

losing themselves in swampy country, are conveyed to the Wairau by artificial channels.

Below Rose's Overflow cut the Opawa down to its reunion with the Wairau will be referred to as the "Lower Opawa."

PHYSICAL FEATURES.

The Wairau River rises in the Spenser and St. Arnaud Mountains, which attain to an altitude of 7,000 ft. Its approximate length before entering the sea at Cloudy Bay is 100 miles. On the north side of the river precipitous hills rise very close to the river, while on the south side a very considerable area of river-plain extends before reaching the foothills. Roughly speaking, over two-thirds of the drainage area of the main river is on its right or south side.

Near Renwicktown the Wairau bifurcates and a subsidiary channel known as the "Opawa River" has been formed, which, after flowing through the eastern portion of Blenheim, rejoins the main Wairau River near its outlet to the sea. According to the evidence of old settlers, the Opawa River, the bed of which is now a considerable width, was at one time a very small stream, and its present dimension is due to the overflow from the Wairau during exceptionally high floods having gradually cut a larger and larger channel, so that now, even when the Wairau is at normal level, a fair amount of water flows down the Opawa channel.

Above Renwicktown the Waihopai flows into the Wairau. This tributary drains a large area of country. Near its junction with the Wairau a small subsidiary channel known as "Gibson's Creek" has been formed, which in the past has been fed by the Waihopai when in flood and endangered the Township of Renwicktown. Protective works have been carried out here in order to cope with the threatened damage.

The Omaka River, which formerly, in conjunction with the Fairhall and Taylor Rivers, ran through Blenheim, has recently been cut off east of Renwicktown and diverted by a cut into the Opawa channel, thus augmenting the flood-discharge of the Opawa, but at the same time reducing the flood-discharge by way of the old Omaka channel through the principal portion of Blenheim.

The Tuamarina River, which has its headwaters near Picton, flows down a comparatively narrow valley bounded by precipitous hills on either side. The bed of the valley is more or less of a flax and raupo swamp, through which the river-channel meanders as a very sluggish stream until it is crossed by the railway, when the channel becomes well defined with solid banks on both sides. Although the whole valley-bottom above the railway-crossing is at present a very wet swamp, there appears to be no reason, judging from the available fall, why the partial drainage of this area should present any great difficulty.

The Pukaka Stream has no defined channel after it debouches from the hills, and except for the construction of certain main drains carried down to the Wairau River would flow over the intervening swamp lands. As it is, during exceptionally heavy rains these drains fail to prevent flooding of the low-lying plains on the left bank of the Wairau. These lands are also more or less subject to flooding from floods in the Wairau itself.

The drainage areas of the Wairau River and its tributaries are approximately as follows:—

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| Wairau River : Main branch, including all tributaries on the left bank down to but not including the Tuamarina, and all tributaries on the right bank down to but not including the Waihopai | 1,100 |
| Waihopai River and its branches | 340 |
| Omaka River and its branches | 60 |
| Fairhall River and its branches | 50 |
| Taylor River and its branches.. .. . | 20 |
| Tuamarina River | 40 |
| Pukaka Stream | 20 |
| Total | 1,630 |