

TEEL CANAL AND TUNNEL IS BIG ENGINEERING JOB

The following story of the Teel Irrigation District is taken from the Engineering News-Record of January 1919. It gives some interesting facts regarding the engineering features of the work. Since the article was written there has been about two miles of ditch completed so that the total ditch work at this time is three miles.

Progress on the 2 1/4 mile tunnel for the Teel Irrigation District in Umatilla County, Oregon, has reached 18 feet per heading per day. The tunnel will divert water from the John Day watershed to that of the Umatilla river. It will be fed by a 17 mile collecting canal, tapping Camas, Midway and Cable creeks. From the tunnel the water will flow through the natural channel of Butler Creek for 35 miles to a point where it will be diverted and distributed. The lands to be irrigated lie at an elevation of 600 to 800 feet above sea level, in the vicinity of Echo.

In addition to the tunnel and main canal there will be diversion dams, sidehill flumes, trestle flumes, inverted siphons, concrete drops and chutes, cement lined ditches, and other special construction works. A sawmill plant with a daily capacity of 20,000 feet has been installed on Camas creek.

The tunnel is 12,341 feet long, 8 feet wide and 7 feet high in the clear, with an arched roof. Its grade is 0.5 per cent and the greatest depth below the surface is 640 feet. At each end is a plant with 180 h. p. boilers and engines driving 10x12 compressors. A 59-inch fan drives the smoke and foul air from the face of the tunnel through an 18-inch pipe, so that the muckers are usually at work in from 5 to 5 minutes after a blast has been fired.

At each tunnel face are two air drills mounted side by side on a horizontal bar. Three 8-hour shifts are worked at each end of the tunnel, with two drillers and three muckers. They average six feet per shift or 18 feet per day, except that where timbering is required the progress is from 10 to 12 feet per day. The rock is basalt, more or less broken at the beginning but becoming harder as the work progresses.

About 14 miles of excavation will be required on the main canal, about one mile of this being in solid rock, and the remainder in a heavy black clayey loam. The bottom width is 25 feet with side slopes of 1 on 1. This excavation is being done at the rate of about 1000 cubic yards per day by a caterpillar mounted steam shovel, having a 1 1/2 yard bucket. About a mile of canal has been excavated by the middle of November.

The diversion dam is of timber, rock and earth, 195 feet long, with an overflow crest or spillway 155 feet long. An abutment connects it with the wall of the canyon at the east end while a combination head-gate and abutment connects it with the canal at the west end. There are four controlling gates in the dam.

Construction work was started about September 1. It is expected that excavation will be continued during the winter, but the flumes and trestles will not be started until spring, the main canal being at an elevation of about 3,500 feet. W. B. Hinkle, consulting engineer, of Echo Oregon, is engineer in chief for the Teel Irrigation District.—Echo News.

NATIONAL FOREST RECEIPTS SHOW GROWTH

The receipts from National Forest business in the North Pacific District for the six months ending December 31, 1919, were \$235,965.82, an increase of \$41,552.40 over the receipts for the corresponding six months in 1918, according to a statement of net receipts by forests and classes just compiled by H. I. Lovins, District Fiscal Agent.

Timber sales, which brought in \$215,952.70, is the leading item; \$6,447.85 came from water power; \$5,288.86 from special use permits; \$3,774.74 from grazing permits; and \$600 from timber settlement. More than \$7,500 of the total receipts came from fire, grazing, and timber trespass. Six Forests of the District contributed more than \$10,000 each to the total. The Whitman National Forest, in Eastern Oregon, led the District with \$46,054.82. The Tongass, in Alaska, was second, with \$44,169.65; and the Crater, in Southern Oregon, was third, with \$27,942.57. The Columbia, \$16,491.14; the Oregon, \$14,916.23; and the Olympic, \$14,915.25, ranked fourth, fifth and sixth respectively.

Forest Service Anticipates New Use for Yellow Pine Forests.

The use of western yellow pine as a source of turpentine and resin is anticipated in a report regarding the possibilities of extracting naval stores from the yellow pine trees on the National Forests of this territory just completed by Forest Examiner R. H. Weltknecht of the District Forester's Office. The report, together with a proposed policy for the Department to follow, has been sent to the Washington office for consideration.

While in France as an officer in the Field Artillery, Captain Weltknecht had an opportunity to see turpentine in the maritime pine forests on the Bay of Biscay and learned something of the French methods which are applicable in this country.

The yellow pine forests of the South Atlantic and Gulf States are fast disappearing and the industry must seek new fields. The study on which this report is based was undertaken in anticipation of the possible moving west of the turpentine indus-

try. Previous experiments conducted by the Forest Service have shown that western yellow pine yields a good grade of "pitch," from which turpentine and resin are made, though the amount of the yield of Oregon trees was very much less than those of Florida. When the demand for these products becomes keen enough it is not unlikely that the industry will establish itself on the Pacific Coast and thus may give additional value to the extensive yellow pine forests of eastern Oregon and Washington.

The local office of the Forest Service hopes that its appropriation for investigative work may be large enough to enable it to carry on additional studies this year, which would pave the way for industrial development of this new unused forest resource.

Lambing Well Under Way At Vaughan-Parker Ranch

Lambing is well under way at the Vaughan-Parker ranch just below town, announces Manager Frank Parker. The lambs are big husky fellows and are doing fine. There are 49 of them and not one has been lost yet. The growing tendency among sheepmen is to start lambing operations earlier than in past years. At this time of the year this necessitates shed lambing, owing to the severe weather. A number of bands of sheep in the Butler creek section are lambing at the present time.

Henry Peterson Married in Kansas.

Henry Peterson, son of Mr. and Mrs. Aaron Peterson of Gooseberry and a graduate of the local high school as well as an overseas veteran, was married in McPherson, Kansas, recently. His bride was formerly Miss Ada Anderson, and is a niece of Nels Johnson of Gooseberry. It was while visiting with her uncle in this county that the young people became acquainted. Mr. Peterson expects to arrive home with his bride next Saturday and their many friends here are preparing to extend them the proper welcome. The newly weds will make their home at Gooseberry, where Mr. Peterson is farming his father's ranch.

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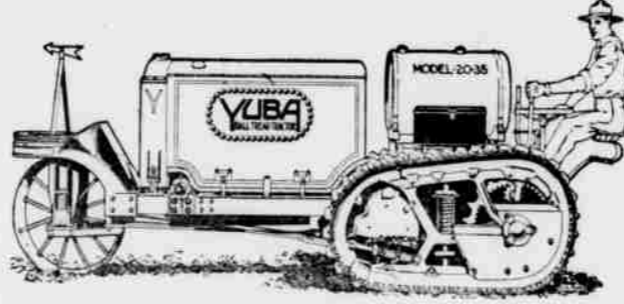
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