surface, inclined to the northwest at an angle of from five to seven degrees and having a length of a mile and one half, with an area of more than five hundred acres. It is a botanical garden of the most generous proportions.

Beyond the North Peaks, the ridge continues at a lower level for three miles and then it drops abruptly into the foot-hills, which are heavily wooded. The entire length of this ridge above timber land, is eight and one half miles. The inside of the hook forms the Great Basin, an elevated ravine at an average altitude of about 3000 ft., three miles long from North to South by one and one half miles wide from east to west. Under Pomola and the East and West Peaks, the walls of this Basin are well nigh vertical and form a smaller amphitheatre of sublime proportions, with a northern exposure, called the South or Chimney Basin within which is a small lake called Chimney Pond. Near the mouth of the Great Basin on its west side, two secondary ridges three quarters of a mile apart, which abut on the main ridge on either side of the North Peaks, form an elevated ravine with a southeastern exposure called the North Basin. The floor of this North Basin is barren of timber, its elevation, about 3700 ft., is several hundred feet greater than that of the South Basin and the conditions for plant life are similar to those on the summit ridge.

The back wall of this ravine is very wet and being exposed to the sun and less steep in most places than the back wall of the South Basin, it afforded us almost the best collecting ground we found on the mountain.

It is not as yet possible to make an accurate botanical estimate of the flora of Katahdin. The range is so vast that many seasons will be required before we know approximately the bulk of its flora. Our survey embraced only some of the main features of the mountain; the two Basins and their walls, the summit ridge from the Saddle around to Pomola, including a part of the Tableland with the West and East Peaks, and a limited area about the North Peaks. We could do nothing on the vast outer slopes of the hook, nor on the long Northern Ridge.[1] The roughness of the work and the great

[1] A large basin, as yet little known, has been seen by explorers from the Sourdnahunk range (to the northwest of Katahdin). This basin lies in the western wall of the North Mt., and is reached with extreme difficulty from above. Those who have explored it report a deep abyss surrounded by precipitous walls, and with a pond in its floor fed from above by a high waterfall. Owing to lack of definite data this basin is not represented on the accompanying map.

distance from a base of supplies, make a thorough botanical exploration of the whole mountain a labor of many years. We noticed however with interest, on the one hand the presence of many plants not found on Washington (several being species new to Maine) and, on the other, the unaccountable absence of species common enough on that mountain. It is more than probable that most of these will turn up in time. Our work was confined to the alpine and sub-alpine region of the mountain and it is this region only that we consider.

Perhaps the most notable plant peculiar to Katahdin is *Saxifraga stellaris*, L., var. *comosa*, Willd. This was found in Joseph Blake's and in Scribner's original stations, the latter in the interstices of great rocks north of the West Peak, the former in the notch between the Chimney and Pomola, where a few specimens only were collected by Mr. Fernald.

On the eastern slope of the Saddle, Mr. Fernald collected an immature *Epilobium* which appears to be with scarcely any doubt *E. anagallidifolium*, Lam. In the North Basin we collected an abundance of *Comandra livida*, both in flower and fruit. This has been found hitherto in New England only on Mt. Mansfield in Vermont and on Saddleback and Abraham in the Rangeley Lakes country. Singularly enough a very dwarf *Kalmia angustifolia*, with flowers of the brightest hue, abounds there. On Washington we have never seen it, except on the foot-hills. We also found in the North Basin, *Larix Americana*, a few trees, absolutely prostrate, but spreading over ten or twelve feet scarcely six inches from the ground. *Juniperus communis*, var. *nana*, Loud. (the first station in the eastern United States) and *Eriophorum alpinum* are on the ledges of the back wall. This back wall, in fact, was especially rich in lowland plants, which owing to the dampness and southeastern exposure attain here a remarkable elevation. Many of these were found at 4000 to 4500 ft. altitude. We noticed among the members of this adventurous colony: *Lycopodium clavatum*, *Osmunda Claytoniana*, *Pteris aquilina*, *Carex leptalea*, *Carex communis*, *Carex flava*, *Danthonia spicata*, *Smilacina racemosa*, *Andromeda polifolia*, *Aster umbellatus*, *Aster Radula*, *Aster acuminatus*, *Diervilla trifida*, *Potentilla fruticosa*, *Prunus Pennsylvanica*, *Prunus Virginiana*, and *Viola Selkirkii*. It seemed strange indeed to find these plants in company with *Diapensia Lapponica*, *Bryanthus taxifolius*, *Arnica Chamissonis*, and *Epilobium Hornemanni*.