PART TWO

THE CLEARWATER VALLEY

The following pages are excerpted from the 2nd edition of Nature Wells Gray: A Visitors' Guide to the Park, by Trevor Goward © & Cathie Hickson (1995). Most of the text is current, though a few important changes should be noted:

p. 125, 128: The trail between the Ray Farm and the Ray Mineral Spring has been rerouted, and now offers a quite fascinating (if seasonally somewhat buggy) circle trip for the naturalist. Follow the signs.

p. 134: The return loop trail from Myanth Falls via West Lake has been rerouted, and can now be heartily recommended. Good work B.C. Parks!

Note: Road and trail conditions in the Clearwater Valley are subject to change. Please check with the Wells Gray information Centre (250-674-3334) for current conditions. The authors cannot accept responsibility for any inconvenience or damages incurred through the use of this posting.

54.0 km
(33.5 miles)

THE HORSESHOE

As a rule, the Clearwater River is a river in a hurry. At the Horseshoe, however, it slows to inscribe a series of meanders, the most impressive of which occurs at this mileage. Here the river doubles back on itself, describing an almost complete circle three km in circumference.

The unconsolidated sands and gravels which underlie these meanders, and make them possible, were deposited 11,000 or 12,000 years ago by the meltwaters of stagnating glaciers. Since then the Clearwater has

This aerial photograph of the Horseshoe, the Ray Farm, and Alice Lake predates the park road. Moose Meadows is located on the tongue of land to the west (left) of the Horseshoe. (BCE: BC 78099 087)

snaked to and fro across this giant sandbox, at each pass wearing a little deeper into the valley floor. To date the river has entrenched itself at least 40 m into the gravels.

Because the gravels are extremely pervious to water, the soils which cover them tend to be well drained and very dry. In places this can make it difficult for forest trees to establish. At the Horseshoe you'll find some of Wells Gray's largest lowland open spaces. Of these, Moose Meadows, at roughly ten ha in size, are the most accessible.

HORSESHOE LOOKOUT TRAIL

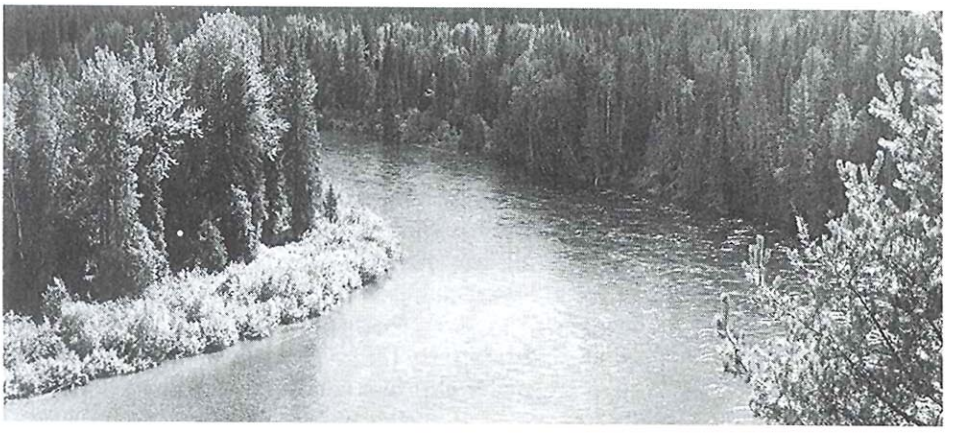
30 min (.5 km) return.
Elevation change: 25 m.

- RIVER WATCHING
- HAZELNUTTING

The walk to Horseshoe Lookout is a pleasant ramble along a high bank overlooking the Clearwater River. A few metres from the road the trail forks. Take the right-hand fork, following the trail as it first climbs, and then descends over a series of ever-lower benches. Each bench represents an old riverbed, left behind from an earlier pass of the river as it cut through the glacial deposits.

The Lookout is located about ten minutes from the road, and is unmarked; it offers a fine view over the Clearwater River and, to the south, Pyramid Mountain (left) and Mosquito Mound (right).

Even today the river continues to shift and change. Running faster on the outside of the horseshoe bends, and slower on the inside, the current is simultaneously cutting away at the former bank and depositing on the



A bend in the ever-changing Horseshoe. Willow colonizes the newly available shoreline. (TG)

Hazelnut nuts usually come in pairs. (RBCM)

latter – a process clearly visible here. Notice how the vegetation on the inside of the bend is composed of such early colonizers as willow and various herbs; these reflect the constantly changing shoreline.

Continuing thus, the river will in time cut through the neck of the Horseshoe, now roughly 100 m across; when it does so it will have left behind a sausage-shaped lake called an oxbow.

The well-drained soils provide ideal growing conditions for the Hazelnut (*Corylus cornuta*), a shrub here at its most abundant in the Clearwater Valley. The leaves of the Hazelnut resemble Birch leaves, but are lightly furry. Also characteristic are the eared fruits which, once husked, resemble the familiar European filbert, to which they are closely related. Every August, the Red Squirrel harvests and stores the Hazelnuts for winter use.

Over the water fly Rough-winged Swallows and Vaux's Swifts, the former nesting in the sandbanks above the river, the latter probably nesting in dead Cottonwoods near Moose Meadows.

- FLOWER POKING
- ANIMAL TRACKING

MOOSE MEADOWS ROUTE

2 hr (3 km) return.
Elevation change: 50 m.

The hike to Moose Meadows leads past some fabulous river scenery, but involves both bushwhacking and direction-finding. Carry a map and compass for this one. Mosquito repellent wouldn't hurt, either.

From the Horseshoe Lookout, another 15 minutes along the top of the cutbank will bring you to an obvious opening on your right (i.e., away from the river). This is the first of two large clearings which together make up Moose Meadows. Pay attention as you enter it; doing so may help you to find your way out again.

Moose Meadows provide habitat for several drought-tolerant plants elsewhere found mostly in disturbed sites. Among the most common are Arctic Lupine (*Lupinus arcticus*), Spreading Dogbane (*Apocynum androsaemifolium*), Kinnikinnik (*Arctostaphylos uva-ursi*), Bastard Toad-flax (*Geocaulon lividum*) and Blueleaf Strawberry (*Fragaria virginiana*). Also growing here are many shrubby species, including Soopolallie

(*Shepherdia canadensis*), Oregon Grape (*Mahonia aquifolium*) and Saskatoon (*Amelanchier alnifolia*).

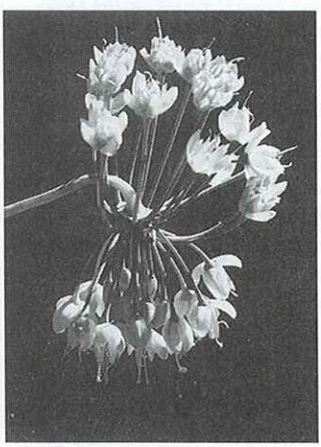
Look also for extensive mats of reindeer lichens (*Cladina* spp.). In northern Canada these pale, shrub-like lichens provide an important winter food for hundreds of thousands of Caribou. In Wells Gray the reindeer lichens are sparse, and so the Caribou depend instead upon tree-dwelling hair lichens (*Alectoria* and *Bryoria*).

Although the river lies just west of Moose Meadows, it is largely concealed by a curtain of Black Cottonwood and White Spruce, growing in response to the wetter ground along the river's edge. Penetrate this curtain, and at low water the river shoreline makes for a rather pleasant walk.

Here watch for the drooping flowerhead of the Nodding Onion (*Allium cernuum*) – a species readily identified by its familiar aroma. Other riverside flowers include the Meadow Arnica (*Arnica chamissonis*) and the Streambank Butterweed (*Senecio pseudaureus*), whose daisy-like flowers can be found blooming any time after early July. Opening at the same season are the five-spurred blossoms of Red Columbine (*Aquilegia formosa*).

The sand bars are also a good place to look for animal sign, including Black Bear tracks, Canada Geese droppings, Beaver workings and perhaps the shed antlers of a Moose. In September and October, Chinook Salmon spawn in the river here. And then die. Their rotting bodies attract all manner of carrion feeders, especially Black Bear, Foxes, Coyote, Bald Eagles and Ravens.

The reindeer lichens (Cladina *spp.*) *come in four species in Wells Gray. Nowhere are they more abundant than at Moose Meadows.* (TG)



How did the Nodding Onion (Allium cernuum) *find its way to the banks of Clearwater? Could it be an artifact from early Indian encampments?* (TG)

No track more resembles a human footprint than that of a bear. Here a Black Bear has crossed paths with a Mule Deer. (TG)

54.5 km
(33.9 miles)

- BIRDWATCHING
- FLOWER LOOKING
- PERRIER SIPPING
- MAMMAL TRACKING
- BATTING

RAY FARM TRAIL

1 hr (1 km) return.
Elevation change: 20 m.

THE Ray Farm, only a ten minute walk from this mileage, provides a satisfying focus for an afternoon outing.

Acting as focal centre to the farm are the mineral springs just north of the trail below the farm house. The springs are a bright orange gash in the earth, out of which flows a steady stream of water. Anyone who tastes this water is unlikely to forget the experience: you sip it; it sips back.

To the local wildlife, these springs are a kind of

The Farm that John Built

John Bunyan Ray, born in North Carolina in 1878, arrived on the scene west of here in about 1909 – just in time to help the Canim Lake Indians overcome a serious outbreak of measles. John's advice to the band – to keep the afflicted in bed in a darkened room – was apparently efficacious. In gratitude the chief of the Canims gave him the band's traditional hunting grounds on the Clearwater and Azure Rivers.

John was not long in settling on the Horseshoe area as the future location of his wilderness homestead. Here he found abundant game, storybook fishing, fertile soil, and good growing conditions on a warm southwest-facing hillside. By the early 1920s, his farm would consist of six ha of pasture, a large vegetable garden, and about 30 ha of natural hay meadow.

Things went along quietly for this crusty bachelor until the early 1930s when, in rapid succession, he applied for Canadian citizenship, filed for ownership of the 130 ha on which his farm is located, and, in 1932, at the age of 53, married 20 year-old Alice Ludke.

For the next 14 years John and Alice lived on the farm, raising three children, and maintaining a self-sufficient life style much in the tradition of British Columbia's earliest pioneers. Ducks, cows, goats, sheep and chickens are only a few of the animals they kept on their farm. The old garden plot and orchard near the house can still be recognized by the grapes, asparagus, raspberry bushes, strawberry plants, and apple trees of several varieties that grow there. A few metres away stands a lilac bush, still providing a fragrant accent every spring.

Of course the Rays also took advantage of the "edible wild." In spring, they sometimes tapped Douglas Maple (*Acer glabrum*) and Paper Birch as a source of syrup. In summer they picked berries: first Blueleaf Strawberries (*Fragaria virginiana*); then Saskatoons (*Amelanchier alnifolia*); later Bitter Cherries (*Prunus emarginata*) and Dwarf Blueberries (*Vaccinium caespitosum*); and finally, in October, Bog Cranberries (*Vaccinium oxycoccus*).

Many stories have grown up around John Ray. Most are probably apocryphal, embroidered and expanded upon over years of telling. Yet all reveal John as a shrewd, practical man, perhaps not always easy to get along with, but never lacking in originality and plain horse sense. For more, check the appropriate pages in the books by I. Dekelver, H. Hogue, H.E. Johnson and R. Neave, listed in Appendix 1, page 213. All should be available at the Wells Gray Visitor Centre.

The roof of the Ray farm house was modelled on the traditional kekuli, or pit house, of B.C.'s interior native peoples. (TG)

wilderness drug store. According to need, Mule Deer, Moose, Black Bear, and others come here to supplement their diets with such essential minerals as calcium, sodium, magnesium and iron. Look for their telltale tracks in the mud.

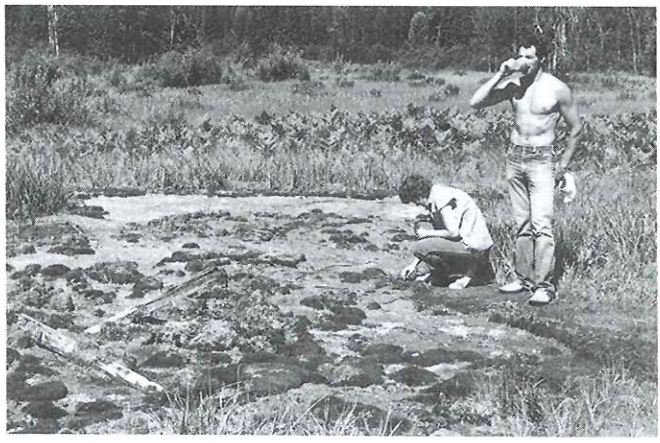
Also attracted to the springs are various birds, especially finches. Finches are primarily seed eaters; lacking certain important minerals, they flock to the springs in great numbers. Evening Grosbeaks, Pine Grosbeaks, Pine Siskins and Red Crossbills are a few of the more common finches to watch for.

The springs themselves are broadly encased in deposits of a white, chalky rock called travertine. Travertine forms when the calcium present in the water precipitates out to encrust the mosses (*Cratoneuron commutatum*) that are so abundant here. As the moss grows it tends to dam the water, so causing it to rise and thus encrust more of the moss. The result is a series of terraced pools. It is even possible to find patches of travertine which still preserve, in crude outline, the original stems of the moss.

John Ray is said to have considered these springs his fountain of youth. Today visitors are sometimes inspired to tone down its bicarbonic bite with the addition of flavour crystals. The result, in small quantities, is a refreshing Wells Gray "soda pop." In large doses, it is a marvellous natural laxative.

Just north of the springs, a wet meadow provides habitat for some interesting wetland plants. Among the more conspicuous is the White-rein Orchid (*Platanthera dilatata*), whose knee-high spikes of ivory flowers release, in mid July, a delicate perfume surely as fragrant

These pocked muds suggest a steady clientele of Moose, Mule Deer and other animals at the Ray Farm mineral springs. Such places are sometimes called "mud newspapers." (TG)



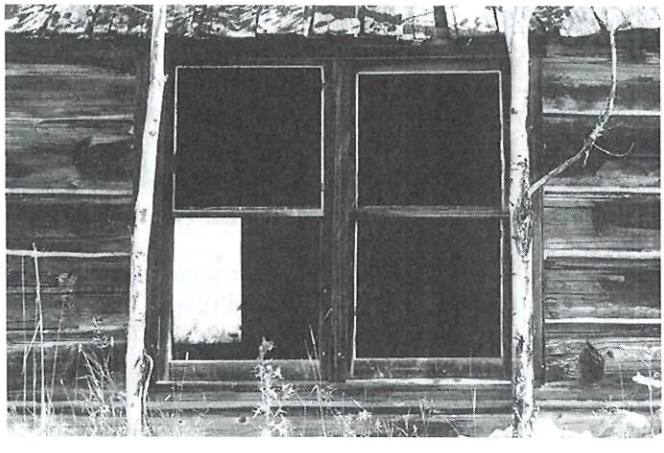
The waters in these springs have travelled many kilometres under lava flows, and over Kaza Group Limestones; the dissolved minerals they contain impart a distinctive effervescence. (TG)

as any in nature. Nearby, another treat for the nose is the familiar scent of Field Mint (*Mentha arvensis*).

The drier meadows above the springs support scattered colonies of Columbian Ground Squirrels. Recognize these "Mountain Prairie Dogs" both by their abrupt, ear-piercing barks, and by their rusty underparts, here colour-matched with the orange mounds at the entrance to their burrows.

Just north of the springs stand two Black Cottonwoods – favourite perches of the Red-tailed Hawks which hunt the Ground Squirrels, and which raise their young just to the east of here. As they soar overhead, listen for their husky, sibilant "CLEerr CLEerr," repeated over and over.

Another focus is provided by the old farm house, which provides an annual nesting site for Wells Gray's northernmost colony of Barn Swallows; the nests are orange in colour, having been built of mud scooped



Through these windows fly Barn Swallows by day and Little Brown Bats by night. The Ray farm house provides shelter for both. (TG)

from the mineral springs. Add a little grass, mix with spittle, and voilà: home for the summer.

Also living in the house is a colony of Little Brown Bats; look for them in the peak of the roof directly above the pile of bat droppings that grace the centre floor. In dry weather the bats are well hidden among the shingles, but when it rains they crawl out for protection onto the rafters, where they can easily be seen. Theirs is a strange, toothy grin.

Continuing from the farm house, the trail leads north past a small creek and then crosses the upper end of the farm to connect, half an hour ahead, with the Ray Mineral Spring trail (see km 56.1). Just beyond the creek, a short spur trail climbs the hill to a grave site. Here lie John and Alice Ray: buried beneath the land they cleared, and among the conifers now growing up to reclaim it.

ALICE LAKE

55.8 km
(34.7 miles)

- BIRD WATCHING
- FLOWER LOOKING
- PERRIER SIPPING
- MAMMAL TRACKING
- BATTING

JUST north of the Ray Farm, the park road descends to the outlet of Alice Lake, named for John Ray's wife. A short spur road provides an entry point from which to launch a canoe.

On the evening of July 13, 1977, a Beaver dam broke at the outlet of Alice Lake. The flood thus released swelled Alice Creek to an angry river which uprooted trees and washed out the bridge at this mileage. By 10:00 that night the lake had dropped two m, and traffic on the park road was blocked by a chasm nine m across and three m deep.

Some time later the Beaver left the lake. They had in any case been subsisting on a scanty fare of shrubby plants (especially Hardhack [*Spiraea douglasii*]), and now with their lodges high and dry there was little reason for them to remain. The dam was not rebuilt, and the lake has held to its dam-break level ever since.

Two m of vertical drawdown translated to as much as eight or ten m of exposed lake bottom. This new shoreline was soon providing habitat for a myriad of herbaceous plants, including Hemp Nettle (*Galeopsis tetrahit*), Stinging Nettle (*Urtica dioica*) and, to take the sting away, Bracken (*Pteridium aquilinum*). All of these can be found here to this day.

Latterly the herbs have been losing ground to shrubby thickets of Hardhack (with its spires of tiny

The Barrow's Goldeneye (RBCM)

In time, the shoreline of Alice Lake will once again support stands of Black Cottonwood; and when it does, the Beaver will return. (TG)

pink flowers), Thimbleberry (*Rubus parviflorus*, with its large "maple" leaves) and, in places, Red Elderberry (*Sambucus racemosa*, with its compound leaves). The pre-1977 shoreline is, however, still easily seen.

Every summer the thickets beside the lake come alive with birds of many different species, including Yellowthroats, Song Sparrows, Wilson's Warblers and, less easy to see, Catbirds. A pair of Common Loons and another of Barrow's Goldeneyes nest on the lake itself in most years.

Growing in the shallows of the lake itself are two aquatic plants with snow-white flowers. The first of

Toad on the Road

Like Wells Gray's Grizzlies and Wolverine, Western Toads (*Bufo boreas*) can be ferocious predators, though they tend not to hunt the same prey. And, like the Caribou and Moose, they "range" from the forested valleys to the open meadows of the subalpine. Some toads have even been noted at 2500 m, near the summits of the Trophy Mountains. Maybe they were sightseeing.

A good reason for the Toad's success is its undemanding nature. Toads require but few things in life: soil or leaf litter to escape the hot sun and the winter cold; shallow, still bodies of water in which to lay their eggs; and insects small enough to be crammed down their throats. Their tough leathery skin offers some protection from the sun, so they can venture farther from water than other amphibians.

Toads begin breeding as soon as the lakes (e.g., Alice, Shadow and Placid) are relatively ice-free. You'll recognize the males by the feeble whimpering sounds they make at this time. Breeding is their only social activity of the year; the rest of the time they are solitary hunters.

It is hard to avoid the feeling that toads are ugly – and proud of it. To confirm this, you may wish to examine one. Note the short, squat body, the undersized legs, and the numerous unsightly warts and glands on the leathery skin. Then ignore these features; they are simply the characteristics that distinguish toads from the closely related frogs, which possess smooth skin and large,

The Western Toad (Bufo boreas) *is a survivor.* (BI)

these is Water-plantain (*Alisma plantago-aquatica*), easily identified by its "plantain" leaves and spray of rather showy, three-petalled blossoms. The second is Water Buttercup (*Ranunculus aquatilis*), with its small, five-petalled flowers floating star-like upon the surface of the water. By what means did these plants find their way to lonely Alice Lake? One likely possibility is that they flew in on the muddy feet of migrating ducks.

In mid July the year's hatch of tadpoles, very abundant in Alice Lake, metamorphose into thousands of young Western Toads. In some years the adjacent park road then becomes peppered with their flattened bodies [see: TOAD ON THE ROAD].

powerful hind legs.

Now pick the Toad up. It will not bite. Nor will it cause warts. Hold the Toad at face level with the front end towards you. Here is an expression that only the owls can compete with for pure arrogance. As you study it, the Toad will doubtless pee on you. Many herpetologists suggest that this is a defence behaviour, but it is hard to avoid the feeling that it may also be an expression of contempt.

You will probably have noted that the Toad inflated itself while you were holding it, but you may not have noticed that it at the same time released a whitish secretion all over your hands. DO NOT taste this secretion, nor rub it in your eye to see if it feels good. This is poison – not life-threatening, but a poison nonetheless. Always wash your hands after handling toads.

If you happened to have gripped the Toad gently behind the front legs, you may have heard a rapid chirping or clicking noise. This is a release click; the only way that male Toads can let other equally near-sighted and undiscriminating male Toads know that they have just proposed marriage – or something similar – to another male Toad. In more natural conditions, the offending Toad would release its grip. If you do not hear a release click, inspect the Toad's expression carefully. What you see may be more than just arrogance and contempt. It may be love.

Harry Parsons

56.1 km
(34.8 miles)

- PERRIER SIPPING
- LICHEN LOOKING
- BIRD LISTENING

RAY MINERAL SPRING TRAIL

1 hr (2.2 km) return.
Elevation change: 25 m.

THE waters that emerge from the cone-shaped Ray Mineral Spring, alias "the Soda Fountain," are often favourably compared to Perrier or Vichy Water – bottled in Europe for the connoisseur. On the other hand, they are also sometimes likened to Eno or Bromoseltzer. According to taste, therefore, you'll either bend down for a second sip, or else stand up and make faces.

This hike can be completed either as a return trip or as a circle loop. Should you decide to go the latter, allow at least two hours, and be prepared to come out at the Ray Farm (km 54.5), and then to walk the shores of Alice Lake 1.4 km back to your vehicle.

For the first 100 m the way is steep, but soon the trail levels off, traversing a broad sandy bench. Nearby is Lone Spoon Creek; here listen for various cascading bird songs, including those of the American Dipper, the Winter Wren and, especially, the Northern Waterthrush: "Wheatwheatwheat Sweetsweetsweet Chewchewchew." A more breakfast-cereal-commercial-like song would be hard to imagine.

About 20 minutes from the road, the trail enters a forest of enormous White Spruces: some of the most ponderous in southern Wells Gray. On their branches, and no less ponderous in their own right, grow copious quantities of Lung Lichen (*Lobaria pulmonaria*).

To the uninitiated the Lung Lichen could easily be mistaken for the leaves of a maple tree. In fact, the Lung Lichen is not a plant at all. It's a lichen: a sugar-hungry fungus living in permanent association with a sugar-producing alga.

Most lichens die when subjected to urban air, especially air high in sulphur dioxide. The most sensitive species – including the Lung Lichen – falter at SO_2 levels as low as 30 micrograms per cubic m; by comparison, SO_2 levels in cities may average many times this concentration. Apparently the resulting greater acidity blocks the photosynthesizing activity of the algal partner, leaving the fungal partner with no source of energy. The superabundance here of Lung Lichen guarantees that the air is very pure. Breathe deep.

The lobes of the Lung Lichen (Lobaria pulmonaria) *resemble lettuce leaves.* (TG)

Eventually the trail forks. To reach the Soda Fountain, take the left fork and follow it into a clearing a few metres beyond. The right fork continues to the Ray Farm, now about 30 minutes ahead.

The Soda Fountain, like the springs farther south on the Ray Farm, owes its existence to the glacial and river sediments which underlie the lava on the hillside above. These porous sediments allow the ground water to percolate over great distances. As it does so, it dissolves various minerals from the sediments. Having reached the erosional edge of the lava flow, it bubbles to the surface with much the mineral flavour and colour of the local rocks.

In 1928 the geological survey party of J. R. Marshall investigated the mineral properties of the spring on the Ray Farm just south of here. The following materials (in parts per million) were found to be present in the spring water: sodium, 157.69; calcium, 243.00; magnesium, 86.00; iron, 2.20; aluminum 0.53; bicarbonic acid, 1499.73; sulphuric acid, 37.32; chlorine, 27.90; silica, 1.00; and oxygen for aluminums, 0.47. Given the similarity in taste between that spring and the Soda Fountain, a similar chemical composition doubtless applies here.

Rose galls are induced by the larvae of cynipid wasps (Diplolepis *sp.*) *In autumn, the leaves fall to the ground, where the pupae overwinter. They emerge the following spring as winged adults.* (TG)

BAILEY'S CHUTE TRAIL

1 hr (2 km) return.
Elevation change: 15 m.

57.0 km
(35.4 miles)

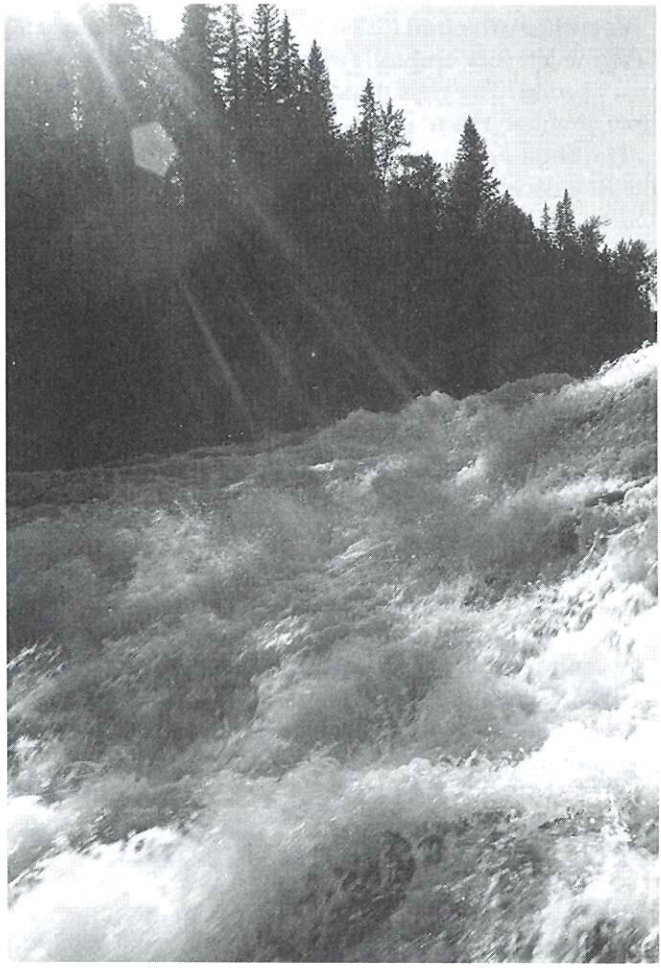
MYANTH FALLS TRAIL .....PAGE 133

- SALMON JUMPING
- PLANT WATCHING

At Bailey's Chute the Clearwater is at its unforgiving best. Here the current is accelerated to fire-hose intensity by a constricting nozzle of canyon walls. Here, too, the slate-green waters toboggan down a 30 m ramp of riverbed, then explode into a witch's cauldron of spray and thunder.

From Bailey's Chute, the trail continues upstream to Marcus Falls and Myanth Falls; allow an additional 30 minutes or 90 minutes, respectively, for a return hike.

The first 100 m of the Bailey's Chute trail hugs the park road; where the trail diverges, you'll notice an old abandoned road, last used in the early 1970s, and now colonized by a colourful weed garden. Look for Bracken



Unsurpassable Bailey's Chute (BCP)

Like all members of the Pea Family (Fabaceae), the Arctic Lupine (Lupinus arcticus) *has distinctive butterfly-like flowers.* (RBCM)

(*Pteridium aquilinum*), White-flowered Hawkweed (*Hieracium albiflorum*), Spreading Dogbane (*Apocynum androsaemifolium*), and Arctic Lupine (*Lupinus arcticus*). Taken together, these are the advance guard of forest succession. Already they are giving way to young shrubs and trees.

Certainly the most attractive of these early colonizers is Arctic Lupine, with its slender stems, its long finger-like leaves, and, rising above them, its raceme of blue and white "sweetpea" flowers. The Lupine inhabits open sites from valley bottom to treeline; nowhere, however, is it more at home than on sandy road edges that have lately been scoured by a passing grader blade. Lately means within the past six or eight years.

Like other members of the Pea family – vetches and peavines for example – the Lupine enriches the soil in which it grows: clinging to its roothairs are tiny bacterial nodules (*Rhizobium* spp.) which take nitrogen from the air (where it is very abundant), and introduce it into the soil (where it is relatively scarce). As the soil's fertility thus improves, other plants take hold, and eventually these replace their benefactor.

A number of other native flowers are also favoured by disturbance; one you'll certainly notice is the Columbia Lily (*Lilium columbianum*), with its tall stems topped with orange, nodding lily blossoms. Later these are replaced by upright seed pods, which resemble salt shakers.

Shortly the trail crosses Mink Creek; check here for the bright orange flowers of Touch-me-not (*Impatiens capensis*). After early August, try gently touching one of the swollen seed capsules; if ripe, it should explode at your fingertips. By such means the Touch-me-not disperses its seeds across the windless forest floor.

A little farther on, watch for the aptly named Corn Lily (or False Indian Hellebore: *Veratrum viride*). Its man-high stems, long, pleated leaves, and (in July) green, six-petalled flowers are a familiar sight in mountain meadows. In the valley, however, it is quite rare. Could its high country ancestors have been carried here by Mink Creek?

The Columbia Lily, also known as the Tiger Lily, has spots, but no stripes. (RBCM)

Reaching for the Top

From mid August through September, Chinook Salmon can be seen attempting to wrestle their way past Bailey's Chute. Early morning and late evening are the best times to watch them leap from the water, bodies quivering, only to be swept downstream again by the overpowering current.

Chinook are the largest of the Pacific Salmon, weighing in locally at between 8 and 22 kg. Those here were born four to six years ago on the gravel bars of the Horseshoe, a few kilometres downstream. They have passed the last several years ranging the Pacific Ocean as far north as the Aleutian Islands. About a month ago, they entered the Fraser River near Vancouver, and have since fought their way some 600 km upstream.

For most of the 4500-odd Chinook that return to the Clearwater River, it is enough to have reached the Horseshoe or other gravelly stretches suited to the production of a new generation. There they dig their nests (or redds) in the gravel, deposit and fertilize their eggs, and then die.

A few of the spawners, however, invariably overshoot the Horseshoe, and continue north until they are stopped by Bailey's Chute. These are the Simon Frasers of the salmon world; when the river has finally carved a navigable channel through the Chute, it is their kind that will be on scene to establish a new spawning ground somewhere above. Without them, salmon runs would never have returned to the Clearwater at the end of the Ice Age.

Skunk Cabbage or Swamp Lantern? A name is more than just a name. (RBCM)

The lily family (Liliaceae) contains many poisonous species, and the Corn Lily is one of the deadliest. It is a witch's brew of steroid alkaloids; when ingested, these may cause vomiting and diarrhoea, and drastically lower the blood pressure. In controlled concentrations the Corn Lily has medical applications, but uncontrolled it can kill. Remember: lilies are for funerals.

As the trail descends to the river, another plant catches the eye. This is the Skunk Cabbage (*Lysichitum americanum*), with its enormous fan-like leaves. It is a member of the Arum Family, but despite this distinctly tropical lineage, it is also among the hardier plants growing in Wells Gray. Its enormous yellow spathes push up even before the snow has melted in early spring.

The Skunk Cabbage is said to be edible at certain times of the year; eating it in mid summer, however, can be a painful experience, owing to the thousands of tiny calcium oxalate crystals contained in the leaves and roots. These may lodge in the mucous membranes, causing intense irritation and burning.

At Bailey's Chute the river is in uproar. The reason for all the commotion is the underlying bedrock, here similar to the Kaza Group phyllites and schists already discussed in connection with Trout Creek Canyon (km 29.9).

The tiny central flowers of the Dwarf Dogwood (Cornus canadensis) *open by means of a "popgun" mechanism. Check for this by carefully touching one with a small twig.* (RBCM)

The sunken "punchbowls" below the viewing platform were carved by the constant churning of pebbles caught in cracks in the rock. They are similar both in appearance and in origin to those at the Murtle River crossing (km 41.5).

Despite the tumult, the river bed is by no means devoid of life. If the water is low, scan the rock for splashes of colour: oranges, creams, greys and browns. These are crust lichens of various genera, including *Lecidea*, *Huilia* and *Porpidea*. Though submerged for much of the year, they hug the rock substrate, and so escape the worst of the current. At times, it is difficult to tell where the rock ends and the lichens begin.

MYANTH FALLS TRAIL

2.5 hr (5 km) return.
Elevation change: 20 m.

- PLANT WATCHING
- MUSHROOMING
- WATERFALLING

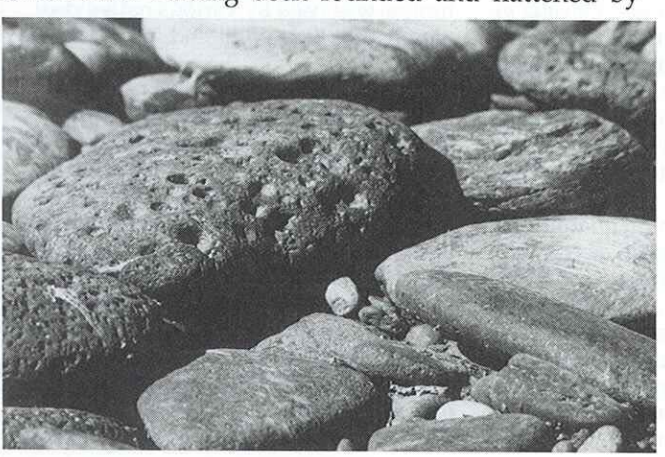
North of the Chute lie Marcus and Myanth Falls. After a few preliminary ups and downs, the trail levels to an easy hike through mature forests of Western Hemlock and, in wet spots, Western Red-cedar.

Along the way, watch for the glossy, heart-shaped leaves of Wild Lily-of-the-valley (*Maianthemum canadense*), a plant not known to occur elsewhere in the park, and apparently at or near the southern edge of its range. It seldom flowers in Wells Gray; when it does, look for a diminutive raceme of even more diminutive white flowers. This is the lily after which Myanth Falls is named.

At Marcus Falls the Clearwater River, here about 100 m wide, effects a short but impressive drop over a low escarpment. The viewpoint is fenced.

Centuries of undisturbed forest conditions have encouraged the establishment here of a full complement of mushrooms, conks, puffballs and other fungi. This fact becomes obvious after about the middle of August (later in dry years), when the fungi are fruiting [see: THREADS THAT BIND, page 134].

At trail end, the path emerges from the forest just below Myanth Falls onto a pebbly, but secluded, foreshore called Shingle Beach. Here is one of few good places in Wells Gray to soak up a little sun. While doing so, notice that many of the pebbles on the beach are arranged as though they were dominos that had just fallen over. Having been rounded and flattened by



Shingle Beach. Notice the holes (vesicles) in the water-rounded lava cobbles. (TG)

their journey downstream, each pebble rests on the back of the next pebble. This is called imbricate layering and is typical of stream- or river-lain pebbles.

On the river itself, stay alert for the American Dipper, Harlequin Duck, Spotted Sandpiper, and Common Merganser.

For the return hike, you may wish to head inland along the trail that threads past bear-beloved West Lake.

Threads that Bind

Fungi are everywhere. Even early in the season (before the fruits appear), you can demonstrate this to yourself by simply picking up a handful of decaying needle litter. Examine it, and you'll soon discover it is interlaced with innumerable branching threads. Some are white in colour, others orangish. All are fungi. For this is what fungi most resemble most of the time: tiny threads.

Technically the fungal threads are called hyphae; it is they that make up the mushroom "plant." Every now and then the hyphae mate, and soon thereafter produce what is commonly called a "mushroom," that is, the fruiting body of the fungus. If you could view a mushroom through a microscope, you would see that it is composed entirely of tiny hyphae: a remarkable job of biological knitting.

The sole purpose of mushrooms is to produce spores. Spores are microscopic seeds; so tiny are they that 10,000 might fit inside a bubble the size of a pea. A large puffball (for example, *Calvatia gigantea*, which grows at the Ray Farm, km 54.5) is said to release 1,500,000,000,000 spores. If placed side by side, these spores would circle the earth some 15 times, yet possibly only one or two of them will ever manage to produce a new puffball.

Given such astronomical quantities, it is not surprising that certain insects have evolved to feed upon the spores. Rove Beetles (*Bolitochara* spp. and *Gyrophaena* spp.) are among the most common of the spore-eaters. Check the gills of any old, delapidated mushroom for these tiny, brown insects, with their short wings and long, flexible abdomens.

In an aged forest such as this, wood-eating fungi have a field day. Because many of them feed on lignin – the woody stuff of trees – they are themselves of a hard, woody texture. And being woody, their fruiting bodies persist much longer than those of mushrooms, often several years. They also tend to lack stalks; emerging from tree trunks, they have no need to elevate their spore-producing surfaces into the air. Thus they resemble shelves or horse hooves, and are called shelf fungi, or sometimes bracket fungi or conks.

Perhaps the most easily recognized of the conks is the Indian Paint Fungus (*Echinodontium tinctorium*), here found growing from the trunks of old Western Hemlock trees. Look for a hoof-shaped fungus, the upper surface of which is blackish and copiously cracked, while below hang numerous long, densely packed teeth. If you carefully break off one of the teeth, you'll find it is a brilliant orange colour inside. Formerly this fungus was used by various native peoples as both face paint and insect repellent.

Another common conk is the Red-belted Polypore (*Fomitopsis pinicola*), usually found on dead trees. Here the upper surface is concentrically banded, with the outermost band a brilliant yellow-red. Each band represents a single year's growth, and for this reason it is easy to establish the conk's age. Notice the thousands of tiny pores which pit the pale lower surface; it is through these that the spores are released. If the conk is fresh, try detecting its sour, tobacco-like aroma.