

In 1927 the rainfall of 132·3 in. was both abundant and well distributed to meet the requirements of plantations.

An anemometer, which has been needed for years, was secured, and records were obtained from the 1st June. The new instrument is of the Dines pressure type, registering both direction and velocity, and embodies the latest improvements.

Upper-air Investigation.—A total of eighty-nine small rubber balloons were inflated with hydrogen and released; sixty-eight of these were observed to heights greater than 5 km. (16,400 ft.), and thirty-one to heights greater than 10 km. (32,800 ft.). Since upper-air observations were initiated in 1923 about four hundred balloons have been sent up, which have yielded data showing the approximate height and velocity of the trade-winds, but information in regard to the variation of the height with season and with changes of pressure will necessitate carrying on this investigation for several years.

Atmospheric Electricity.—The measurement of the electric potential of the atmosphere has been continued at the station in the Observatory grounds, and the records, with the exception of a few brief interruptions due to a failure of the insulation of the recording-apparatus, have been unbroken.

Solar Radiation.—The solar radiation has been measured on all clear days on a Gorcynski pyrheleometer. The average solar energy transmitted from 12 to 1 o'clock during the dry season was approximately 1·1 calories per square centimetre, showing that nearly 43 per cent. of the sun's energy fails to pass through the atmosphere. The total solar energy transmitted through the atmosphere overlying Samoa does not exceed that which Dines has found was received at sea-level in England.

Outside Stations.—A new station has been established at Pukapuka (Cook Group). The Union Islands stations at Fakaofo and Atafu continue their useful work. The Native observers have shown that they may be trusted with instruments, and that confidence may be placed in their observations. It is expected that this year a barometer and a continuously-registering thermometer will be added to the equipment of one of the stations in the Union Group.

The South Pacific weather-report system, for which Apia is the co-ordinating centre, includes the following stations: Papeete, Tahiti; Avarua, Rarotonga; Niue; Nukualofa and Vavau, Tonga; Suva, Fiji; Norfolk Island; and Ocean Island. Throughout the year a wireless report from these stations is broadcast at 10 p.m. by the local wireless station, and during the wet season an additional report is broadcast at noon. The total number of weather reports received by the wireless station during the last six months was 1,582.

Twelve rain stations transmit their observations to the Observatory.

Miscellaneous Activities.—A time signal was given to the Post Office Department daily at 9 a.m. The error of the standard clock was determined by transit observation on twenty-eight occasions, and the daily rate has been extraordinarily constant. For shipmasters and Government Departments, five barometers were compared with the Observatory standard, and four chronometers rated.

FINANCE.

REVENUE.

The statement hereunder shows the amount of revenue received during the financial year ended 31st March, 1928, including a subsidy contributed by the New Zealand Government. There is also shown, for purposes of comparison, the revenue for the preceding financial year:—

Head of Revenue.	1926-27.	1927-28.
	£	£
1. Native taxes	17,849	2,466
2. Customs, taxes, and Marine—		
(a) Customs and taxes	64,923	73,540
(b) Harbour Department	2,398	2,858
(c) S.s. "Lady Roberts"	1,752	3,812
3. Fees and charges (Court, hospital, &c.)	11,988	8,308
4. Post Office and Savings-bank	6,441	5,729
5. Radio-station	2,970	2,586
6. Miscellaneous	5,491	6,739
7. Subsidy, New Zealand Government	20,000	20,000
Totals	133,812	126,038

NOTE.—As regards head 1, "Native taxes," because of the political disturbance at present existing only a small portion of the annual taxes has been paid. To make up the deficit the New Zealand Government placed on loan to the Samoan Treasury the sum of £30,000 as required.

The revenue received through the Customs and Harbour Department for the year was exceptionally good, and this offset the other shortage to some extent.

The usual subsidy—viz., £20,000—contributed by the New Zealand Government during the past several years for educational and medical purposes was continued.