Seventy-seven connections to the main were made, which now serves a population of eight hundred Natives. Owing to Mau influence in this district willing labour was not always obtainable, with the exception of loyal Natives, and the work did not progress as quickly as usual.

Afega.—This system has functioned satisfactorily, and a branch main was led to supply the Malaefono plantation. The cleaning-out of the intake, sluicing of mains, and minor maintenance has been carried out by the Natives, with periodic inspections by the Department.

Lotofaga.—Temporary repairs were made to this supply, and a number of old pipes renewed. As soon as more urgent schemes are dealt with it will be necessary to reconstruct the system in order that greater benefits may be derived.

Aufaga.—Scheme was inspected, new washers fitted to taps, and Natives instructed in the carrying-out of minor repairs.

Satitoa.—Taps and washers were renewed and repaired, and a thorough inspection of the scheme made.

Fagamalo.—Although this scheme functioned satisfactorily at the commencement, it has had to receive a considerable amount of unnecessary attention in consequence of malicious interference with the mains at the intake and interference with valves.

Concrete Cisterns.

Standard reinforced-concrete cisterns of 12,000 gallons capacity were erected at Letui (Savai'i), Satoi (Manono), and Atafu (Tokelau). A catchment area for the Satoi cistern was erected, and all guttering and downpipe renewed on the Letui Church, which serves as a catchment area. Minor repairs were carried out on the Auala mass concrete cistern, and the bathing and drinking pools were improved. Owing to the present unsettled condition of the Natives the water-supply schemes for Lealatele and Salailua have been postponed. Pipes for the Mulifanua and Vailele water-supplies were lost in the sinking of the "Clan McWilliam," and the schemes are held up pending arrival of another shipment.

Surveys and Malagas.

Malagas of inspection by the Engineer in Charge were made at frequent intervals on both islands.

Plant.

A new three-sider planing-machine was installed in the workshop, and has proved a valuable addition to the plant. A new circular-saw bench was lost in the sinking of the "Clan McWilliam," and is to be replaced at an early date.

Damage to Administration Property.

Owing to the number of Natives congregated in Apia in connection with the Mau movement, it was found necessary to remove all kerosene street lights and abandon the service, as lamps were smashed with stones and also stolen. In addition, bridge handrails have been hacked with knives, signposts on the beach-front destroyed, and fire-plug signs broken. The Apia water-supply has been tampered with by interference with valves, and the public have been considerably inconvenienced.

APIA OBSERVATORY.

The year 1927 is the twenty-fifth year since the founding of the Apia Observatory by the Imperial Society of Gottingen, and the seventh year under the control of the New Zealand Government. During this period the programme has been limited mainly to an intensive investigation at Samoa of terrestrial magnetism, meteorology, and seismology. After making due allowance for the local effects of land, it is possible with the inclusion of a relatively small number of observations on board ships and on islands to extend our knowledge of these elements over a wide area. The nature of our position in the middle of the Pacific induces a uniformity in the variations which occur, not only in the climatology of the Samoan Group and their surroundings but in the local conditions of terrestrial magnetism as well. The programme of the routine observations of the Observatory has therefore been kept unaltered, to discover minute secular changes, and as circumstances permitted an effort has been made to include investigations in solar radiation and other fields in geophysics. The whole activities for 1927 may be embraced under the general headings of "Terrestrial Magnetism," "Seismology," and "Meteorology," which will be dealt with in order.

Terrestrial Magnetism.

From the recording-instruments continuous photographic records were obtained of variations in the earth's magnetism. Visual observations afforded twenty-six independent determinations in absolute units of the horizontal magnetic force, ninety-two determinations of declination, and eighty-six of inclination. By means of these fundamental determinations, average hourly values obtained from the photographic records were expressed in absolute units. The average value of the declination, horizontal and vertical force for each of the past three years, based on the mean of all the hourly values, is here given. The declination data show that the north end of the magnetic needle during the past three years has been directed farther and farther east of the true north :—

Magnetic Elements at Apia, 1925–27.

	Declination : East.	Horizontal Force : Gammas.	Vertical Force : Gammas.
Mean, 1925	10° 22·8′	35239	20453
Mean, 1926	10° 26·1′	35216	20446
Mean, 1927	10° 29·4′	35223	