

CLIMATE AND CROP SERVICE.

By Mr. JAMES BERRY, Chief of Climate and Crop Division.

The following summaries relating to the general weather and crop conditions during December are furnished by the directors of the respective sections of the Climate and Crop Service of the Weather Bureau; they are based upon voluntary reports from meteorological observers and crop correspondents, of whom there are about 3300 and 14,000, respectively:

Alabama.—Weather generally mild and favorable for farm work. Temperature about normal; precipitation nearly normal and fairly well distributed, though more needed to put soil in good condition. Several light freezes. Cold wave during last few days slightly damaged oats in some northern counties, though oats and wheat generally promising. More oats sown, making acreage near average. Some ground broken for next year's crops. Fruit trees and strawberry plants in good condition.—*F. P. Chaffee.*

Arizona.—With temperature nearly normal and light rains generally over the Territory, the conditions were favorable for agricultural and stock interests. In the southern and central sections alfalfa and other seasonal crops made good growth until the cold days the latter part of the month checked plant development. Plowing and seeding were still in progress, except in some portions of the northern section, where scarcity of water continued. Ranges and stock were in good condition.—*H. K. Holcomb.*

Arkansas.—The temperature was nearly normal. The rainfall was deficient until the third decade, when general and heavy rains fell in all portions of the State, except the northwest portion, effectually breaking the drought that had prevailed since August. Cotton practically all picked. Too dry first of month for plowing and too cold and wet latter part. Small acreage sown to winter grains, but where sown they did fairly well. Stock healthy.—*Edward B. Richards.*

California.—Nearly normal weather conditions prevailed during the month. Severe frosts were frequent, but caused no material damage to oranges or other crops. The heavy rainfall toward the close of the month was of inestimable value to all farming interests in southern California, and other sections were also considerably benefited. Farm work had been very backward in the southern districts, but after the rains the soil was in good condition there and elsewhere and grain made good growth.—*Alexander G. McAitie.*

Colorado.—During the greater portion of the month the weather was exceptionally fine and mild, but on the 25th a cold wave with snow extended over the State, the cold weather lasting to the close of the month. With a few exceptions, the ranges over the State were in good condition; also cattle, horses, and sheep. Stock water was generally sufficient for all requirements.—*F. H. Brandenburg.*

Florida.—The month was generally favorable for farm work. Much plowing was accomplished and a good acreage was planted to oats; the early planted pushed forward, although the need of rain retarded growth somewhat. The month was colder than the average and there was a deficiency of more than an inch of rain. As a result vegetables were backward. During the latter part of the month tender vegetables suffered slightly from frosts in the central district. Ice formed over the northern and western districts.—*A. J. Mitchell.*

Georgia.—Temperature for the month was practically normal; low readings were registered from the 19th to the 22d and from the 29th to the 31st. The rainfall was slightly below normal and well distributed. All conditions were favorable to agricultural pursuits. Grain germinated a good stand and made rapid growth. Fruit trees were healthy and thrifty; many young peach trees were set out. Strawberries were in bloom in a few sections. Winter plowing progressed favorably. Stock was in good condition.—*J. B. Marbury.*

Idaho.—Weather pleasant most of the month, but became cold and stormy near its close. The minimum temperature for the State was the lowest on record for December. The range continued open later than usual, but was generally covered by the close of the month. The hay supply was good and stock was generally in good condition. Winter wheat was fairly good, though suffering in some localities from lack of snow covering. Trees were in good condition.—*Edward L. Wells.*

Illinois.—The growth of wheat was retarded by extremely dry conditions during October and November. It had little snow protection during December. Rains toward the latter part of the month were of great benefit, but the sudden change to very low temperatures on the 27th to 29th found the plant weak and small and not in good condition to withstand, unprotected, the severe cold. It was feared that some injury ensued, but it was not possible to estimate the extent.—*Wm. G. Burns.*

Indiana.—The ground was lightly covered with snow from the 10th to the 22d. The drought that had been more or less intense in all sections since the beginning of October was relieved by copious rains on the 22d-26th. When the snow disappeared, wheat, although small and mostly thin, looked green and fairly vigorous. Considerable shocked corn was still in the fields, but the greater portion of the crop had been cribbed or marketed. Stripping tobacco was in progress during the last decade.—*W. T. Blythe.*

Iowa.—With mean temperature and precipitation for the State nearly normal, December was generally favorable for the usual farm work and for feeding stock. During the first decade the weather was dry and very favorable for completing corn husking, and the crop was cribbed in excellent condition. During the coldest weather winter grain and grass were protected by snow. The blizzard on the 27th was severe on stock, but not much loss was reported.—*John R. Sage.*

Kansas.—Wheat was in fair condition in many of the southern and eastern counties, and in good condition over the greater portion of the State; but few unfavorable reports received. Corn was mostly gathered over a large part of the State; only a few counties reporting much still in the fields. Stock was in good condition, but one county making an unfavorable report.—*T. B. Jennings.*

Kentucky.—The temperature averaged somewhat below the normal, but no severe cold was experienced. The rainfall was about the normal, was fairly well distributed, and gave complete relief from the intense drought that prevailed during October and November. Winter wheat and rye improved greatly, but were still far from promising. Fruit trees were in good condition. Tobacco handling progressed well. Stock was generally in good condition.—*H. B. Hersey.*

Louisiana.—The rainfall was well distributed throughout the month and, except in a few localities, was sufficient for agricultural interests. Preparations for spring planting were well advanced in some localities but were generally backward. Freezing temperatures occurred in the sugar region on several dates. The bulk of the sugar cane crop standing was windrowed on advices contained in Weather Bureau warnings. The outlook was that a large acreage would be planted to cane this season. Seed cane generally was in good condition.—*I. M. Cline.*

Maryland and Delaware.—Inclement weather, due to storms of 5th, 10th, 17th and 27th, and steady, moderately cold weather, with normal precipitation, prevailed during the month. The temperature averaged more than 5° per day below normal. The snowfall, seventeen inches, was the greatest on record at Baltimore for December; about half fell on the 10th, and for two weeks thereafter protected and greatly benefited vegetation throughout the section. Wheat had recovered much by the end of the month, and was generally in average condition.—*Oliver L. Fassig.*

Michigan.—The cold, moderately dry weather of December was not the most desirable for winter wheat and rye, although the actual effect will not be discernible until next spring, and even then with favorable conditions may be entirely counterbalanced. The ground in the principal winter wheat counties was bare much of the month. At the close of December wheat and rye did not show any marked change since the end of November and continued fairly promising in appearance.—*C. F. Schneider.*

Minnesota.—Moderately cold periods occurred on the 12th, 13th, 27th, and 28th, with the lowest temperature for the month generally on the 28th. Warm periods occurred on the 7th, 8th, 30th, and 31st, with the highest temperature for the month on the 30th and 31st. The precipitation was practically all snow, the largest amounts falling late in the month. Farm work was about all finished before December 1.—*T. S. Outram.*

Mississippi.—The weather during the month was generally favorable, although excessive rains in the northern counties during the last week were somewhat damaging to the soil, bridges, and unpicked cotton. The gathering of crops was completed, excepting a little cotton in scattered localities. A small acreage of oats was sown in the south and some plowing was done in the east, but not much farm work was accomplished.—*W. L. Belden.*

Missouri.—The weather during the month of December, 1904, was generally favorable for winter crops. The moisture received, while not sufficient for all purposes, greatly improved the condition of wheat and rye. Ground was fairly well covered with snow during coldest spells, and at close of month wheat was in fair condition and free from insects, except in a few scattered localities. Considerable corn in shock still in the fields, weather having been rather too dry for husking. Fall sown grasses in fair condition.—*George Reeder.*

Montana.—Mild, open weather prevailed till the 21st, when general, though light, precipitation began, lasting about three days, and was followed by unseasonably cold till the 28th. Snowfall was too light to interfere materially with grazing, and practically no feeding of stock was necessary. Cattle and sheep were for the most part strong and vigorous and in condition to endure the severe weather usual later in the season. Fall sown grain failed to germinate east of the mountains because of absence of moisture, but came up and made fair growth west of the main divide.—*R. F. Young.*

Nebraska.—The dry weather and moderate temperature of the month allowed rapid progress in corn husking and nearly all of the corn was secured before the end of the month. While the soil continued dry and without a covering of snow throughout the month, little or no damage resulted to winter wheat. The mild weather was favorable for stock, which was in excellent condition in all parts of the State.—*G. A. Loveland.*

Nevada.—Temperature slightly above normal. Precipitation somewhat deficient. Weather generally fair during first and second decades;

SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS, DECEMBER, 1904.

In the following table are given, for the various sections of the Climate and Crop Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting greatest and least monthly precipitation, and other data, as indicated by the several headings.

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation. Of course the number of such records is smaller than the total number of stations.

The mean temperatures for each section, the highest and

Section.	Temperature—in degrees Fahrenheit.						Precipitation—in inches and hundredths.												
	Section average.	Departure from the normal.	Monthly extremes.				Section average.	Departure from the normal.	Greatest monthly.		Least monthly.								
			Station.	Highest.	Date.	Station.			Lowest.	Date.	Station.	Amount.	Station.	Amount.					
Alabama	45.8	-0.1	Pushmataha	83	26	Delmar, Madison	15	29	4.38	+0.01	Riverton	7.58	Notasulga	1.52					
Arizona	45.3	-0.1	Gila Bend	88	1, 3	Riverton	15	29	0.84	-0.13	Alpine	2.52	3 stations	0.00					
Arkansas	42.9	-0.4	Lutherville	80	2	Fort Defiance	-7	27	5.10	+1.28	Elon	10.93	Fort Smith	0.55					
California	47.2	+0.1	Ventura	88	19	Newport	-4	29	3.04	-1.06	Monumental Mine	25.14	3 stations	0.00					
Colorado	26.9	+1.4	Trinidad	79	23	Oregon	-1	28	27.05	-0.28	Marshall Pass	2.36	Grover	T.					
Florida	58.4	+1.0	4 stations	86	5, 6	Bodie	-13	26	1.97	-1.15	Pensacola	6.72	Fort Pierce	0.08					
Georgia	47.1	+0.1	Waverly	83	27	Diamond	13	30	3.59	-0.39	Columbus	6.25	Waverly	0.57					
Idaho	28.1	-0.1	Blue Lakes	60	20	Chesterfield	-35	27	1.92	-0.36	Landore	4.72	Lost River	0.21					
Illinois	29.4	-0.6	New Burnside	68	22	Kishwaukee	-21	14	1.93	-0.36	Robinson	4.50	Springfield	0.57					
Indiana	29.2	-3.0	Topeka	70	27	Auburn	-12	14	3.48	+0.79	Bloomington	6.10	Auburn	1.17					
Iowa	23.4	+0.5	Albia	67	22	Elkader	-19	14	1.44	+0.15	Newton	3.68	Storm Lake	0.06					
Kansas	31.7	-1.3	Gove	79	1	Macksville	-8	15	0.64	-0.33	Columbus	1.52	Newton	0.05					
Kentucky	36.4	-0.5	Alpha	72	25	Farmers	-2	11	4.30	+0.45	Hopkinsville	6.44	Lexington	3.10					
			Jackson	72	25	Baton Rouge	18	28, 30			Liberty Hill	14.09	Reserve	1.56					
Louisiana	51.1	-0.3	Schriever	84	3	Mansfield, Plain	18	18	5.74	+0.96	Millsboro, Del.	6.19	Boetherville, Md.	1.63					
Maryland and Delaware	29.6	-5.2	Milford, Del.	66	28	Deadling, Robeline	-11	11	3.50	+0.29	Eagle Harbor	4.57	Birmingham	0.62					
Michigan	21.2	-4.3	Charlotte	62	23	Humboldt	-26	15	1.84	-0.53	Mount Iron	2.61	Mora	0.13					
Minnesota	16.7	+0.8	Worthington	57	8	Pokagama Falls	-37	13	0.82	-0.03	Ripley	13.70	Fayette (near)	1.91					
Mississippi	47.1	-0.8	Mora	57	31	Ripley	14	28	5.31	+0.97	New Madrid	4.52	Rockport	0.12					
Missouri	32.9	+0.8	Crystal Springs	85	3	Unionville	-10	28	1.50	-0.67	Salt Lake	3.70	Decker	0.10					
Montana	26.7	+2.4	Vichy	75	1	Culbertson	-41	27	0.85	+0.04	Pawnee City	0.70	Republican	0.00					
Nebraska	28.3	+0.9	Decker	77	13, 17	Valentine	-20	27	0.20	-0.39	Lewers Ranch	3.63	Caliente	0.00					
Nebraska	28.3	+0.9	North Loup	75	31	Wells	-23	27	0.51	-0.45	New Bedford, Mass.	5.27	Vanceboro, Me.	0.98					
Nevada	33.3	+2.0	Elko	76	2	Fort Fairfield, Me.	-34	25	2.46	-0.57	Cape May	5.38	Somerville	2.06					
New England*	18.3	-9.8	Provincetown, Mass.	61	5	Layton	-15	15	3.19	-0.52	Fort Wingate	2.27	Vermejo	0.08					
New England*	18.3	-9.8	Friesburg	60	28	Estancia	-9	6	0.79	+0.46	Palermo	6.54	Plattsburg	0.20					
New Jersey	27.0	-6.8	Cape May, C. H.	60	31	Chazy	-28	25	2.55	-0.59	Horse Cove	6.28	Waynesville	1.08					
New Mexico	35.6	0.0	Brice, Lordsburg	78	1	Linville	9	20, 29	3.34	-0.48	Medora	-43	26	0.62	+0.20	Wishek	2.00	Milton	T.
New York	19.8	-6.8	Fort Union	78	31	Orangeville	-16	15	3.09	+0.25	5 stations	25 dates	0.79	-1.06	Plattsburg	4.97	Orangeville	1.45	
North Carolina	40.0	-2.2	Ripley	60	28	Burns	-6	25	7.15	+0.89	Glenora	25.06	Ontario	0.70					
North Carolina	40.0	-2.2	Southern Pines	80	27	Smethport	-19	15	2.48	-0.95	Scranton	3.71	Center Hall	1.32					
North Dakota	14.2	+1.3	New England City	55	8	Adjuntas	50	30	2.40	-0.39	La Carmelita (a)	8.42	Juana Diaz	T.					
Ohio	28.0	-2.9	Oakdale	53	30	Clemson College	16	19	2.79	-0.45	Greenville	4.90	Charleston	1.08					
Oklahoma and Indian Territories	39.4	-0.5	Cambridge	69	29	Walhalla	16	29	2.79	-0.45	Ashcroft	-33	27	0.46	-0.10	Aberdeen	1.60	Leslie	0.00
Oklahoma and Indian Territories	39.4	-0.5	Eldorado, Okla.	78	1	Rugby	5	29	6.07	+1.96	Memphis	10.40	Leadvale	3.00					
Oregon	37.8	+0.9	Ravia, Ind. Ter.	76	25	Tulia	7	28	2.06	-0.59	Rockland	10.09	3 stations	0.00					
Pennsylvania	25.8	-5.7	Klamath Falls	63	1	Henefer, Morgan	-25	27	0.74	-0.18	Huntsville	2.12	Loa	0.00					
Porto Rico	75.4	-0.7	Williams	63	29	McDowell	-9	11	3.71	+0.69	Williamsburg	7.45	Shenandoah	1.20					
Porto Rico	75.4	-0.7	Uniontown	71	27	Cusick	-1	26	4.75	-0.74	Clearwater	20.92	Sunnyside	0.55					
South Carolina	45.5	-1.5	Vieques	95	6	Weston	-20	11	3.12	+0.16	Pickens	5.91	Creston	1.63					
South Carolina	45.5	-1.5	Scheraw	78	27	Darlington	-29	14	1.88	+0.65	Madison	3.34	Spooner	0.49					
South Dakota	20.7	+0.2	Seivern	78	24	Upper Geyser Basin	-32	26	0.63	-0.35	Upper Geyser Basin	2.80	3 stations	T.					
Tennessee	40.5	+0.5	Greenwood	72	30	Border	-32	27			Y. N. P.								
Tennessee	40.5	+0.5	Dover	75	25														
Texas	49.4	-0.7	Sabinal	92	1														
Texas	49.4	-0.7	Rockville	81	2														
Utah	28.8	+0.4	Callville	70	26														
Utah	28.8	+0.4	Cape Henry	70	28														
Virginia	34.4	-3.4	Southbend	70	29														
Washington	36.9	+1.8	Grafton, Philippi	71	27														
Washington	36.9	+1.8	Whitehall	58	29														
West Virginia	32.8	-2.4	Pine Bluff, Story	98	30														
Wisconsin	19.1	-0.1																	
Wyoming	24.7	+1.9																	

* Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

cloudy and stormy on 23d, 24th, 30th, and 31st. The condition of winter range was generally above average; stock did well, with less feeding than usual. Considerable snow fell in the high ranges the latter part of month. Outlook good for a satisfactory water supply the coming season.—*J. H. Smith.*

New England.—The past December was the coldest of record, the next lowest mean temperature for December having been 21.1° in 1890. The cold weather was very favorable to the ice harvest which progressed to completion in many sections. The general covering of snow and ice was favorable to grass and winter grain. The water famine was somewhat relieved by the general and heavy rains of the 27th.—*J. W. Smith.*

New Jersey.—The month was the coldest since the establishment of this service, 1887. As the ground was well blanketed with snow during the entire month in the northern and central, and up to the 28th in the southern section, grain and grass were well protected from the severe freezing weather and were in very good condition. Late sown wheat in the southern section was greatly improved by the slowly melting snow. The average depth of snowfall, 19.1 inches, was the greatest on record.—*Edward W. McGann.*

New Mexico.—The month was somewhat stormy and rather cold and windy over much of the Territory. Considerable snow occurred, stock

water was plentiful, the subsoil was well moistened, and outlook for later plowing, seeding, and range was very good. Stock was mostly doing well, although the range was very short in the northeast districts and shrinkage was reported from Lincoln County. Little or no loss was reported from storms and much good was expected from the heavy deposits of snow.—*Charles E. Linney.*

New York.—The month was the coldest December for a number of years and was rather dry, but winter grain and grass were well protected by snow until the 23d and were in good condition at the close of the month. Many wells and streams were dry until the drought was broken by a general rain on the 27th. The conditions were generally favorable for live stock.—*R. G. Allen.*

North Carolina.—On the whole the weather during December was not detrimental to crops. The cold period from the 11th to 16th checked growth somewhat, but the development of the roots of the winter cereals was not hindered thereby. There was a favorable covering of snow during the middle of the month. Most of the winter wheat was sown late, so that much was not up, that which was up showed a good stand. Fall oats and rye were nearly all up and looked well.—*C. F. von Herrmann.*

North Dakota.—The temperature and precipitation were slightly in excess of the normal. The snowfall was not heavy enough to interfere

with stock feeding on the open ranges, but was sufficient to satisfy thirst, and stock, as a rule, came through the month in good condition.—*B. H. Bronson.*

Ohio.—Wheat was very small and thin on the ground the first of the month, owing to dry and unfavorable weather, but was well protected by snow during the low temperatures of the middle of the month. Abundant rain fell from the 23d to 27th, and greatly improved the prospect. It was feared, however, that the sudden freezing of the ground on the 27th caused considerable damage to unprotected plants. Rye was looking well. Corn husking was not completed. Tobacco cured well and was of good quality.—*J. Warren Smith.*

Oklahoma and Indian Territories.—Moderate temperatures prevailed during the month. The precipitation was decidedly below the normal, but was fairly well distributed over the section. Wheat was greatly benefited by occasional snowfall during the month, but the general condition of the crop was poor to fair.—*C. M. Strong.*

Oregon.—East of the Cascade Mountains the rainfall was insufficient for rapid germination, and fall wheat made slow growth. Pasturage in this section was generally short, and considerable extra feeding was done. West of the Cascade Mountains the rains were heavier, and plowing and seeding were finished earlier than usual. Fall crops in this section germinated nicely, and at the end of the month they all were well rooted and presented a green and thrifty appearance.—*Edward A. Beals.*

Pennsylvania.—At the beginning of the month early sown grain ranged from fair to good, but a large acreage of late sown had germinated and developed slowly on account of prevailing drought conditions. The average snowfall (13.4 inches) was much in excess of the usual amount, and grain, meadows, and pastures were doubtless unusually well protected.—*T. F. Townsend.*

Porto Rico.—Weather generally clear to partly cloudy, with rainfall below normal; favorable for the maturing of canes. Sugar making continued throughout the month in the southern division, and the yield was generally better than at this season last year. Young canes did well; more than the usual amount was planted. Some cotton picked; yield satisfactory. Coffee picking throughout the month; yield very light. Oranges plentiful and of good quality. Some corn and beans harvested. Pasturage fair and stock in good condition.—*E. C. Thompson.*

South Carolina.—The month was colder than usual, although without any severe cold waves. The precipitation was approximately normal and was ample, as most of it was absorbed as it fell. Wheat and oat seeding was nearly completed, though retarded somewhat by frozen ground and snow in the western portions. Truck was damaged on the coast by the killing frost of the 15th. Little plowing was done for spring planting, as the soil was generally too wet. Streams continued exceptionally low, though rising slowly toward the close of the month.—*J. W. Bauer.*

South Dakota.—Except during a stormy and cold period from the 26th to 28th, the weather was very favorable for the grazing of stock on the open ranges. In some localities deficient soil moisture was unfavorable for winter rye and the limited acreage of winter wheat. Live stock and range pasturage were in very good condition and reports indicated a sufficient supply of hay and coarse feed on hand for winter. Corn husking was completed under very favorable conditions.—*S. W. Glenn.*

Tennessee.—The month was generally mild. Moderate rains fell at intervals and heavy amounts on the 26-27th. Early sown wheat at the end of the month was looking well, as a rule, and the rains during the month were beneficial in bringing up late sown grain. Winter oats were not in good condition, owing to previous drought and to poor germination.—*H. C. Bate.*

Texas.—Droughty conditions continued with increasing severity over

the entire section during the first and second decades of the month, but during the third decade these conditions were fully relieved over the eastern and coast divisions and partially so over the other parts of the State, but more rain is needed in some places. The temperatures of the month were above normal until about the 25th, when a cold wave of considerable intensity caused freezing temperatures, with frost, to the coast line. All harvesting operations, except the gathering of some little cotton in a few of the western counties and the grinding of some cane in the coast district, were completed and preparatory work for a new crop was well advanced. Early sown grain made some advance but the late sown was inferior and backward, the stand being bad and growth retarded by unfavorable weather conditions. Trucking interests prospered and pasturage was unusually good and abundant, except where the drought continued.—*W. H. Alexander.*

Utah.—The precipitation during the month was below the normal and insufficient for the needs of the soil, which was very dry owing to the long drought. Temperatures were above normal, except near the close of the month, when they fell in some districts to below zero. Fall grain was generally in poor condition and in some localities the seed remained dormant owing to lack of sufficient moisture. Ranges offered no sustenance, but stock was kept in good condition by feeding.—*R. J. Hyatt.*

Virginia.—The weather for December was rather more favorable for crop progress than in either of the two preceding months. Although it was quite cold, especially during the second decade, a good snow covering obtained, and this, with ample moisture at other times, was of great benefit to clover and to the fall seeded crops of wheat, oats, rye, and barley.—*Edward A. Evans.*

Washington.—The mild weather was generally favorable for the fall sown wheat. Drought during the fall greatly delayed seeding, and also retarded germination and growth, so that the wheat was generally short, but was of good color and fairly good condition in Spokane and Whitman counties. In the central counties it germinated late, so that the crop was not vigorous. In southeast counties the prospect was below average. Owing to drought much grain failed to germinate, making reseeded necessary. No snow covering in east and southeast counties.—*G. N. Salisbury.*

West Virginia.—The weather was dry and quite cold during the greater portion of the month, and the ground was covered with snow from the 5th to the 24th. The snow was all taken off by the heavy rainfall of the 24-27th, and the warm spell at that time was followed by high winds and a freeze on the 28th. The drought then broken had continued from late summer and was undoubtedly the most severe in years. At the close of the month, wheat, rye, and oats were in very poor condition and the prospects were not favorable; stock was in fairly good condition.—*E. C. Vose.*

Wisconsin.—The feature of the month was the storm that passed over the southeastern portion of the State on the 27th, causing very heavy snow and sleet over the central counties. The heavy deposits of snow and ice broke the branches from shade and fruit trees in many localities, prostrated telegraph and telephone wires, and delayed trains. Although there were two cold periods during the month winter grains and grasses were well protected and were reported in satisfactory condition.—*W. M. Wilson.*

Wyoming.—The weather conditions for the month were very favorable. Stock remained in excellent condition, and no losses occurred. The cold wave of the 26th and 27th was not severe and was soon followed by unusually mild weather. The snowfall for the month was usually sufficient to allow stock to be kept on the winter ranges. There was a marked deficiency of snow in the mountains of the State.—*W. S. Palmer.*

SPECIAL ARTICLES.

RECENT PAPERS BEARING ON METEOROLOGY.

Mr. H. H. KIMBALL, Librarian and Climatologist.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a —.

Nature. London. Vol. 71.

— Hydrology in the United States. Pp. 187-188.

Hann, Julius. Mean temperatures of high southern latitudes. P. 221.

Knowledge. London. New Series. Vol. 2.

Lockyer, William J. S. Our sun and weather. Pp. 6-8.

Science Abstracts. London. Vol. 7.

B[orns], H. Temperature decrease in the atmosphere up to heights

of 10 kilometers. [Abstract of article of J. Hann.] Pp. 949-950.

B[orns], H. Measuring the electric conductivity and ionisation of the air from balloons. P. 974.

B[orns], H. Registering electrometer for the dispersion of atmospheric electricity. [Abstract of article of G. Lüdeling.] P. 974.

American Journal of Science. New Haven. 4th Series. Vol. 19.

Dabourian, H. M. Radio-activity of underground air. Pp. 16-22.

National Geographical Magazine. Washington. Vol. 16.

— The farmers of the United States. [Extract from Annual Report of the Secretary of Agriculture, 1904.] Pp. 39-46.

Scottish Geographical Society. Edinburgh. Vol. 21.

Pirie, Harvey and Brown, N. Rudmose. The Scottish National Antarctic Expedition. Second Antarctic Voyage of the "Scotia." [Meteorological abstract.] Pp. 24-37.

— "Rain-making" among the North American Indians. [Note of H. E. Mill.] P. 46.

— Antarctic meteorology. [Note on paper of H. Arctowski.] Pp. 47-48.

— The Argentine Government and meteorology. [Note.] Pp. 48-49.

Scientific American. New York. Vol. 91.

— The Lebaudy airship "Le Jaune." P. 478.

Rotch, A. Lawrence. The use of kites for meteorological observations at sea. P. 479.