

apparatus was set up in November, 1924, and since then measurements have been taken on all occasions when conditions permitted.

*Upper-air Work.*—The research on winds at high altitudes has been carried on during the year: sixty-one pilot balloons were released, and thirteen were followed to a height of 10 km. or more. An extreme height of 16·5 km. was reached on the 10th October. Reduction of all observations, including also those of 1923, are now well advanced, so that publication of the results may be expected in June or July. These will furnish facts regarding the heights above sea-level attained by the south-east trades—information long desired for theoretical study, but recently more urgently and more practically needed by aviators intending trans-Pacific flights. A paper giving a *résumé* of the upper-air observations up to that time was presented by the Director to the Physics Section of the British Association meeting at Toronto, 1924.

*Atmospheric Electricity.*—Potential gradient records have been taken throughout the year at the land station in the Observatory grounds and at the Lagoon House, a special observation-house built on concrete pillars about one-third of a mile from the shore. An article was published in the September, 1924, issue of the *Journal of Terrestrial Magnetism*, giving a summary of the observations from April, 1922, to April, 1924.

The results from the Lagoon House during the year June 1923–24 were not satisfactory. In collaboration with the staff of the Department of Terrestrial Magnetism, new apparatus was designed to overcome the special instrumental difficulties caused by the prevailing high humidity. The new device has been found efficient, and the records from this station are now of a high order.

The tidal records, which were first undertaken with a view to interpreting the potential gradient observations on the basis of a changing water-level underneath the instrument, have since been made use of in giving further data for forecasting tides. Officers of the United States Coast and Geodetic Survey have undertaken a considerable share of this computation in addition to the final harmonic analysis on their magnificent tide-predicting machine.

*Time Service.*—A time service, accurate to two-tenths of a second, has been maintained throughout the year. Accuracy in the standard clock has been regularly verified by weekly meridian observations. Correct time was supplied daily to the Post Office Department, and bi-weekly to the pilot station for firing the noon gun. Eight chronometers have been rated during the year, mostly for the small trading-vessels going to the island groups.

*South Pacific Weather-reporting System.*—The Observatory prepares twice daily a weather report, which is sent to the pilot station and to the wireless station for broadcasting. The reports from Papeete (Tahiti), Nukualofa (Tonga), Norfolk Island, and Vila (New Hebrides) have been carefully analysed. During the year no cyclonic storms were reported as having occurred in the Pacific throughout the area between the Equator and the Tropic of Capricorn and east of the 165th meridian east. The weather-reporting system has been greatly aided by the unfailing courtesy and help of the officer in charge of the wireless station and his staff.

*Ocean Currents.*—Bottle-drift papers and supplies have been distributed to ships, and co-operation courteously promised. Only four out of the one hundred and fifty bottles thrown overboard in the South Pacific have so far been received; all were found in Fiji, and indicate a persistent westerly drift of the surface waters in the latitude of Apia.

#### PUBLIC TRUST OFFICE.

During the past year this Department has progressed steadily in the cleaning-up of the various branches of work now coming within its compass, and thus has considerably increased its value to the community.

*Public Trust Office Work.*—Much work has been accomplished in realizing with satisfactory results estates which have been placed in the hands of the Public Trustee for administration. Some of these estates had been neglected for many years before coming into the hands of this office, and in several which were regarded as almost hopeless of realization the assets have been disposed of to the complete satisfaction of all parties.

*Clearing Office Work.*—A great deal more has been done in finalizing the accounts of ex-enemy subjects not now resident in the Territory, and with the exception of a little revision this may be said to be complete. Considerable sums have been remitted direct to deportees in accordance with the promise of the New Zealand Government.

*Official Assignee Work.*—The number of bankruptcies occurring in Western Samoa is not large, but this is no doubt to a certain extent contributed to by the very extended local credit system. There was only one bankruptcy declared during the year.

*General.*—The operations of the Public Trust Office during the year again resulted in the office being self-supporting. An actual profit of £631 18s. 10d. was made during the year after providing for all charges. The amount advanced on mortgages and securities to planters and others as at 31st March, 1925, was £8,791 0s. 4d.

#### CROWN ESTATES DEPARTMENT.

The year just closed has been the most successful experienced since this Department was constituted, the profits from all sources amounting to approximately £22,000. This has fully justified the decision arrived at in December, 1923, to place the running of the Department under a Board of Control.

Whilst maintenance costs have, by a more economically sound distribution of labour, been reduced by some £17,891 as compared with the previous year, the output of copra has been increased by some 310 tons—the production for the year as compared with the previous year being as follows: 1923–24, 2,428 tons 4 cwt. 0 qr. 24 lb.; 1924–25, 2,738 tons 19 cwt. 2 qr. 16 lb.; increase, 310 tons 15 cwt. 1 qr. 20 lb.