

ORIGIN OF THE WILLAMETTE METEORITE  
Richard N. Pugh  
Science Dept, Cleveland High School  
Portland, Oregon  
John E. Allen  
Geology Dept, Portland State University  
Portland, Oregon

The Willamette meteorite is the largest meteorite ever found in the United States. It has a mass of 31,107 pounds or 15 1/2 tons. It was found in 1902 by Ellis Hughes at the east end of the Tualatin Valley, two miles northwest of West Linn, Oregon. Recent work now indicates that it did not fall in Oregon.

About fifteen thousand years ago a lobe of the continental ice cap blocked the Clark Fork River in northern Idaho. It formed 2,500 foot high ice dams that repeatedly impounded up to 500 cubic miles of water in Ice Age Lake Missoula. Each time the lake reached a height sufficient to float and undermine the ice dams they shattered releasing unprecedented amounts of water down the Columbia River. This occurred at least 40 times at intervals of about 55 years for more than 2,000 years.

The crest of these floods swept up the Willamette River as far as Eugene and reached an elevation of almost 400 feet. In them floated hundreds of ice bergs which carried thousands of blocks of rock and debris which has been transported from land by the ice.

As the flood receded the icebergs were stranded, melted and released their load leaving "erratic" boulders throughout the Willamette Valley. It has been calculated that up to 6 tons of meteorite has been removed by weathering during the last 13,000 years. This would make an original weight of 21 tons. An iceberg as small as 25 feet on a side could have floated the Willamette meteorite from Idaho to Oregon.

While working in and around the almost filled pit from which the meteorite was taken, it was found that rust was in excess of 6 inches thick. This work led to the discovery of numerous small erratic pebbles within 3 feet of the hole. An 18 inch diorite boulder was found 600 feet down slope from the site. As the flood ran up the Tualatin River Valley, the meteorite was left on a small bench the flood had cut.

We believe the Willamette meteorite did not fall in Oregon, but upon the ice sheet of Canada. The meteorite was then carried along with many other erratics by iceberg to the site where it was found in 1902.