THE LEJAY GRAVIMETRIC SURVEY OF THE PHILIPPINES

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Using a gravimeter of his own invention, Rev. Pierre Lejay, S. J., Director of the Zi-Ka-Wei Observatory, conducted a gravimetric survey of the Philippines from January 28 to June 4, 1938. All in all, two hundred and four determinations of gravity were made, taking Manila Observatory as the fundamental base and covering the archipelago with a net of 194 secondary stations distributed as follows: one in each of the islands of Culion and Busuanga, two in each of the islands of Cuyo and Dumaran, three in each of the islands of Palawan and Samar, eight in Bohol, eleven in Cebu, sixteen in Negros, seventeen in Panay, twenty in Mindanao and one hundred and ten in Luzon.

Two main difficulties were encountered in the accurate reduction or quick determination of the value of gravity. The first is ignorance of the elevation of many places above sea level, due to the lack of an hypsometric survey of the islands. The second is the instability of the pillar of observation, on account of microseisms. The first difficulty does not affect in any way the value itself of gravity, but renders uncertain its reduction to sea level, inasmuch as an error of five meters in the elevation of a place, introduces an error of one milligal in the Bouguer anomaly. To offset this difficulty the elevation of each station was measured with an altimeter or high class aneroid barometer. The second difficulty was experienced mainly