

BLISTER RUST CONTROL (1922-1930)

My first task in the Bureau of Plant Industry was an extensive ecological study of the interior dry belt of British Columbia, Washington, Idaho and Oregon. The study was made during June to September 1922. The region investigated was bordered on the west by the Coast Range of central British Columbia and by the Cascade Range of southern British Columbia, Washington and Oregon, and on the east by the Rocky Mountains. W.E. Lawrence covered the southern part; V.H. Young of the University of Idaho Botany Department and I covered the northern part (Fig. 28). The study was made primarily to investigate the possibility of a natural barrier which might prevent or delay the eastward spread of the white pine blister rust. To be an effective barrier, the area between the mountain ranges had to be without the genera Ribes and Grossularia (currants and gooseberries), for they were the alternate host plants.



Fig. 28. 100 Mile House, British Columbia, summer 1922.

It was believed that if the distribution of Ribes was not too widespread, they could be eradicated. After several months of study we concluded that there were too many of the wild currants and gooseberries -- as well as those in people's gardens -- for successful eradication. It appeared that a possible alternative was through some white pine eradication work in selected areas.

I should mention an unusual experience I had while in Canada that summer. Dr. Young and I were working our way southward along the west side of Okanagan Lake in southern British Columbia. During the summer we had camped when necessary,

but preferred to stop where there were prepared meals and comfortable lodging. When our survey reached Okanagan Lake we began looking for a place to stay. By good fortune we inquired at a rather pretentious ranch house as to where we might find lodging while we surveyed that area. It happened to be the home of J.C. Dun-Waters, and we were offered food and lodging for the duration of our time in the area. We were given a guest house, and had most of our meals in the Dun-Waters home.

Dun-Waters had been a British army officer during World War I, and had retired to this place. The ranch was situated on a several hundred acre delta across the lake from the town of Vernon. An array of buildings served the many facets of the ranch (orchards, crops, livestock, etc.). All of this made for a very unique experience, but the most memorable feature was found in Dun-Waters' trophy house -- a mounted elk head with very large antlers, which we measured to be eleven feet three inches from tip to tip! Dun-Waters explained that he had received a special permit from the U.S. Secretary of State to hunt in Yellowstone National Park, and that is where he shot the elk. The entire collection of his hunting trophies had been willed to the Canadian National Museum in Ottawa. However, in the late 1920's the Spokesman Review of Spokane, Washington, reported that the Dun-Waters trophy collection had been destroyed by fire. I later contacted the museum in Ottawa and learned that they had not recorded the size of the huge elk antlers, so unfortunately there is no official documentation of what would certainly appear to have been a world's record.

Fifty-seven years later I returned to British Columbia on a nostalgia trip with my two sons, and retraced much of my travels during the survey in 1922. Included in this trip was a brief visit to the site of the Dun-Waters ranch (named Fintry -- most likely after a town in Scotland), and many of the features on the delta, both physical and cultural, were much the same as I had found them over a half century earlier (Fig. 29).

To return to 1922, that summer's work led to further study and research, and later, eradication procedures, that kept me occupied for the next eight years as an ecologist with the Office of Blister Rust Control. I was headquartered in Spokane, Washington, with field work primarily in northern



Fig. 29. W.A.R. and older son, Dwain, overlooking Okanagan Lake and the delta at Fintry, July 1979.

Idaho, and to a lesser extent, Washington, Oregon and British Columbia. Despite earlier conclusions that the eradication of *Ribes* was an impracticable means of providing a barrier to the spread of blister rust, it had been decided after further research to attempt to eradicate the wild currants and gooseberries from the white pine stands of northern Idaho. Camps were established in the forests, and crews were assigned to various camps to proceed with the eradication. I managed two one hundred-man camps in the Priest River drainage of northern Idaho during the summer months of 1923-25 (Fig. 30). By 1926 I had developed some theories about why currants and gooseberries were where they were, and was assigned to a research job to try to improve on our eradication techniques.

During these years I became friends with Robert "Bob" Marshall, of later Wilderness Area fame. I do not recall the exact circumstances of our first meeting, but it was in northern Idaho, and Bob was with the Priest River Branch Experiment Station of the U.S. Forest Service. He had recently graduated from Syracuse University with a major in Forestry. The western environment was new to him, but he was deeply interested in every detail of the outdoors. I learned immediately of the depth of his dedication to the forest and to everything that pertained to it. Every plant, every insect, every bird and every animal came under his eagle eye. His

questions were innumerable, but one never had to tell him the same thing twice. Unfortunately, he had developed a love for the philosophy and theory of communism. I found that our thoughts about nature dovetailed in nearly everything we said or did, but we disagreed rather violently regarding his political leaning.

Partly because of Bob's interest in my work in Blister Rust Control, his boss, Dr. Robert Weidman,



Fig. 30. Blister Rust Control Camp, northern Idaho.

assigned him temporarily to assist in my research. I assigned Bob with Lincoln Ellison to help assist in the necessary studies there at his current station, and conferred with Bob regularly during the next two field seasons.

I remember vividly Bob's passion for walking. One Sunday evening I arrived at the station where Bob was working and found that he and Ellison had left the station at daylight to climb three mountain peaks that day, and had not yet returned. They finally arrived about 11:00 p.m. from their reported 57 miles of mountain climbing that day. Ellison dropped onto his bunk exhausted, but Bob said to me, "Bill, come and walk down the road with me so that I can put my mileage for today at more than 60 miles." On another occasion, one hot summer day, I was driving south on Washington Street in Spokane when I saw Bob Marshall walking with a packsack on his back. I hailed him and offered him a ride. He refused with the word that he was on vacation and was walking from Spokane to the regional office of the Forest Service in Missoula, Montana.

Another earmark of Bob Marshall was his notekeeping. His personal work table was always littered with slips of paper, each portraying the details or observations about some little bit of research he was doing. I asked him about many of them, and learned that he did these things whenever he had an idle minute. They included items such as: how far a bug of a certain species travelled in one minute; the range in size of the leaves of huckleberry; the number of seeds in one wild currant, etc.

My research on the blister rust problem had the blessing of our chief in Washington, D.C., Samuel B. Detwiler, but the chief of the Spokane office, Stephen N. Wyckoff, did not like the idea (Note: The exact nature of Wyckoff's objection to Rockie's research is not made clear in Rockie's papers). This caused some friction in working conditions, but I continued on the research (Fig. 31) until I was called to Washington, D.C., in January of 1930 to write a bulletin describing our results.

During the field season of 1929, Bob Marshall had surprised me with the announcement that his father had died and had left Bob relatively wealthy, so he had decided to go back to school to pursue a doctorate at Johns Hopkins University, in Plant Physiology, as I recall. In June, 1930, while I was in Washington completing the bulletin on my ecological study, I had a call from Bob and he told me of his upcoming trip to Alaska.

While in Washington, D.C., I renewed



Fig. 31. W.A.R., Ribes research, northern Idaho.

friendships with other old friends, including Hugh H. Bennett, whom I had known in Soil Survey work years before. Bennett offered me a job at Pullman, Washington, to develop and supervise an erosion experiment station. He had just received some funds from Congress to start ten erosion experiment stations around the country, and he had chosen Pullman as the location for one of the stations.

I completed the blister rust eradication bulletin by the end of June, had it approved by Dr. Detwiler, and proceeded with my transfer from the Bureau of Plant Industry to the Bureau of Soils. The bulletin was never published, however, a result of some bureaucratic complications. By the time I learned about the complications I was too busy with my new work to give the bulletin the modifications needed for publication.

As I prepared for the transition to the new field of soil conservation, it brought to mind my first specific study of soil erosion in the Pacific Northwest. It happened during my wild currant study near Elk River, Idaho. In May of 1923, I was studying the root habits of these plants and their contribution to stability of stream banks against washing away by undercutting.

One morning I was lying on my stomach with

my chest and head down over the bank making measurements of the roots of the different plants growing on the stream bank when I heard something moving behind me. When I raised my head I saw a large black bear breakfasting on the vegetation. The bear was swinging his head back and forth in his search for his favorite leaves, and although he was within six or seven feet, he was not yet aware of my presence. From many previous encounters with bears, I knew they have very poor vision. I also knew that I must change my position and soon. Moving very slowly and carefully, I got the lower part of my body down over the bank with my feet in the stream without the bear's seeing or scenting me. By that time, the bear had advanced to within three feet of my head as I crouched in the stream under the vertically cut bank. Something had to be done. With all the energy I could muster, I suddenly jumped, leaped and yelled -- like a jack-in-the-box -- and really startled the animal. Instantly the bear jumped into the air, reversed himself tail for head, with his feet working like a paddle wheel, but very ineffectively, since his feet were in the air. When he came down his rapidly moving feet quickly took him out of sight.

The bear left me around 9:00 a.m., and after my nerves had quieted down, I returned to my study of the plant roots. At noon I walked over to the trail where I had left my lunch. A forest guard soon came along and we passed the time of day. He explained that he was the first person over that trail this spring and was cutting out logs and brush that had fallen during the winter. I asked him if he'd had lunch, and he said he had not, so I invited him to share mine. During lunch he said he had had a strange experience earlier that morning. He was axing through a downed log across the trail when a black bear came tearing up the trail at a gallop. He said it acted terrified and appeared to be running rather blindly. When it finally did see him it was less than 10 feet away. Without any hesitation it turned up the hill and disappeared, still at top speed. He said, "Its deep tracks in the trail showed continuously from where I saw the bear to here, a distance of more than three miles, and I've been wondering what could have scared that bear." After studying the bear's tracks we concluded that it had indeed been surprised and scared by my desperate action by the stream bank.

From this first rather brief study of soil erosion in the Pacific Northwest, soil conservation became the focus of my professional life for the next three decades.