

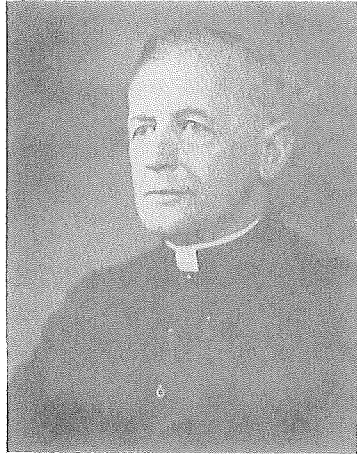
CHAPTER XXII

WESTON SEISMOLOGICAL OBSERVATORY, WESTON, MASSACHUSETTS

By Daniel Linehan, S. J.

Late in the year 1928, Georgetown University through the kindness of its Rector, Reverend Coleman Nevils, S. J., and the Director of the Observatory, Reverend Francis A. Tondorf, S. J., donated a pair of Bosch-Omori pendula (25 kilograms) to Weston College. Reverend E. P. Tivnan, S. J. then Rector of Weston College had been interested in erecting a seismic station at Weston and it was through his efforts that Georgetown University donated this equipment. Reverend Henry M. Brock, S. J., was appointed Director of the Station.

Some months passed before the equipment was put into operation. Several locations were tested, but the station was finally located in the basement of the "Mansion" where bedrock was but a few feet below floor level. In July, 1930, the first records were put on the drums, but even then, due to lack of experience, it was doubtful if the equipment was in proper adjustment and nothing short of an intensity 10 quake would have been recorded. In December of that year Reverend Frederick W. Schon, S. J. of Georgetown University visited the station and adjusted the instruments. The first



Reverend Henry M. Brock, S. J.
Director, 1928 - 1935



Reverend George A. O'Donnell, S. J.
Director, 1935 - 1940



Reverend Michael J. Ahern, S. J.
Director, 1940 - the present



Reverend John A. Blatchford, S. J.
Assistant Observer, 1930-1934, later Director
of the Winchester Park Seismological Station
at Kingston, Jamaica

earthquake was recorded in January, 1931.

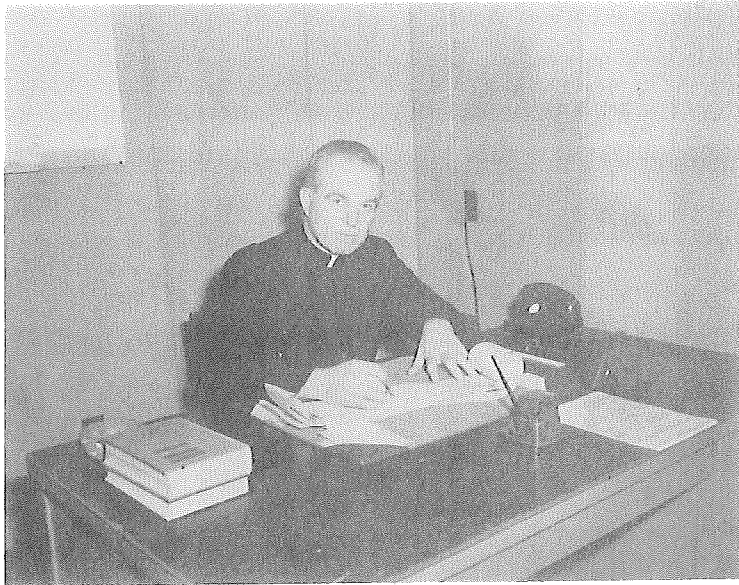
During this inaugural period many men were responsible for the labor of beginning the station. Besides the interest of Fathers Tivnan and Brock, the theological students Messrs. T. H. Quigley, J. A. Blatchford, T. D. Barry and B. F. Doucette, of the Society of Jesus, were responsible for the many hours of work and testing that went into building the station and erecting the equipment.

Reverend T. H. Quigley, S. J., was the first observer and held that post until succeeded by Reverend J. B. Doherty, S. J. Father Doherty was succeeded by Reverend D. Linehan, S. J., in the summer of 1934.

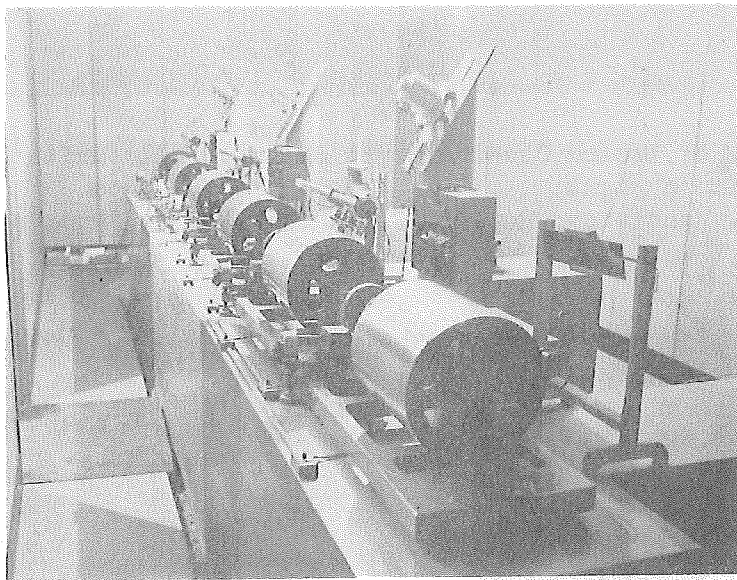
In August, 1934, Reverend F. J. Dolan, S. J., Rector of Holy Cross College, Worcester, donated the Wiechert (80 kilogram) that had been installed at that College in 1909. The Wiechert was installed in the same vault with the Bosch-Omori.

Reverend G. A. O'Donnall was appointed Director of the Station in 1935 and retained that post until 1940.

In the summer of 1935 friends of Reverend M. J. Ahern, S. J., took the occasion of his twenty-fifth anniversary of the priesthood to raise a fund to purchase better seismic equipment for Weston. It was decided to purchase Benioff (100 kilogram) pendula with long and short period recording assemblies. In October of that year the fund was presented to Father Ahern and the instruments ordered.

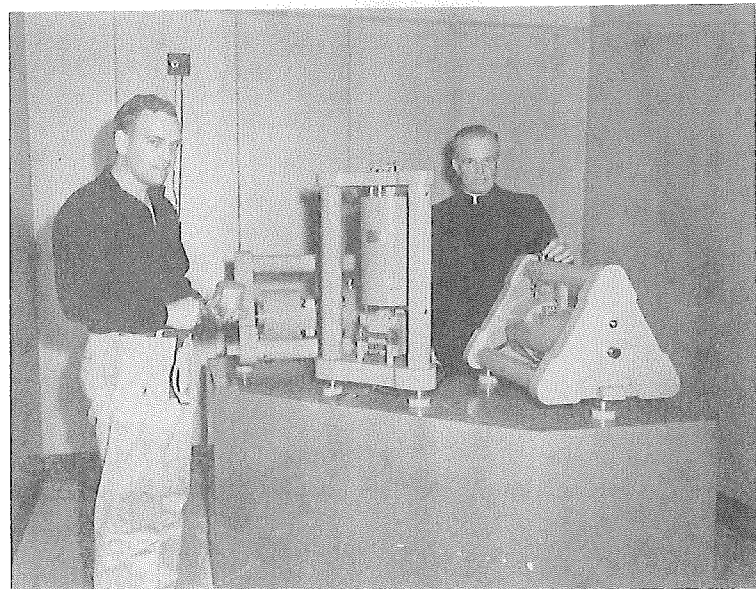


Reverend Daniel Linehan, S. J., Director



Benioff Long and Short
Period Recording
Assemblies

Weston
Observatory



Benioff (100 Kg.) Seismometers
Weston Observatory
Mr. Sexton, Reverend D. Linehan, S. J.



One of Weston Observatory's Seismic Field Units
Left to right:
Mr. Manciwicz, Rev. F. J. Donohoe, S. J., Mr. Sexton



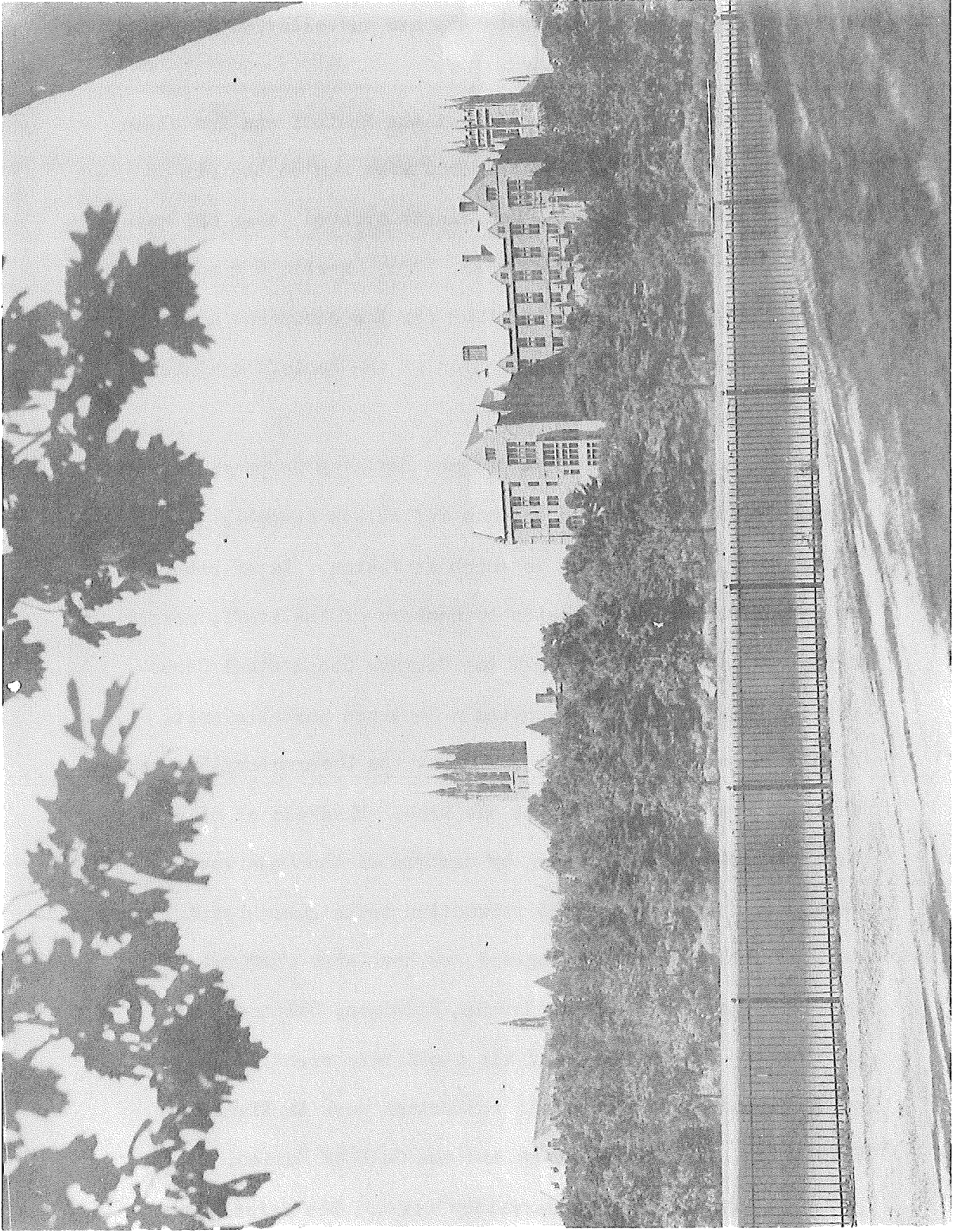
Portable Seismic Field Unit - Weston Observatory
Reverend D. Linehan, S. J., and Mr. Manciwicz

Preparations were made to house the new installation near to the Bosch-Omori and Wiechert.

The vertical component of the Benioff was installed in July, 1936, and the first records were run on the 6th of this month. The horizontal components arrived later and were put into operation on November 11, 1936. Weston's greatest benefactor both in making the fund for the equipment a success and also arranging for the erection of the Benioff equipment was Mr. James F. Burke of Boston.

In 1939 the Humble Oil and Refining Company, Houston, Texas, donated a 12 trace seismic reflection assembly to the Observatory to be used in research at Weston. Later other equipment was built at Weston by members of the staff, mostly for refraction work. In 1949 the Century Geophysical Corporation, Tulsa, Oklahoma, donated a 24 trace portable unit. With this assembly of field equipment the Observatory has had several crews in the field at one time. Hundreds of miles of territory have been surveyed by members of the Observatory using for the most part the refraction technique. Besides conducting this work in New England, we have also operated in New York, New Jersey, Pennsylvania, Michigan, Oklahoma and California. Some members of the staff have spent time working with seismic crews engaged in reflection work in Illinois, Mississippi, Louisiana, Texas and the Gulf of Mexico.

While Weston Observatory was not the first group to operate shallow refraction surveys in New England it is



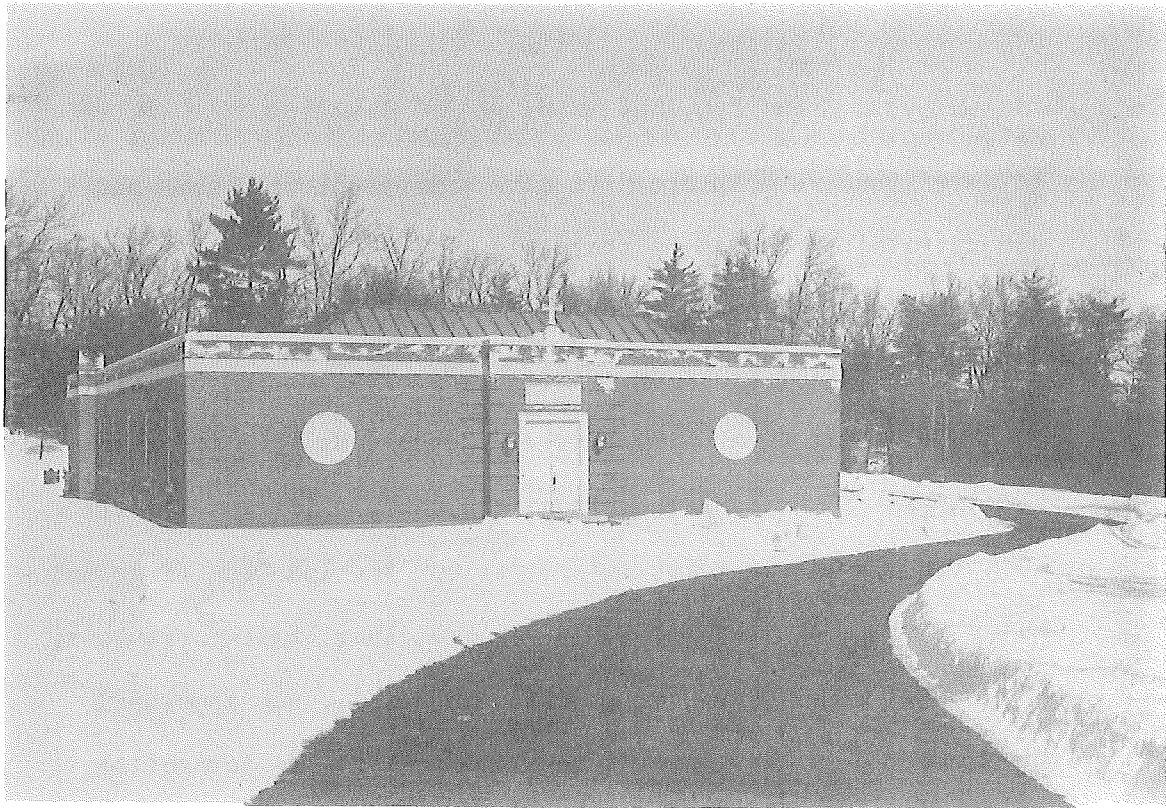
Boston College, Chestnut Hill, to whose Department of Geophysics Weston Observatory belongs.

believed that we have operated more surveys in this area and demonstrated to engineers that this method can be used economically in many of their problems. Applications have been made to the design and location of State highways; for the location of damsites and type of subsurface conditions to expect; for foundations of buildings, bridges and other edifices; for the location of tunnels under waterways; for the location of ground water supplies in glaciated regions and other similar problems.

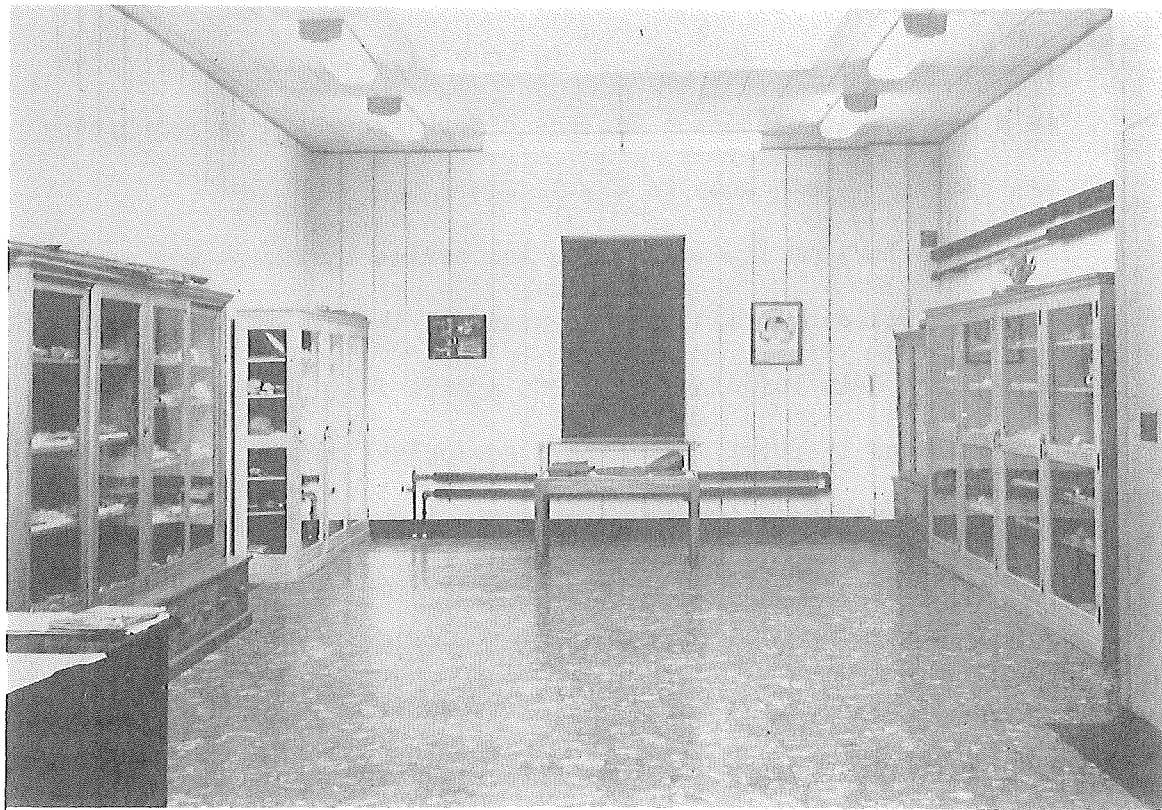
In 1940 Reverend M. J. Ahern, S. J., was appointed Director of the Observatory and has held this appointment to the present time.

Although the Observatory has been connected to Boston College since its opening, this connection was informal with Boston College exercising no jurisdictional right over the Station or its personnel. In 1947 it was formally accepted as a Department of Boston College offering courses in geophysics and geology to students in the Graduate School.

In 1949 the scientific and office equipment was moved to a new building built for the needs of the Observatory staff and work. This building has 7,000 square feet of floor space and contains 15 rooms including a geological museum, offices, library, instrument rooms, electronic laboratory, garage for field units, dark rooms, etc. The building was designed in 1946 and begun during that year. Already with added departments and material we already feel crowded. In the construction of this building our most interested and greatest



Weston Seismological Observatory



Section of Geological Museum, Weston Observatory

benefactor has been His Excellency, Archbishop Richard J. Cushing of Boston.

The Observatory staff has published over 100 separate articles exclusive of the regular monthly and bi-monthly Station and Observatory Bulletins. Members have been engaged in several Governmental projects such as the construction of earthquake proof buildings in the West Indian Region; effect of explosions on private dwellings; the location of submarine explosions by seismic methods; the study of subsurface conditions in limestone regions; and many studies on water supply sources in various States. At the start of the last World War, we were requested to send in daily reports on microseismic conditions and received a letter of commendation from the Chief of one of the Departments thanking us for suggesting and inaugurating this study. At the close of the War the Navy Department took over this study.