

The Forest Department at Kenya has a tree which, at four years from planting out, was 30 feet high, and the trunk at breast height measured 17½ inches.

Many of the experimental plantings have been so highly successful that further supplies of seed will be distributed with a view to permitting further sowings to be made.

It is a matter of interest that it has been found that kamarere has successfully withstood 4 degrees of frost, and also that trees have succeeded on upland country as well as under riverine conditions.

METEOROLOGICAL DATA, KIETA.

By B. G. Challis.

The town of Kieta, situated 6° 13' S., 155° 39' E., on and in the hills about the western and southern shores of Kieta harbour on the east coast of Bougainville Island, is the principal administrative centre of the Kieta District. The harbour is extremely well sheltered from prevailing winds, especially in the north-west season, by the protecting nature of the surrounding country, which is extremely mountainous. These mountains extend to the north, west and south of the harbour and reach from 1,000 to 3,000 or more feet above sea level within five to ten miles from the town.

Above the 3,000-ft. altitude, about six miles from the sea, rain falls almost every day and mists and fogs are common, while at lower altitudes nearer the sea the rainfall is not so heavy but is more or less seasonal. In Kieta itself the force of winds is greatly reduced by the high mountains surrounding the harbour, and consequently the temperature there is hotter than in more exposed localities; and for the same reason the rainfall in the harbour is also affected. The average annual rainfall for the past 21 years is 119.19 inches.

Sea-planes could descend on and ascend from the harbour safely, and there is a small privately owned aerodrome just outside the southern boundary of the town.

The basic rocks round Kieta give rise to a stiff clay soil except on the sandy foreshores. In some cases, close to Kieta the foreshore is higher than the land at the base of the foothills where water tends to collect. The country rock comes close to the surface and there is a good deal of erosion as for example in Toberoi some six miles away. The surrounding gullies contain talus materials which have fallen from the higher hills behind.

The Government Geologist, Mr. N. H. Fisher, M.Sc., reports as follows on the geology of this district:—

“The topography of the inland portion of Bougainville is exceedingly rugged. Mountains rise to a maximum height of 10,000 feet and in general the country consists of streams occupying steep-sided gorges between mountain ridges. In

many places, some near Kupei gold-field (six miles from Kieta), sharp peaks or fjoets occur with nearly vertical, bare rock faces. The mountainous country is bordered by a coastal flat usually a few miles wide on the north-east side of the island, while on the south-west, at Empress Augusta Bay, this coastal flat comprises an extremely large tract of country which is separated from the Moroni, Pungkuna area by a series of river gorges. In the upper reaches of the Kavarong, a reasonable extent of river flats and terraces are found. Climate at Kupei is generally warm in the morning, wet in the afternoon and cool at night . . .

At Kieta itself a tuffaceous conglomerate occurs in association with a porphyritic augite andesite.*

The rainfall is high and evenly distributed throughout the year; there being practically no difference between wet and dry seasons. The north-west season is from October to February and the south-east season from March to September. The annual average relative humidity for 9 a.m., 3 p.m. and 9 p.m. readings is 75, 78 and 84 per cent. respectively.

Unfortunately, apart from the Government Station at Kieta, rainfall data is not available on the Island of Bougainville except at Hakau Coffee Estate some forty (40) miles north of Kieta, on the east coast.

The Department of Agriculture would welcome rainfall records from plantations prepared to furnish such meteorological records in this district.

Rainfall records at Kieta and Hakau are set out in the following tables:—

MONTHLY AND YEARLY TOTALS OF RAINFALL AT KIETA DISTRICT (IN POINTS).

STATION—KIETA.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Yearly Total.
1917 ..	1,388	1,150	3,367	1,050	1,327	604	1,635	1,005	1,255	930	1,520	732	16,933
1918 ..	1,298	683	1,733	814	756	987	1,304	1,537	1,274	741	678	502	12,307
1919 ..	497	736	790	1,738	550	882	557	822	869	817	684	873	9,815
1920 ..	1,286	921	1,901	519	1,060	1,911	1,377	322	388	1,177	1,034	952	11,078
1921 ..	1,040	1,027	1,475	1,069	585	1,350	2,231	598	1,595	1,352	1,044	1,870	15,836
1922 ..	1,557	1,157	885	2,161	730	1,214	517	194	884	1,125	980	1,124	12,528
1923 ..	819	825	1,148	723	1,513	1,431	690	830	759	662	1,144	987	11,537
1924 ..	1,656	553	*	*	202	249	489	1,087	1,766	872	*	*	*6,874
1925 ..	479	603	1,352	2,243	698	980	519	2,029	914	776	710	133	11,430
1926 ..	902	558	388	1,434	1,128	447	1,278	1,716	1,134	1,007	1,212	1,265	12,460
1927 ..	1,952	3,602	1,010	1,350	1,345	644	919	804	628	718	850	1,217	15,048
1928 ..	515	2,134	1,051	1,196	1,482	413	1,533	940	824	2,701	1,287	610	14,695
1929 ..	709	*	862	811	675	587	707	1,603	1,302	1,102	632	525	*9,575
1930 ..	1,149	717	430	773	1,350	666	1,129	835	605	970	200	1,034	9,918
1931 ..	1,540	818	1,101	1,205	929	1,044	858	540	1,209	603	1,554	1,002	12,463
1932 ..	946	1,196	683	647	994	388	912	1,038	678	411	502	1,602	9,997
1933 ..	703	1,567	733	2,036	893	559	1,220	1,800	571	1,159	669	1,338	13,248
1934 ..	1,941	842	878	905	450	1,202	1,533	1,148	524	871	487	1,000	11,781
1935 ..	563	995	865	726	1,020	394	502	219	165	903	1,165	357	7,874
1936 ..	873	722	743	393	406	1,100	900	504	407	1,278	1,569	413	9,308
1937 ..	771	279	1,161	783	830	737	1,741	385	1,003	623	715	538	9,572
Average	10.80	10.55	10.83	11.31	0.01	8.76	10.75	9.93	8.93	9.04	9.35	0.03	119.19 inches

* 1924 and 1929 incomplete.

METEOROLOGICAL RECORDS.
HAKAU COFFER ESTATE (40 MILES FROM KIETA).

Month.	1937.		Rainfall.		Wet days.	
	Rainfall.	Wet days.	Period.	Average.	Period.	Average.
January ..	10.68	15	2 years	11.75	2 years	17
February ..	1.41	12	2 years	18.43	2 years	16
March ..	9.58	18	2 years	13.53	2 years	10
April ..	10.21	12	2 years	8.49	2 years	9.5
May ..	11.70	11	2 years	7.36	2 years	12.5
June ..	5.16	10	2 years	4.48	2 years	10
July ..	9.76	20	2 years	9.31	2 years	16.5
August ..	4.85	9	2 years	6.35	2 years	12.5
September ..	6.72	15	2 years	5.58	2 years	14.6
October ..	6.29	15	2 years	8.07	2 years	10
November ..	2.53	10	3 years	11.95	3 years	11.7
December ..	7.72	13	3 years	5.28	3 years	11

Average Annual Rainfall for 2 years, 1936 to 1937—111.18 inches.
 Rainfall for 1937—89.61 inches.

TERRITORY OF NEW GUINEA.

ANNUAL RAINFALL.

District.	Number.	Locality.	Rainfall, 1937.	Years recorded.	Average.
SEPIK ..	1	Aitape ..	110.12	17	99.23
	2	Wewak ..	97.10	9	88.11
	3	Angoram ..	106.34	3	95.08
MADANG ..	1	Madang ..	119.16	20	140.11
	2	Kulili ..	130.71	3	143.60
	3	Urit-Kurum ..	134.41	13	115.07
MOROBE ..	4	Ramu ..	75.47	4	77.56
	1	Baiuno ..	74.09	4	67.65
	2	Bulwa ..	63.88	3	60.20
	3	Bulolo ..	61.78	7	56.06
	4	Edie Creek ..	114.65	8	106.58
	5	Kaiyapit ..	93.87	10	85.15
	6	Otibanda ..	51.11	2	57.24
NEW BRITAIN ..	7	Salamaua ..	187.55	..	..
	8	Sattleberg ..	188.76	13	176.55
	1	Arawe ..	204.82	4	176.89
	2	Gasmata ..	267.73	20	244.53
	3	Keravat ..	103.29	8	104.74
	4	Kokopo ..	65.41	11	83.10
	5	Kolai ..	225.04	5	200.50
	6	Lindenhafen ..	308.60	18	225.75
	7	Notre-Mal ..	158.07	9	164.40
	8	Palmamal ..	200.62	6	205.37
	9	Pondo ..	199.93	11	170.58
	10	Rabaul ..	98.00	24	88.75
	11	Rapopo ..	74.46	5	80.12
	12	Ring-Ring ..	337.72	3	297.76
	13	Sum-Sum ..	200.95	5	140.32
	14	Talasea ..	200.40	20	172.24
NEW IRELAND ..	15	Tobera ..	83.50	7	81.07
	16	Watnabara ..	135.38	14	121.77
	1	Kalili ..	227.18	14	192.44
	2	Kavieng ..	116.04	21	120.34
	3	Katu ..	142.03	2	151.34
	4	Matandeduk ..	123.83	2	111.93
KIETA ..	5	Namatani ..	143.43	20	136.90
	1	Hakau ..	89.61	2	111.18
	2	Kieta ..	95.72	21	119.19
MANUS ..	*3	Rugen ..	113.34	5	102.47
	1	Lorengau ..	143.19	20	150.60
	2	Pelleluhn ..	80.68	8	120.40

* - 1936. (Figures for 1937 incomplete.)

(See accompanying map.)