

Climatological Data for November, 1910.
DISTRICT No. 9, COLORADO VALLEY.

FREDERICK H. BRANDENBURG, District Editor.

GENERAL SUMMARY.

The mild conditions that have been a feature of the autumn continued throughout November. While storms were not absent, they were not attended by the severe conditions that are common in the central and northern parts of the district with the approach of winter. The prevailing temperatures were high for the time of year, a condition that favored precipitation in the form of rain instead of snow in the central and northern parts of the drainage area. The rains greatly improved the supply of water for irrigation in Arizona, but the amount of snow stored thus far this season at high altitudes is small as compared with the average.

The month began with high pressure and cloudless skies throughout the district. On the morning of the 3d the pressure began falling, and an increase of cloudiness was general under the influence of a deep northern low, with loops extending almost to Arizona. By evening a part of the primary low had advanced eastward, leaving a small depression in Nevada that brought rain to Arizona and during the next two days to the adjacent regions in New Mexico, eastern Utah, and Colorado. Clear skies were again general until the 11th, when a low appeared in Nevada and Utah, attended by slowly increasing cloudiness. On the 13th, with the movement of the low southward, rain set in over Arizona, and the next day, the low having deepened meanwhile, precipitation, lasting several days, spread out to eastern Utah, western New Mexico, and western Colorado. The next storm appeared in Nevada on the 18th; it moved rapidly eastward, and the precipitation, generally light and of short duration, was confined to the central portion of the drainage area. While high pressure was the rule during the next 6 days, there was more than the usual amount of cloudiness. On the 25th a low moved rapidly across the district, leaving a portion in Arizona. Rain attended on the 26th and 27th, except in the extreme northern part of the district.

TEMPERATURE.

The mean of the 127 stations reporting was 47.4°, or 2.9° above the normal. By subdivisions the means and departures were: Western Colorado, 37.4°, +5.5°; eastern Utah, 43.7°, +5.8°; western New Mexico, 45.9°, +2.9°; Arizona, 54.3°, +1.3°; and southeastern Nevada, 49.9°. The highest monthly mean was 65.4°, at Mohawk Summit, Ariz., and the lowest, 20.2°, at Corona, Colo. During the first decade temperatures were above the normal, except on 2 or 3 days in southern Arizona. The second decade was cooler than normal in southwestern Arizona and for several days in southwestern Colorado; in the remainder of the district there was an uninterrupted excess, but not so great as during the first decade. The last decade averaged warmer than the normal throughout the district, the excess being marked on the 22d to 25th, inclusive. By subdivisions the extremes were: Western Colorado, 79° and -5°; eastern Utah, 83° and 5°; western New Mexico, 87° and 10°; Arizona, 99° and 16°; southeastern Nevada, 86° and 19°.

PRECIPITATION.

The average precipitation for the 175 stations reporting was 1.32 inch, or 0.47 inch above the normal. An excess was noted on all drainage areas, except the Mimbres. By watersheds the means and departures were: Green, 0.66, +0.11; Grand, 1.19, +0.22; San Juan, 1.50, +0.34; Little Colorado, 1.17, +0.09; Gila, 1.56, +0.61; Mimbres, 0.59, -0.18; and Colorado proper, 1.61, +0.86 inch. The

greatest monthly amount was 4.49 inches at Parker, Ariz., and no precipitation occurred at Deming and Hermanes, N. Mex. The average number of days with 0.01 inch or more precipitation was 4.

MISCELLANEOUS.

The percentage of sunshine was generally below the normal. Grand Junction reported 66, Durango 72, Flagstaff 83, Phoenix 75, and Yuma 87 per cent of the possible.

The mean relative humidity was above the normal, the excess being marked in Arizona. The following values were reported: Grand Junction 63, Durango 69, Flagstaff 72, Phoenix 68, and Yuma 60 per cent.

IRRIGATION IN SALT RIVER VALLEY, ARIZONA.

By L. N. JESUNOFKY, Section Director.

An interesting report of the operations of the Reclamation Service in the Salt River Valley of Arizona for the crop year of 1910 has been made by L. C. Hill, Supervising Engineer, Salt River Valley Project, Phoenix, Ariz.

During the year the Reclamation Service maintained and furnished water through 490 miles of canals for 131,364 acres, the largest area ever watered in the valley. The supply was ample throughout the year, although this has been a season of unusual drought and low water. The lands in crop received more than 5 acre-feet of water, or sufficient to cover each acre 5 feet deep.

The maintenance and operation of the vast system of canals in the Salt River Valley is a more complicated and difficult problem than similar work would be in the northern country, owing to the fact that the duration of the irrigation season covers the entire 12 months of the year. Repairs and enlargements must be carried on in connection with irrigation, for there can be no shutdown of the works.

In the Salt River Valley crops are growing all the time. There the planting and harvesting are under way every month in the year. An enormous amount of work was required to put the irrigation system in its present condition. All of the old canals that were absorbed by the Government were in need of repairs; most of them were too small and had to be enlarged, and many new canals were constructed. At the present time the system is working perfectly, and is probably supplying a larger area than any other single irrigation system in the United States. Agricultural experts declare that the Salt River Valley is without doubt the most fertile and productive agricultural district in the United States.

The most important single factor in the valley's great development this year was an assurance of an abundant supply of water. The guarantee was possible by reason of the enormous reservoir created by the Roosevelt Dam. During the low-water months, when the Salt River is ordinarily dry, the big lake was pouring forth a generous stream of water, which was taken up by the canals and turned upon the dry land. In a year such as the present the Salt River flow, without storage, would have proven inadequate; there would have been a large shortage of crops on all farms and a greatly reduced acreage under cultivation. In fact, it would have been an impossibility for vegetation to have thrived on 1.50 inch of rain that fell during the period February to July, inclusive.

The most important crop, and the most valuable, was alfalfa. Probably 65,000 acres were harvested. More than 5,000 acres were in cantaloupes and melons, besides a fairly large acreage in fruits.