

# ANNUAL WEATHER REPORT FOR 1950

## Part B

By J. L. DU TOIT

### Rainfall.

The rainfall for the year at the Experiment Station at Mount Edgecombe was only 26.33 inches, which is well below the twenty-five year average of 36.12 inches and is the lowest rainfall since 1926, except for 1941 when only 24.35 inches were recorded. The rainfall was also badly distributed.

Good rains fell in January, but the important months for the growth of sugarcane, February and March, were very deficient in rainfall, and so was April. The total rainfall for these three months was only 5.38 inches, compared with our average since 1926 of 12.20 inches.

The three months period from September to the end of November was also exceptionally dry, with only 2.74 inches compared with our average of 9.34 inches for the same period. This drought delayed the planting of cane and hampered the growth of young cane considerably, and it was not until December that conditions became really favourable.

December was the wettest month with 7.05 inches of rain on 18 days and the heaviest fall of rain, 2.36 inches, was recorded for 8th December.

The number of days on which rain was recorded during the year, 115, was not very low. The average

The rainfall at the Experiment Station, tabulated by 23 years, is as follows:—

	1950.					Mean 1926-1950 inclusive.					
	Total for month inches.	Aggregate from 1st January	Per cent. of average aggregate.	No. of rain days.	Average rainfall per rain day in ins.	Total for month in ins.	Aggregate from 1st January.	No. of rain days.	Average rainfall per day.	Per-cent. of wet days.	Average rainfall per rain day.
January ...	5.13	5.13	135.7	18	0.285	3.84	3.84	14	0.124	44	0.274
February ...	2.07	7.20	83.7	11	0.188	4.71	8.55	12	0.167	43	0.393
March ...	2.73	9.93	72.9	11	0.248	4.93	13.48	12	0.159	39	0.411
April ...	0.58	10.51	64.6	6	0.097	2.56	16.04	8	0.085	27	0.320
May ...	2.78	13.29	72.1	6	0.463	2.20	18.24	5	0.071	17	0.440
June ...	0.07	13.36	65.9	2	0.035	1.77	20.01	4	0.059	14	0.443
July ...	0.67	14.03	65.1	4	0.167	1.25	21.26	4	0.040	14	0.313
August ...	2.51	16.54	72.9	11	0.228	1.21	22.47	5	0.039	18	0.242
September ...	0.45	16.99	68.9	7	0.643	1.91	24.38	8	0.064	27	0.239
October ...	1.35	18.34	65.5	9	0.150	3.25	27.63	14	0.105	46	0.232
November ...	0.94	19.28	59.6	12	0.078	4.18	31.81	14	0.139	47	0.299
December ...	7.05	26.33	72.1	18	0.392	4.31	36.12	15	0.139	48	0.287
Total ...	26.33	26.33	72.1	115	0.229	Mean	36.12	117	0.099	32	0.309

### Temperatures.

The mean screen temperature for the year at the Experiment Station was 69.3°F., which is well above the average of 1928-1950 of 68.7°.

March was by far the warmest month of the year

number of rainy days is only slightly higher, 117; but average fall per rain day, 0.229 inches for 1950, is of course low and compares unfavourably with our average of 0.309 inches.

The following table shows the number of days that rain exceeded 0.5, 1.0, 1.5 and 2.0 inches:—

	Number of days on which rain exceeded			
	0.5"	1.0"	1.5"	2.0"
January ...	3	3	0	0
February ...	1	0	0	0
March ...	2	1	1	0
April ...	0	0	0	0
May ...	2	1	0	0
June ...	0	0	0	0
July ...	0	0	0	0
August ...	2	0	0	0
September ...	0	0	0	0
October ...	0	0	0	0
November ...	0	0	0	0
December ...	4	3	1	1
Year 1950 ...	14	8	2	1

There were only four months during the year with rainfalls above the average and these were January, May, August and December.

months and compared with the averages of the past

with an average mean temperature of 76.1°, or 3.0° above the average of this month. Normally February is the warmest month with a mean temperature of 74.5°, and January a close second with 74.1°.

In 1950, January was below normal with a

temperature of 73.4° and February slightly above normal with 74.8°. August and the last three months of the year were also below normal; but the temperatures of all the other months were above normal and June was particularly warm with an average mean temperature of 65.0°, or 2.2° above the 1928-50 average.

The coldest months were July and August with mean temperatures of 63.0°.

The hottest day of the year was on October 13th when the maximum temperature was 109.5°, a temperature only once before exceeded at the station, on December 30th, 1941, when it was 113.5°. Other very hot days experienced during the year were on April 4th with a temperature of 100.5°; September 29th, when the temperature was 104°, and on December 6th, when 102° were recorded.

The lowest screen minimum temperature recorded during the year was on July 30th, when the reading was 41°.

The following are the screen temperatures by months in degrees Fahrenheit at the Experiment Station for 1950 compared with those of the 1928-50 averages:—

	1950.					1928-1950 inclusive.			
	Maxi- mum.	Mini- mum.	Mean.	Plus or minus average.	Daily range.	Maxi- mum.	Mini- mum.	Mean.	Daily range
January ..	79.5	67.4	73.4	-0.7	12.1	81.1	67.1	74.1	14.0
February ..	81.2	68.4	74.8	+0.3	12.8	81.7	67.4	74.5	14.3
March ..	83.3	68.8	76.1	+3.0	14.5	80.4	65.8	73.1	14.6
April ..	80.2	62.7	71.5	+1.3	17.5	78.4	62.1	70.2	16.3
May ..	76.2	57.9	67.1	+0.6	18.3	76.0	56.9	66.5	19.1
June ..	75.5	54.4	65.0	+2.2	21.1	72.9	52.8	62.8	20.1
July ..	73.5	52.6	63.0	+1.0	20.9	72.2	51.7	62.0	20.5
August ..	72.0	54.0	63.0	-0.6	18.0	73.3	53.9	63.6	19.4
September ..	75.7	58.8	67.3	+1.4	16.9	74.7	57.2	65.9	17.5
October ..	76.6	59.0	67.8	-0.6	17.6	76.1	60.7	68.4	15.4
November ..	77.5	62.7	70.1	-0.6	14.8	78.0	63.3	70.7	14.7
December ..	78.8	66.4	72.6	-0.4	12.4	80.3	65.7	73.0	14.6
Means ..	77.5	61.1	69.3	+0.6	16.4	77.1	60.4	68.7	16.7

### Atmospheric Conditions.

The mean true atmospheric pressure at the Experiment Station was 29.76 inches, the same as last year and identical to our average barometric pressure. The highest monthly average was recorded in August with 29.93 inches, and January, February and November had the lowest average, 29.66 inches.

The maximum barometric pressure for the year was 30.25 on August 30th, and the lowest 29.15 on the afternoon of September 30th.

The average humidity for the year was 75.8 per cent. saturation at 8 a.m. and 62.7 per cent. at 2 p.m., compared with our averages of 73.3 and 62.8 percent. respectively. The most humid month was March with 84.4 per cent. humidity at 8 a.m. and 69.8 per cent. at 2 p.m.

The total evaporation from a free water surface was 49.43 inches for the year, compared with the average from 1936-50 of 46.74 inches. The past year was therefore characterised by a high evaporation

and a very low rainfall. Only during the months of May, August and December did the rainfall exceed the evaporation. The highest evaporation was during November with 5.80 inches, and the lowest during August with 2.41 inches.

The total hours of sunshine for the year was 2419.9, or 55.2 per cent. of total hours of daylight, which is, surprisingly enough, lower than the previous year when 36.61 inches of rainfall was recorded and only slightly above our average.

The following table records some annual rainfalls and mean temperatures:—

**Table of Rainfall and Mean Temperatures.**

Year.	Rainfall in inches.	Per cent. of present mean.	Number of rain days.	Average fall per rain day.	Mean shade temper- ature.
1926 ...	25.42	70.38	116	0.219	—
1927 ...	42.46	117.55	128	0.332	—
1928 ...	27.56	76.30	114	0.242	67.8
1929 ...	43.83	121.34	129	0.340	67.5
1930 ...	30.03	83.14	123	0.244	67.8
1931 ...	28.01	77.55	112	0.250	68.8
1932 ...	41.36	114.51	126	0.328	69.2
1933 ...	27.14	75.14	109	0.249	68.9
1934 ...	39.42	109.13	127	0.310	68.9
1935 ...	53.25	147.42	111	0.480	66.8
1936 ...	45.36	125.58	110	0.412	67.9
1937 ...	33.21	91.94	101	0.329	68.8
1938 ...	37.97	105.12	117	0.325	68.7
1939 ...	42.87	118.69	134	0.320	68.1
1940 ...	37.31	103.29	108	0.345	69.9
1941 ...	24.35	67.41	107	0.227	69.9
1942 ...	45.41	125.72	116	0.391	69.4
1943 ...	51.32	142.08	124	0.414	68.2
1944 ...	30.32	83.94	105	0.289	69.5
1945 ...	28.50	78.90	105	0.271	68.9
1946 ...	29.55	81.81	110	0.269	69.4
1947 ...	36.74	101.71	131	0.280	68.9
1948 ...	38.66	107.03	122	0.317	69.0
1949 ...	36.61	101.35	115	0.318	69.1
1950 ...	26.33	72.89	115	0.229	69.3
Means	36.12	100.00	117	0.309	68.7

### Rainfall Returns from Various Centres.

The rainfall returns from 44 recording stations along the Natal sugar belt also indicate that 1950 was a year of very deficient rainfall. The average for the year for all the stations is only 30.70 inches, or 75.90 per cent. of the 22 years' average.

Only the two most southerly stations, Port Shepstone and Umzumbi, had rainfalls above the average. In most centres the rainfall was short by 10 to 12 inches for the year, and at quite a few stations the rainfall was short by more than 15 inches. Thus Durban (Berea) was short by 15.58 inches and had

only 61.46 per cent. of the normal rainfall. The Beach at Natal Estates had 25.93 inches for the year or 15.84 inches below normal and only 62.08 per cent. normal. Gingingdhlovu was also short by more than 15 inches and recorded 65.67 per cent. of its normal rainfall.

Illovo had the lowest rainfall of all recording stations with 22.96 inches for the year, or 60.81 per cent. of its normal rainfall.

Although, as already stated, the two most southerly stations had good rains and were above normal, the worst drought-affected area was on the South Coast from the Umgeni to Illovo. The four recording stations in this area had only 64.46 per cent. of their normal annual rainfall.

The rainfall figures for the South Coast, North Coast and Zululand are as follows:—

	Average rainfall for 1950 in inches.	Average for years 1929-1950 inclusive in inches.	1950 rainfall as per cent. of average.
South Coast: mean of 9 stations south of Umgeni River	32.15	41.07	78.28
North Coast: mean of 21 stations between Umgeni and Tugela ... ..	27.85	39.19	71.07
Zululand: mean of 14 stations north of Tugela River ...	34.04	41.94	81.16
Total averages 44 stations .	30.70	40.45	75.90

These figures based on the usual classification show that the North Coast was the most affected by the drought; but even in Zululand, where the drought

Experiment Station,  
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was not so bad as in the other two areas, only 81.16 per cent. of normal rainfall was recorded.

The highest rainfall recorded at any station in 1950 was 47.34 inches at Port Shepstone. Umzumbi, with 44.80 inches, had the second highest rainfall, and there was only one other centre with more than 40 inches and that was Felixton with 42.45 inches.

The averages for 1929-50 show that there are no stations with a normal rainfall under 30 inches; but during 1950 no less than 25 out of the 44 stations had a total rainfall of less than 30 inches, and the average of all stations was only slightly above 30 inches. In fact 1950 was the third driest year since these records were kept; 1941 was, of course, the driest year with only 26.18 inches of rain, and in 1931 only 29.33 inches were recorded.

### Conclusions.

The rainfall during 1950 was deficient for all but two recording stations. The drought was worst in the central sector and many recording stations were 10 to 15 inches of rainfall short for the year.

The distribution of rain left a lot to be desired. The important growing months, February and March, and the planting period from September to the end of November were very dry and affected the crops adversely and delayed planting operations. December was the wettest month of the year.

The annual mean temperature at the Experiment Station was somewhat above the average, with March, and not as usual February, the hottest month of the year.

The evaporation was well above the average.

ANNUAL RAINFALL 1932-1950.

Station.	Recorder.	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.	1950.	Average
Port Shepstone ..	Lightkeeper, S.A.R. & H. . . . .	49.71	40.58	38.55	42.01	49.63	38.25	42.52	44.08	27.66	23.12	54.16	51.65	31.24	33.43	37.14	48.19	38.24	32.69	47.34	42.09
Umzumbi .. .. .	A. H. G. Blamey . . . . .	42.04	36.35	37.50	43.66	51.24	40.63	42.82	42.86	27.74	23.78	51.98	44.86	26.93	31.51	36.61	47.78	39.60	27.33	44.80	39.62
Esperanza .. ..	Reynolds Bros., Ltd. . . . .	38.36	32.81	46.13	43.70	44.74	36.14	41.41	47.31	30.48	19.49	44.29	63.64	39.09	35.30	31.16	55.66	42.13	41.37	30.62	40.89
Renishaw. . . .	Crookes Bros., Ltd. . . . .	41.56	34.43	42.17	42.69	46.10	44.40	36.13	46.90	31.83	25.16	43.33	46.74	35.26	24.35	29.63	49.09	38.41	36.42	28.72	38.67
Park Rynie .. .	Ellingham Estate . . . . .	44.14	37.71	46.53	47.89	52.85	46.10	43.22	56.25	34.46	27.40	47.14	51.25	40.16	31.78	35.30	49.54	42.51	42.54	31.28	42.95
Illovo .. . . .	Illovo Sugar Estates, Ltd. . . . .	36.89	26.94	41.00	39.03	51.65	30.79	43.09	42.22	30.10	26.17	56.12	43.40	30.49	28.85	30.67	53.42	42.14	36.04	22.96	37.76
Umbogintwini ..	African Explosives & Industries, Ltd. . . . .	39.67	36.43	45.59	52.87	53.09	34.78	41.94	48.53	31.26	28.18	51.89	49.16	37.75	31.74	34.91	56.69	43.95	35.51	26.43	41.03
Durban (Berea) ..	Natal Herbarium . . . . .	44.74	31.61	42.28	58.08	46.71	36.09	41.23	47.26	38.35	30.06	51.12	52.97	31.30	28.91	32.49	49.68	42.62	41.68	24.85	40.43
Durban (Point) ..	S.A. Railways & Harbours . . . . .	49.45	34.42	47.45	60.93	56.85	45.84	41.89	62.57	40.99	34.95	58.91	61.86	34.04	28.63	38.91	52.55	41.03	49.15	32.35	46.15
Effingham .. . .	Natal Estates, Ltd. . . . .	30.56	19.63	30.57	46.86	42.28	28.25	32.40	35.33	26.75	22.15	42.90	43.83	29.80	29.03	28.85	44.77	42.89	36.63	22.87	32.61
Westbrook .. . .	Natal Estates, Ltd. . . . .	45.62	31.18	38.49	55.06	52.14	33.56	41.68	45.75	40.05	29.09	52.43	60.15	37.04	33.78	31.18	40.87	44.29	43.40	27.72	40.47
Milkwood Kraal ..	Natal Estates, Ltd. . . . .	33.05	22.15	31.96	43.07	36.45	23.49	34.98	36.24	34.97	23.02	45.03	48.46	27.35	26.70	27.83	40.99	37.99	40.11	23.16	32.85
Mount Edgemombe	Natal Estates, Ltd. (Mill) . . . . .	40.19	30.94	40.03	57.41	49.60	36.55	43.13	46.06	40.23	28.34	51.66	55.40	32.66	30.31	30.66	40.93	41.59	41.24	27.94	40.03
Mount Edgemombe	S.A.S.A. Experiment Station . . . . .	41.36	27.14	39.42	53.25	45.36	33.21	37.97	42.87	37.31	24.35	45.41	51.32	30.32	28.50	29.55	36.74	38.66	36.61	26.33	36.71
Cornubia . . . .	Natal Estates, Ltd. . . . .	42.53	29.98	40.25	59.21	52.27	40.37	44.84	51.66	42.80	30.66	53.17	59.51	35.15	34.78	29.25	43.42	41.90	41.25	28.97	41.34
Burnside .. . . .	Natal Estates, Ltd. . . . .	38.79	27.55	39.61	53.26	47.48	34.01	39.76	48.67	44.91	29.54	50.68	56.39	33.71	32.29	31.81	42.45	39.95	40.66	27.29	39.25
Blackburn .. . .	Natal Estates, Ltd. . . . .	37.52	24.94	33.94	48.78	43.67	34.70	35.45	49.84	36.99	22.68	43.48	51.96	29.73	28.49	27.98	35.50	35.00	39.56	24.89	36.00
Beach .. . . . .	Natal Estates, Ltd. . . . .	51.64	31.53	43.18	59.09	49.19	38.62	44.24	54.88	40.81	28.76	48.74	49.53	33.07	37.26	32.79	48.20	36.81	38.68	25.93	41.77
Saccharine .. . .	Natal Estates, Ltd. . . . .	38.37	29.22	42.38	51.95	55.98	32.07	36.91	42.05	38.41	23.73	46.57	51.70	34.14	32.04	28.83	40.84	36.05	40.02	26.65	38.14
Ottawa .. . . .	Natal Estates, Ltd. . . . .	34.72	28.72	39.08	47.55	44.66	47.32	37.83	41.95	39.18	22.16	52.57	55.35	32.65	27.16	31.69	40.03	36.81	39.12	25.79	37.20
La Mercy .. . . .	Gersigny Bros. . . . .	56.65	31.16	37.64	56.27	45.65	35.17	45.36	49.41	42.63	25.26	53.89	50.86	32.34	31.39	34.87	39.50	34.21	39.54	27.18	40.36
Tongaat. . . . .	Tongaat Sugar Co., Ltd. . . . .	48.79	26.59	38.44	47.54	50.87	35.61	40.85	44.67	40.87	22.72	55.67	53.08	31.37	30.75	33.90	39.84	31.14	34.65	25.45	38.52
Sinembe .. . . .	H. C. Heenan . . . . .	52.71	38.64	49.99	41.84	56.80	35.17	42.07	45.80	43.53	25.25	51.64	50.42	34.15	30.86	33.48	47.21	32.58	45.39	30.51	41.14
Umhlabi .. . . .	G. P. Ladlau . . . . .	49.85	35.13	41.20	53.61	56.57	40.29	56.88	58.14	39.72	29.49	54.74	52.60	37.16	34.25	37.12	43.93	34.67	38.94	30.22	42.92
Chaka's Kraal ..	Waldene Sugar Estate . . . . .	43.09	30.14	35.09	43.38	46.74	32.87	38.40	42.27	30.81	21.78	47.42	44.33	31.01	32.15	30.67	39.01	31.31	39.72	28.85	35.79
Tinley Manor .. .	Sir J. L. Hulett & Sons, Ltd. . . . .	47.44	35.44	41.20	50.97	56.83	38.38	46.35	48.93	41.10	24.37	47.73	47.78	32.49	27.46	32.59	45.08	33.38	40.14	28.02	40.06
Riet Valley .. .	H. E. Essery . . . . .	54.64	37.98	47.70	44.33	65.99	35.28	41.96	51.39	45.90	27.37	54.75	61.35	39.17	36.31	33.68	45.75	31.98	51.50	36.16	43.38
Kearsney .. . . .	Sir J. L. Hulett & Sons, Ltd. . . . .	55.49	37.45	53.57	38.42	64.34	39.73	44.30	47.46	50.80	31.91	49.74	58.02	37.05	32.67	39.18	47.95	34.22	52.74	30.32	43.83
Darnall .. . . .	Mrs. Mann . . . . .	44.14	25.45	49.91	44.04	56.32	40.68	45.56	44.65	48.48	25.49	48.19	54.84	43.26	34.88	32.28	46.62	31.17	49.18	31.66	40.81
Darnall .. . . .	Sir J. L. Hulett & Sons, Ltd. . . . .	52.27	29.22	48.24	40.23	52.09	39.75	43.74	43.80	47.10	25.27	46.02	52.45	38.59	28.46	30.58	41.27	30.54	48.55	28.87	39.74
Mandini .. . . .	St. Andrews Estate . . . . .	50.98	27.41	55.34	45.88	51.25	35.34	40.86	38.34	41.01	26.70	48.91	56.67	41.28	30.24	30.41	47.18	26.84	44.94	34.29	40.04
Amatikulu .. . .	Sir J. L. Hulett & Sons, Ltd. . . . .	47.16	29.86	47.66	43.41	47.86	35.38	37.24	47.53	50.40	27.80	48.87	55.37	39.08	28.45	26.34	38.61	25.21	44.39	26.67	38.70
Gingindhlovu ..	P. C. Lilburn . . . . .	53.85	33.08	50.91	53.16	52.68	39.62	40.10	54.12	53.75	30.35	56.40	62.73	47.02	36.28	29.98	42.55	30.28	51.64	28.71	43.72
Mtunzini .. . . .	G. V. W. Roberts . . . . .	61.97	40.03	59.28	53.02	55.62	43.57	44.23	65.11	62.16	39.08	60.31	66.31	53.71	50.98	39.63	50.17	39.95	54.77	35.71	50.00
Eshowe. . . . .	District Forest Officer . . . . .	65.05	47.31	71.85	46.18	66.61	47.56	46.40	52.55	70.67	36.57	47.44	68.80	50.17	45.40	41.57	52.04	37.37	58.34	39.85	50.74
Felixton .. . . .	Sir J. L. Hulett & Sons, Ltd. . . . .	69.08	31.43	58.72	50.16	58.71	51.96	38.62	54.99	61.15	30.08	53.45	52.48	48.62	37.62	39.40	56.43	41.40	51.22	42.45	48.64
Empangeni West..	W. H. Simpson . . . . .	48.32	22.92	41.08	36.40	36.62	39.10	32.93	47.01	41.24	24.50	40.74	48.47	38.05	28.64	25.00	37.62	25.20	43.51	29.93	36.19
Empangeni Rail ..	F. S. Mann . . . . .	49.58	27.72	45.60	37.28	47.54	45.31	35.99	52.02	53.46	26.79	48.11	54.13	44.67	33.98	33.13	50.85	31.78	50.64	39.15	41.72
Empangeni .. . .	Zululand Sugar Millers & Plant- ers. . . . .	55.34	29.55	48.72	38.18	49.48	47.87	33.49	51.79	53.11	24.54	45.06	50.05	39.56	30.78	33.21	50.88	31.85	51.36	38.91	41.74
Kulu Halt .. . .	S. B. Forrest . . . . .	66.55	30.15	48.26	35.03	48.39	56.80	36.95	52.91	57.61	23.97	52.28	55.73	43.02	32.45	31.75	50.74	30.35	51.84	37.19	43.52
Mposa .. . . . .	W. Springorum . . . . .	59.33	25.43	46.45	29.59	46.81	51.80	33.08	47.63	51.62	20.58	43.56	44.64	34.04	29.49	28.05	42.86	27.79	44.06	37.60	38.75
Kwambonambi ..	S. Larsen . . . . .	64.34	29.35	64.21	34.27	41.64	49.37	33.42	42.91	53.82	20.81	47.01	50.75	36.50	28.38	27.44	39.43	28.04	44.53	31.83	40.69
Eteza .. . . . .	Haworth Bros. . . . .	59.43	29.85	44.05	25.73	42.21	49.95	35.98	41.26	61.81	22.04	41.15	54.36	33.55	26.90	24.47	36.29	27.12	52.47	29.44	38.53
Riverview .. . .	Umfolzi Co-op. Sugar Planters, Ltd. . . . .	51.29	25.05	37.36	21.44	35.98	39.45	36.33	39.93	54.95	16.45	38.92	50.42	36.11	33.97	22.83	28.06	19.98	43.41	24.79	34.19
		48.37	31.15	44.74	45.83	50.13	39.57	40.33	47.68	43.48	26.18	49.40	53.31	36.45	31.99	32.02	44.83	35.25	43.35	30.70	40.45

Note.—The 1929 and 1931 records have been omitted for lack of space.

C. F. M. Hibberd takes the place of S. B. Forrest in 1951 returns.