During December, 1910, snow fell only on the 4th to 6th, generally in very small amounts, except in northern Virginia. The State average for Virginia was 3.4 inches, unmelted, for North Carolina 1 inch, and for the other States except Florida, where no snow fell, a trace. The largest monthly amount was 11 inches at Lassiter, Va., all of which fell on the 5th. In North Carolina the largest total snowfall was 3.5 inches, at Reidsville, Roxboro, Saxon, and Brewers. In northern Georgia and northern Alabama the largest amount did not exceed 2 inches. At some points sleet occurred in place of snow.

RIVER CONDITIONS.

The area covered by the heavy rains of the 4th to 6th was so limited that only a very moderate rise in the rivers resulted. At all points throughout the district the rivers maintained very low stages and a very uniform flow. The water available for hydroelectric power was at a minimum during the first few days of the month and again toward the close.

MISCELLANEOUS PHENOMENA.

The prevailing winds for the month were from the north in Alabama and Mississippi and from the northwest in all other sections. The wind movement was moderate, and but few of the regular stations reported gales of 40 miles an hour or more, namely, Atlanta, 47 miles from the west on the 20th, Savannah, 42 miles west on the same date, Pensacola, 52 miles from the southeast on the 22d, and Hatteras, 46 miles from the north on the 30th. The mean hourly wind movement exceeded 10 miles at Hatteras, Charleston, Atlanta, Savannah, Jupiter, Key West, and Pensacola. There were quite a large number of pleasant bright days during the month, the average number of clear days being 16, ranging from 20 in Florida to 11 in Mississippi. The number of partly cloudy days was 6, of cloudy days 9. No severe local storms of any kind were reported during December.

BRIEF METEOROLOGICAL SUMMARY FOR THE YEAR 1910.

In some respects the year 1910 from a climatic standpoint was a noteworthy one throughout District No. 2. The temperature during January and February was continuously but moderately low, the precipitation was below the normal, and neither could be considered a severe winter month. A sudden change to warmer weather followed, and March was characterized by remarkably high temperatures and summerlike conditions. It was also very dry, some places experiencing the longest spring drought on record.

Spring and summer were decidedly cool. Killing frosts were general on April 26, an unusually late date. A unique feature of April weather was the snowstorm on the morning of April 25, during which snow fell to a depth of from 2 to 4 inches, unmelted, in northern Alabama and Georgia, and traces were received as far south as Pensacola, Fla. May was one of the coldest spring months experienced in many years. The deficiency in temperature continued during five consecutive months from April to August, inclusive, and during most of this period the precipitation was also below the normal, except in June.

September was warm and dry, with a high percentage of sunshine, but cold weather returned at the close of October and both November and December were decidedly cold. December was one of the coldest winter months ever experienced, comparable only with December, 1903, and December, 1909. In October, severe tropical hurricanes passed over Florida and the south Atlantic coast, and remarkably heavy rains were received in portions of Florida.

During many past winters in this region January and February have always been the coldest months, but during both 1909 and 1910 the period of greatest cold retreated to December.

THE WATER-POWER RESOURCES OF GEORGIA.

By C. F. VON HERRMANN, District Editor.

[Concluded from November Review.]

The earliest development of hydroelectric power in southern Georgia was made in 1905 by the Albany Power and Manufacturing Company at Albany, Ga. The power house and dam are located on Muchafoonee Creek at Big Shoals. The dam, which is one of the best types of construction, holds back the water of three creeks for nearly 15 miles. About 3,000 horsepower are available at the average stage of the water. A much larger development is planned at Porters Shoals, 2½ miles above Albany, which is expected to develop 9,000 horsepower. The municipal lighting plant and street railway system at Albany are run by electric power as well as a number of manufacturing plants and cotton mills.

The following is a partial list of the most important shoals on the Flint River, north of the fall line, passing from north to south:

Stream and location.	Name of fall or shoal.	Length of shoal.	Fall.
Flint River:		*Feet.*	*Feet.*
Pike County	Flat Shoals	3,000	32
Upson County	Dripping Rock Shoals	3,900	14
Do	Yellow Jacket Shoal	3,400	37
Do	Snipes Shoals	3,350	12
Big Potato Creek:			
Upson County	Rogers Shoals	3,600	80
Do	Daniels Mills Shoals	150	13

The average rainfall for the Chattahoochee and Flint River basins and the mean river stages at West Point, Alaga, and Eufaula on the Chattahoochee and at Woodbury, Montezuma, Albany, and Bainbridge on the Flint River will be found in the table at the end of this article.

THE ALTAMAHA SYSTEM.

The Altamaha River is formed by the union of the Oconee and Ocmulgee Rivers on the line between Montgomery and Appling Counties and pursues a southeasterly course, emptying into the Atlantic just below the city of Darien. Its length is about 131 miles by the river and it drains an area of 14,620 square miles. The total fall of the river from the point of union of the Ocmulgee and Oconee to Darien is 83 feet. The soil of this region is sandy and permeable, nevertheless the freshets on this river are sometimes of considerable magnitude. As the Altamaha lies entirely below the fall line, it furnishes no important water-power sites.

THE OCONEE RIVER.

The Oconee River has its sources in Hall County near Gainesville, on the south side of the Chattahoochee Ridge, the stream proper being formed by the union of North Oconee and Middle Oconee, which unite just below the city of Athens. The river pursues a course a little east of south through a hilly region made up of cultivated ground interspersed by extensive tracts of forest. Below Milledgeville the river has a very tortuous course. The largest tributaries are the Apalachee and Little Rivers.

Principal shoals on the Oconee River.

Stream and location.	Name of shoal or fall.	Length.	Fall.	Distance from Milledgeville.
North Oconee River:		*Feet.*	*Feet.*	*Miles.*
Jackson County	Hurricane Shoal	600	30	71
Do	Tumbling Shoals	600	8	.....
Clarke County	Athens Factory	.....	12	60
Do	Georgia Factory	2,100	21	56
Middle Oconee River:				
Jackson County	Tallassee Bridge	3,600	32	67
Clarke County	McElroys Mills	2,600	23	62
Do	Princeton Factory	.....	15	57
Apalachee River:				
Oconee County	High Shoals	600	50	50
Do	Furlows Shoals	4,200	26	42
Morgan County	Prices Shoals	900	19	40
Little River:				
Putnam County	Old Eatonton Factory	900	25	.....
Oconee River:				
Oconee County	Barnetts Shoals	4,000	54	53
Morgan County	Sculls Shoals	.....	10	41
Do	Parks Mills	.....	8	30
Putnam County	Long Shoals	1,300	12	23
Baldwin County	Milledgeville	26,000	34	.....

The power of the Oconee River is utilized by a large number of flour and grist mills, cotton mills, and smaller hydroelectric developments at Athens, Milledgeville, Eatonton, etc., which furnish light and power to nearby cities.

THE OCMULGEE RIVER.

The sources of the Ocmulgee River are found in Fulton and Dekalb counties not far from Atlanta, and the main stream is formed by the junction of the South and the Yellow Rivers, between Butts and Newton Counties. The river crosses the fall line near Macon, which is the head of navigation. The Ocmulgee drains an area of 6,000 square miles, of which 2,425 square miles are above Macon. Above Macon there are more than 25 important shoals, the longest of which are Lloyd Shoals, Roaches Shoal, Glovers Mill Shoals, and Seven Island Shoals, each capable of developing from 6,000 to 10,000 horsepower.

Principal shoals on the Ocmulgee River.

Stream and location.	Name of shoal or fall.	Length.	Fall.	Distance from Macon.
Yellow River:		*Feet.*	*Feet.*	*Miles.*
Rockdale County	Rockdale Paper Mills	3,365	46	67
Do	Glenn Shoals		12	64
Newton County	Bridge Shoals		4	
Do	Cedar Shoals	2,700	55	57
Do	Dried Indian Shoal	1,500	7	54
Do	Indian Fishery	525	13	49
South River:				
Dekalb County	Flat Shoals		24	65
Do	Albert Shoals		18	63
Newton County	Snapping Shoals	1,500	28	49
Do	Island Shoals	750	16	47
Do	Manns Bridge	3,000	10	45
Alcovy River:				
Newton County	White and Garners Shoals	3,800	85	
Towaliga River:				
Monroe County	High Falls	1,200	97	34
Ocmulgee River:				
Newton County	Barnes Shoals	1,300	14	40
Butts County	Keys Ferry	1,900	8	38
Do	Harpers Shoals	1,500	28	
Do	Lloyds and Capps Shoals	9,500		32
Do	Pitman Ferry	1,650	6	30
Do	Roaches Shoals	4,700	28	
Do	Lamars Shoals	1,000	20	
Monroe County	Glovers Shoals	4,000	16	22
Do	Dames Shoal	1,500	6	15
Do	Long Shoal	4,500	9	
Bibb County	Holton Shoals	3,960		
Do	Macon	10,000	40	

For a complete list of the shoals on the Oconee and Ocmulgee Rivers see the Twentieth Annual Report of the United States Geological Survey, 1898–99, Part IV, Hydrography, pages 166–168.

One of the most important and largest hydroelectric developments yet undertaken in the South is the project of the Central Georgia Power Co., of Macon, Ga. The dam and power house are located at Capps and Lloyds Shoals, near Flovilla, about 30 miles north of Macon. The dam creates a storage reservoir of 4,000 acres, extending about 15 miles up the Ocmulgee River and its tributaries. The dam which has just been completed is of cement and masonry about 1,500 feet long with abutments, one of the largest in the country, and provides for an effective head of 100 feet. Mr. Charles F. Howe, chief engineer of the company, states that four 4,000-horsepower generators directly connected to horizontal turbine units of sufficient capacity to permit of a 25 per cent overload have been installed and there is space for two other units of 4,000-horsepower capacity, making a total of 24,000 horsepower. The dam provides for a spillway approximately 750 feet long. Power is transmitted from the power house at a voltage of 66,000 by a double circuit of 3 wires each to Griffin, Forsyth, and Macon, and a circuit is in process of construction to Monticello, Ga. These four cities will be supplied with current to operate the electric-light plants, the street-car systems, factories of various sorts, etc. The plant will be in operation by the end of January, 1911.

THE MOBILE BASIN.

It will be seen from the chart (fig. 1), November, 1910, Review, that the Mobile Basin occupies a large portion of northwestern Georgia. The rivers of this region drain the southern slopes of the Blue Ridge Mountains, and flow through a hilly, broken country, generally well wooded and only partly under cultivation. There are many shoals and falls suitable for water-power sites that remain quite undeveloped. The following brief description is based on data contained in the Eighteenth Annual Report of the United States Geological Survey, 1896–97.

This area is designated the Mobile Basin because its waters enter the Gulf of Mexico through the Mobile River at Mobile, Ala. Beginning at the headwaters in Georgia the Cartecay and Ellijay Rivers unite at Ellijay to form the Coosawattee River. Just above Resaca this unites with the Consauga to form the Oostanaula River, and at Rome the Oostanaula joins the Etowah to form the Coosa River.

The important water powers in the basin are in the crystalline region or at the western fall line which passes through Carters on the Coosawattee and through Cartersville on the Etowah. The largest powers are on the Etowah River at Cartersville, where there is a fall of 80 feet, and the river has good shoals down to Rome and up to its headwaters. Near Dahlonega there is a fall of 100 feet in half a mile. The Amicalola River is the largest tributary of the Etowah. At Amicalola Falls the river drops 625 feet in less than half a mile. Heard Shoal in Dawson County has a fall of 234 feet. Fine and strong marble, which is extensively used for building purposes, is found in Pickens County where there are four large quarrying companies and several milling and finishing companies using waterpower easily obtained from the mountain streams of this section. All the power now used could be supplied electrically from Heard Shoals. At many points on the Etowah River power has been developed which is used to run grist mills, sawmills and gold stamp mills.

The following table gives for the most important rivers the mean river stages at all river stations and the normal rainfall over the watershed:

Mean river stages and normal precipitation.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Savannah River:													
Carlton	3.4	4.1	4.1	3.2	3.1	3.0	3.0	3.4	2.7	2.5	2.4	3.3	3.2
Calhoun Falls	3.6	4.2	4.1	3.4	3.3	3.4	3.3	3.8	3.3	2.8	2.6	3.5	3.4
Augusta	11.0	12.4	12.1	10.7	8.5	8.6	8.1	8.7	7.9	7.0	7.5	9.0	9.3
Normal rainfall	4.34	5.34	5.07	3.66	3.65	4.85	5.62	6.32	4.05	2.95	2.89	4.47	53.21
Chattahoochee River:													
Oakdale	7.5	8.9	9.9	8.2	7.7	7.5	7.0	7.1	6.2	5.6	5.4	7.2	7.4
West Point	4.4	6.0	6.3	5.0	4.1	3.9	3.6	3.7	2.9	2.6	2.8	4.3	4.1
Eufaula	7.2	11.7	11.9	8.2	6.3	4.4	4.3	5.4	3.4	2.3	2.5	6.1	6.1
Alaga	9.2	13.2	13.2	9.7	9.1	6.4	7.2	6.6	4.8	4.1	3.9	7.8	7.9
Normal rainfall	4.44	5.87	5.42	4.14	3.52	4.39	5.29	5.46	3.55	2.64	2.99	5.06	52.77
Flint River:													
Woodbury	1.6	2.7	2.5	1.6	1.2	.9	.9	1.3	.5	.2	.7	1.5	1.3
Montezuma	6.3	8.0	7.8	6.7	5.8	4.4	4.8	5.1	3.3	2.9	3.2	5.6	5.3
Albany	5.8	9.8	9.4	7.2	4.4	3.0	3.0	4.2	3.3	3.1	2.0	4.5	5.0
Bainbridge	7.0	10.6	11.3	8.4	7.1	4.9	5.2	6.1	4.3	3.6	3.2	5.4	6.4
Normal rainfall	3.75	5.92	5.01	3.77	3.34	4.16	5.37	5.88	3.29	2.49	2.59	4.49	50.06
Ocmulgee River:													
Macon	4.7	8.0	7.6	6.3	4.4	5.0	4.0	4.6	3.3	2.6	2.7	4.9	4.8
Abbeville	7.0	9.2	8.5	6.6	5.6	4.3	3.8	4.7	3.2	2.5	2.4	5.1	5.2
Oconee River:													
Milledgeville	5.4	7.4	6.7	5.1	4.1	4.2	4.2	5.2	3.2	2.8	3.0	5.2	4.7
Dublin	4.9	8.7	7.9	6.1	3.2	3.5	2.8	2.9	1.8	.9	1.1	3.6	4.0
Normal rainfall	4.10	5.29	5.08	3.52	3.17	4.25	4.95	5.40	3.40	2.37	2.76	4.24	48.53

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