

The Columbia.—The stages on the 1st of the month were slightly lower than those at the close, and the mean stages, as compared with the records of previous years, ranged between 3.4 feet above the normal at Celilo and 9.3 feet above at Wenatchee. The upper Columbia averaged 6.2 feet higher than the normal, the lower Columbia 4.3 feet higher, or an average for the whole river of 5.0 feet above the normal. At Umatilla only once, and at The Dalles only twice, in the past 16 years has the mean monthly stage exceeded that of the present month, while at Wenatchee and at Newport with 7 years of record each, and at Bonners Ferry with a 6 years' record, the water has never been higher during May. The mean stages were uniformly higher than for April, being 5.7 feet higher at Vancouver, 5.0 feet higher at Umatilla, and 14.9 feet higher at Wenatchee. At Vancouver the river rose from 16.2 feet on the 7th to 17.5 feet on the 31st, at Umatilla from 16.6 feet on the 5th to 17.9 feet on the 31st, at Wenatchee from 27.6 feet on the 1st to 33.8 feet on the 31st, and at Northport from 13.7 feet on the 1st to 22.8 feet on the 31st.

The decreasing of the waters at the close of the month apparently marked the end of the so-called "June rise" of the Columbia, which every year is looked forward to with more or less apprehension on the part of merchants and boatmen, as well as by ranchmen having the bottom lands under cultivation. Navigation was uninterrupted, except during that portion of the month from the 12th to the 18th, inclusive, when the highest water occurred in the lower Columbia. During the period mentioned full-freighted boats could not ascend against the strong current at Cascade Locks, and were compelled to return to Portland and discharge a portion of their cargoes before passing the locks. On account of natural obstructions the Columbia River is not navigable as far up as the International boundary, though it is quite probable that the greater portion of these obstructions will at some time in the future be removed. Rapids at several points above the junction of the Snake and the Columbia prevent through navigation of the latter river from Priest Rapids nearly to Wenatchee. Steamboats operate on this river throughout the year between Wenatchee and Brewster, a distance of 76 miles, daily, and it is also possible for them to proceed to Bridgeport, 12 miles above Brewster, which they do when the volume of business warrants. During the months of May and June it is possible for boats to navigate the Okanogan River as far as Riverside, 57 miles, and during the month just closed 3 trips were made to that port, while the twice-a-week service to Okanogan, 37 miles, and to Omak, 42 miles, was maintained.

The Snake.—The mean of the daily stages at the several stations for the month averaged 0.2 foot below those for April, but was 0.8 foot above the normal for May. The water was highest on the 1st, or on the 11th, and the lowest on the 30th or the 31st. At Lewiston the river rose from 13.4 feet on the 1st to 14.7 feet on the 11th, falling again to 10.5 feet at the close of the month. At Weiser, there was a steady fall from 10.3 feet on the 1st to 7.1 feet on the 30th. The Snake River was open to navigation throughout the month as far as Asotin, Idaho.

The Willamette.—The highest water in the Willamette occurred on the 11th and 12th, except at Portland, where the stage was influenced by backwater from the rising Columbia, and where the highest stage recorded was 19.1 feet on the 15th and 16th, this being 4.1 feet above the flood stage. As timely warnings of the daily stages were issued from the Portland office, the damage resulting from the high water must have been very slight, if any.

At Jefferson, on the Santiam, the highest stage was reached on the 2d, and at McMinnville, on the Yambill, on the 4th; in these cases the height of the water was influenced by local rains during the first days of the month. With the exception of Portland, which as before stated, recorded higher water on account of the backwater from the Columbia, the mean stages

for the month were less than the normal, and were as follows: Eugene, -0.2 foot; Albany, -1.4 foot; Salem, -1.9 foot; Jefferson, -0.6 foot; McMinnville, -0.7 foot; and Estacada, -0.3 foot. At Portland the combined influences of the Willamette and the Columbia caused the river to reach a stage of 19.1 feet, which is 3.7 feet above the normal for May. At no place along the Willamette, Portland excepted, was the stage during May as high as those of April.

During the latter portion of the month navigation on the Willamette was interrupted on account of gravel bars which had formed in the bed of the river, and the falling water would not permit the ordinary traffic to Salem, to which point regular trips throughout the year are generally made, when the river bed is in normal condition. The month closed with stationary or falling conditions in the rivers at all stations.

MISCELLANEOUS PHENOMENA.

The prevailing winds were from the southwest. There was an excess of sunshine over the entire district. The percentage of possible sunshine was 73 at Spokane, 59 at Seattle and 63 at Portland. Frosts were general on the 14th and 15th. Thunderstorms and hail were reported from many stations during the latter part of the month. The highest reported wind velocity was 64 miles from the southeast at North Head, Wash., on the 26th.

PROPOSED IRRIGATION OF THE HORSE HEAVEN COUNTRY.

The land which it is proposed to irrigate lies between the Yakima and Columbia rivers, though wholly on the watershed of the Columbia. The Klickitat Irrigation and Power Company, which has made extensive surveys and plans for the work, proposes to get the water from the big Klickitat River. This river drains a large watershed on the east and north sides of Mount Adams. About 100 miles of ditch will be necessary between the intake and the point where the water begins to be distributed. Along the proposed ditch are numerous sites for reservoirs for impounding and conserving the water of the streams crossing the course of the ditch. Several hundred thousand acres of land are tributary. The land is said to lie unusually well for irrigation.

The land owners in this region have organized themselves into an association to cooperate with the irrigation company and facilitate the enterprise.—L. C. F.

DUST SHOWER IN NORTHERN IDAHO.

The daily papers report a fall of "a sulphurous looking substance" in connection with showers occurring in Nez Perce and other northern Idaho counties on May 25. The official in charge of the local office of the Weather Bureau at Lewiston has this to say regarding it:

The "sulphurous looking substance" was evidently nothing more than pollen from wild mustard, great quantities of which were in full bloom in this valley at the time the phenomenon occurred. The pollen was doubtless scattered broadcast by a brisk to high wind and was then collected by showers that immediately followed the wind and carried into pools where it remained about the edges after the water had disappeared. This was the conclusion I came to after carefully examining a sample of the deposit and comparing it with mustard pollen.

THE IDAHO IRRIGATION PROJECT.

By EDWARD L. WELLS, Section Director.

The Idaho Irrigation Company is the name of a corporation that is undertaking the reclamation of about 40,000 acres of land in Lincoln County Idaho, in the vicinity of Richfield, Gooding, Shoshone, and Dietrich.

The water is obtained from the Wood River, sometimes known as the Malad, and its tributaries, which have their sources in some of the highest mountains in the State. The

water will be impounded by a rock-fill dam 135 feet in height, 782 feet thick at the base, up and down stream, and 700 feet long across the top. This dam forms a lake 11 miles long, covering an area of 3,300 acres, and storing 205,000 acre-feet of water. This storage is provided to guard against shortage of water in the latter part of the season, the natural flow of the

stream in the spring and early summer being sufficient for the needs of the tract covered. The water is drawn from this reservoir through a tunnel driven under a rocky hill near the dam. The land to be irrigated lies in the great Snake River plain, the soil is rich and is of volcanic origin. The elevation of the tract ranges from about 3,500 to 4,500 feet.