

*Pacific drainage.*—Heavy rains on January 17 caused flood stages on the following day in the mountain tributaries of the Sacramento and Lower San Joaquin Rivers, and warnings were issued on the following day for the drainage canal interests at Stockton, and for the lower Mokelumne River; also for the Sacramento River between Monroeville and the mouth of the American River. Warnings for the upper valley were issued on January 17.

On the morning of January 29 heavy rains were in progress over the upper Sacramento Valley and advisory warnings of a substantial rise were issued in the early evening. More detailed and specific warnings were issued on the following morning, and also carried southward throughout the valley. These warnings were verified in the main, and no damage was done except in a few localities.

The Willamette River was in flood at the close of the year 1920 and did not fall below the flood stage at Portland, near the mouth of the river, until January 9, 1921. The crests varied from 3 to 4 feet above the flood stages. Warnings for the flood were issued at the proper time and the losses amounted to only about \$21,000, of which about \$20,000 occurred at Oregon City.

*Flood stages during month of January, 1921.*

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage	Date.
<b>ATLANTIC DRAINAGE.</b>					
James:	<i>Feet.</i>			<i>Feet.</i>	
Columbia, Va.....	18	15	15	18.0	15
Roanoke:					
Weldon, N. C.....	30	12	13	34.6	12
Neuse:					
Neuse, N. C.....	14	12	13	14.5	13
Do.....	14	16	17	15.3	17
Smithfield, N. C.....	14	15	18	14.7	16
Cape Fear:					
Elizabethtown, N. C.....	22	12	14	25.4	13
Do.....	22	16	18	26.5	17
Peedee:					
Cheraw, S. C.....	27	12	12	27.2	12
Do.....	27	16	16	32.5	16
Santee:					
Rimini, S. C.....	12	(1)	7	13.5	1
Do.....	12	12	(2)	16.2	20
Ferguson, S. C.....	12	(1)	8	13.2	3
Do.....	12	13	(2)	14.0	21
Wateree:					
Camden, S. C.....	24	16	17	26.0	16
Broad:					
Blairs, S. C.....	15	15	15	16.2	15 D. N
<b>EAST GULF DRAINAGE.</b>					
Apalachicola:					
River Junction, Fla.....	12	(1)	1	12.3	1
Tombigbee:					
Demopolis, Ala.....	39	(1)	3	44.5	1
Do.....	39	15	19	43.8	16
Pearl:					
Jackson, Miss.....	20	(1)	20	26.6	2
Columbia, Miss.....	18	(1)	2	19.9	1
<b>MISSISSIPPI DRAINAGE.</b>					
Ouachita:					
Camden, Ark.....	30	(1)	1	30.8	1
Sulphur:					
Finley, Tex.....	21	17	23	26.3	17
Ringo Crossing, Tex.....	20	14	19	23.5	15
<b>WEST GULF DRAINAGE.</b>					
Trinity:					
Dallas, Tex.....	25	13	17	33.1	15
Trinidad, Tex.....	23	15	25	34.4	22
<b>PACIFIC DRAINAGE.</b>					
Sacramento:					
Red Bluff, Calif.....	23	30	30	24.4	30
Tuolumne:					
La Grange, Calif.....	8	18	18	9.9	18
Mormon Slough:					
Bellota, Calif.....	20	18	18	20.8	18
Calaveras:					
Jenny Lind, Calif.....	14	18	18	15.0	18
Mokelumne:					
Bensons Ferry, Calif.....	12	19	19	12.0	19

<sup>1</sup> Continued from December.

<sup>2</sup> Continued into February.

*Flood stages during month of January, 1921—Continued.*

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
<b>PACIFIC DRAINAGE—continued.</b>					
Columbia:	<i>Feet.</i>			<i>Feet.</i>	
Vancouver, Wash.....	15	5	6	15.5	6
Willamette:					
Eugene, Wash.....	10	1	6	12.9	3
Albany, Oreg.....	20	(1)	6	23.5	1
Oregon City, Oreg.....	12	(1)	9	14.3	6, 7
Portland, Oreg.....	15	2	9	18.9	6
Santiam:					
Jefferson, Oreg.....	10	2	5	13.0	3
Yamhill:					
McMinnville, Oreg.....	35	6	6	37.9	6

<sup>1</sup> Continued from December.

**MEAN LAKE LEVELS DURING JANUARY, 1921.**

By UNITED STATES LAKE SURVEY.

[Detroit, Mich., Feb. 3, 1921.]

The following data are reported in the "Notice to Mariners" of the above date:

Data.	Lakes. <sup>1</sup>			
	Superior.	Michigan and Huron.	Erie.	Ontario.
Mean level during January, 1921:	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Above mean sea level at New York.....	602.08	579.92	571.99	245.54
Above or below—				
Mean stage of December, 1920.....	-0.17	-0.18	+0.10	+0.14
Mean stage of January, 1920.....	+0.04	-0.12	+0.69	+0.23
Average stage for January, last 10 years.....	+0.03	-0.03	+0.36	+0.13
Highest recorded January stage.....	-0.70	-2.75	-1.56	-2.06
Lowest recorded January stage.....	+1.20	+0.84	+1.03	+1.74
Average relation of the January level to—				
December level.....		-0.20	-0.10	0.00
February level.....		0.00	+0.10	-0.10

<sup>1</sup> Lake St. Clair's level: In January, 571.98 feet.

**EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, JANUARY, 1921.**

By J. WARREN SMITH.

January was characterized by persistent mild weather for the season in all sections of the country and no unusually low temperatures occurred. Precipitation was light, except in the central and north Pacific coast districts; considerable areas in the Southern States received less than 2 inches during the month. These conditions were unusually favorable for winter farm work and much plowing was done in the Southern States, particularly during the latter part, while the planting of early truck crops was under way in that section. There was considerable delay in farm work in the Pacific Coast States, however, due to persistent rains.

There was comparatively little snow protection to winter grains in the principal wheat growing sections, but, owing to the mild temperatures, no extensive damage occurred, although there was some complaint of alternate thawing and freezing in a few districts, principally in the upper Mississippi Valley. The month was generally favorable for winter truck, except for some frost damage in California and in portions of the South about the middle of the month. Western winter ranges were open for grazing during much of the month and ranges and stock continued mostly in good condition. Under the influence of the mild weather, fruit buds developed prematurely in the Southern States. Citrus fruits continued in satisfactory condition in both California and Florida.