

The construction works of the Department continue to be closely interwoven with local-government activities. Several works on which the Government is assisting financially are being carried out by the Department, at the request of the local bodies concerned, and during the year control of the area in the Elstow Drainage District lying to the east of the Awaiti Canal has been handed over to the Elstow Drainage Board.

During the summer destructive swamp fires again caused heavy loss of flax and further economic waste in expenditure by the Department and flax-millers in fire-fighting. The reduction of the fire menace is the first essential to the utilization of river-bank lands where flax is now growing naturally and other lands which are unsuitable for ordinary settlement, and it cannot be too strongly urged that consideration be given to the question of fire-prevention, particularly in the direction of the formation of fire districts as suggested in previous annual reports.

Following the example of previous years, extra work has been undertaken for the relief of unemployment. This year an endeavour has been made to increase the volume of construction in order to provide more employment, and as a result much useful work has been accomplished.

During 1929 rain fell at Kerepeehi on 155 days, and the total fall for the year was 41·05 in. The average fall at Kerepeehi over a period of fourteen years (1916–29) is 44·56 in., average number of days with rain being 153. Total rainfall figures at three stations are available for 1929 from records kindly supplied by voluntary observers—viz., Kopuarahi, 42·67 in. ; Kaihere, 48·90 in. ; Waitakaruru, 46·74 in. The following schedule has been compiled from the Kerepeehi rainfall records:—

RECORDS OF DAILY PRECIPITATION, KEREPEEHI, HAURAKI PLAINS.

Year.	Number of Days, with given Daily Precipitation in Inches.													Total Days.	Total Fall.	Wettest Month.	Driest Month.
	0·00 to 0·49.	0·50 to 0·74.	0·75 to 0·99.	1·00 to 1·24.	1·25 to 1·49.	1·50 to 1·74.	1·75 to 1·99.	2·00 to 2·49.	2·50 to 2·99.	3·00 to 3·99.	4·00 to 4·99.	5·00 to 5·99.	6·00 to 7·00.				
1916 ..	109	12	9	7	2	3	..	1	..	..	1	..	..	144	52·19	Nov.	6·65
1917 ..	131	11	4	4	3	..	1	1	1	..	..	..	..	156	45·61	Feb.	6·26
1918 ..	145	14	6	4	..	1	..	..	1	..	..	..	..	171	44·06	Oct.	7·47
1919 ..	122	9	1	3	2	..	..	..	..	..	..	..	..	137	27·36	July	4·52
1920 ..	85	7	10	3	1	1	3	2	..	..	..	..	..	112	43·16	Feb.	6·10
1921 ..	93	12	5	3	2	..	..	1	..	..	..	..	..	116	34·41	Oct.	5·89
1922 ..	101	17	9	3	..	1	1	..	1	..	..	..	..	133	42·81	Feb.	6·62
1923 ..	151	6	5	4	..	1	1	..	..	..	..	..	1	169	47·04	April	9·76
1924 ..	132	8	10	5	2	5	1	1	..	2	..	..	..	166	60·37	April	8·55
1925 ..	142	15	4	2	..	..	..	1	..	..	..	..	..	164	37·64	June	6·67
1926 ..	149	15	6	4	5	2	2	..	..	..	..	..	..	183	55·53	May	8·86
1927 ..	159	10	6	5	..	4	..	..	..	..	..	..	..	184	45·33	July	6·29
1928 ..	125	7	9	2	3	2	2	1	..	..	..	..	..	151	47·30	May	7·52
1929 ..	124	19	8	3	1	..	..	..	..	..	..	..	..	155	41·05	April	5·09
1930* ..	17	1	2	2	2	..	..	1	..	..	..	..	..	25	11·84	Jan.	6·87

* First three months of year only.

Average annual rainfall over fourteen years is 44·56 in.

The reclamation works and general construction operations briefly reviewed below represent a stage in the policy of progressive development which is the aim of the Department. Road construction and metalling has been a prominent feature in the year's activities, and good progress has been made with flood-control and drainage-works.

DREDGES.

The dredging operations carried out on the Piako River over a period of years are having a marked effect on the river regime. The improved tidal propagation due to channel enlargement is a great assistance to land-drainage. Minor floods that formerly would have been severely felt on the low-lying lands now pass to the Gulf practically unnoticed, and each year there has been considerable increase in the length of stopbank raised to final level. The river-improvement works have now reached a stage when some channel-enlargement above Kaihere Landing can be carried out without risk to the river-bank lands down stream from this point. One dredge commenced work during the year on the reach between the Waikaka Canal and Patetonga Landing and two dredges have been operating below Kaihere Landing.

As the required width of the improved river-channel in the lower reaches is too great for bank delivery with the type of excavator on the works, No. 19 land dredge has been converted from dipper excavator to drag-line with 105 ft. boom. This necessitated extensive structural alterations, including special provision for moving the plant—which now weighs over 40 tons—over marshy ground. Now that some initial difficulties have been overcome the performance of this machine appears to be satisfactory and economical, and the plant will be the means of saving a considerable amount of rehandling of excavated material.

A useful addition was made to the excavating-plant during the year in the form of a light drag-line excavator weighing about 10 tons, to be used for the construction and reconditioning of drainage ditches of medium size. The boom length is 25 ft. and bucket-capacity 10 cubic feet.