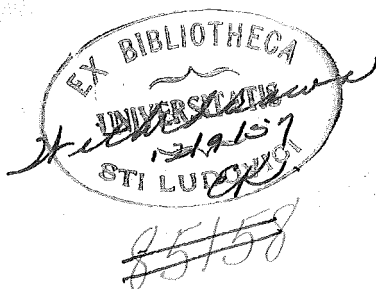


Geophysics Dept.

SEISMOMETRIC STUDY  
OF THE MODERATELY DEEP EARTHQUAKE OF  
JUNE 24, 1935



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## I. INTRODUCTION

### A. Statement of the Purpose of the Investigation

One of the recent developments in the field of seismology is the establishment of the fact that deep earthquakes do occur. Once the deep earthquake was accepted, intensive study of particular deep earthquakes followed. Most naturally one of the first objects of interest was to study the characteristics of a deep earthquake, to determine the precise depth of focus, and to establish travel times for the various waves which started many kilometers below the earth's surface. Among the very first to prepare travel time tables for deep earthquakes were K. Wadati and his colleagues. F. J. Sgrase, the Rev. V. C. Stechschulte, S. J., and the Rev. C. J. Brunner, S. J. have contributed very much to the construction of travel time tables, as well as to pointing out the characteristics of a deep earthquake. Up to the present, however, only earthquakes with depth of focus of the order of 300 to 700 kilometers have been studied.

The original purpose in taking up this study was, as it were, to fill in a gap, for as yet no extensive investigation

has been carried out on earthquakes having an intermediate focal depth. The travel time tables available for earthquakes of intermediate depth are based on calculations. One of our aims was then to compare the travel times of an intermediate earthquake with the calculated tables for earthquakes of the same depth of focus.

Besides studying an intermediate earthquake from the viewpoint of the travel times of the various earthquake waves, and to compare them with others, there is also the added purpose of noting whether there are peculiarities of a moderately deep earthquake which are not found in a shallow or very deep one.

To carry out such a study the earthquake of June 24, 1935, has been taken. This earthquake occurred in the region of the New Hebrides, toward noon of June 24, 1935. The time and place and focal depth, as given in the Preliminary Bulletin of the Central Station of the Jesuit Seismological Association, are:  
 $H = 23^{\text{h}}23^{\text{m}}12^{\text{s}}$ , G. M. T.;  $\lambda = 167.5^{\circ}$  E.;  $\phi = 15.3^{\circ}$  S.;  
 $h = 140$  kilometers.