

CHAPTER XI

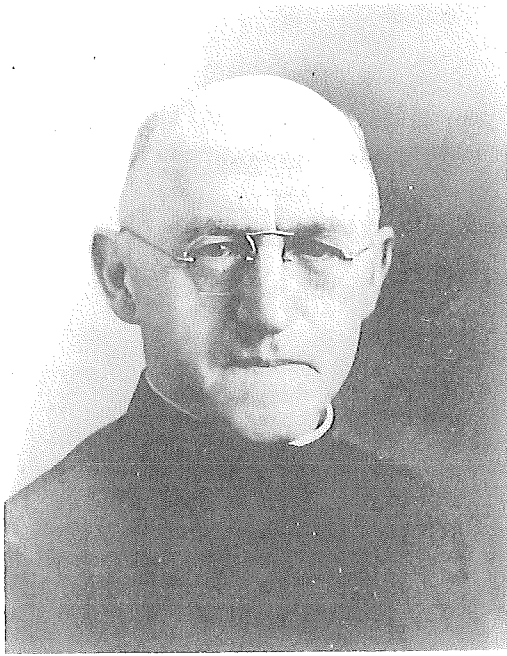
MARQUETTE UNIVERSITY SEISMOLOGICAL STATION

MILWAUKEE, WISCONSIN

By Joseph F. Carroll, S. J.

When Father Frederick Odenbach, S. J., received permission from Superiors to place seismographs in the various Jesuit colleges of the United States, he chose Marquette University as one of the locations. He felt that the strategic positions of these locations would be such as to furnish data which, when pooled at a central station, would give valuable information on seismic disturbances. The instruments chosen for his purpose were of the Wiechert 80 Kilogram horizontal type.

The Wiechert instrument was delivered to Marquette University in 1909. Father James McGeary, head of the Physics Department from 1907 to 1912, took charge of its installation. Father McGeary had a good scientific background for this task. He had spent two years as assistant to Father Jose Algue, S. J. in the Manila Observatory and had helped to plot the paths of typhoons with the use of Father Algue's Barocyclonometer. The Manila Observatory was long famous for its seismology as well as for its typhoon warnings in the Philippine Islands and throughout the Far East.



Reverend James L. McGeary, S. J.
Founder and First Director of the
Marquette University Seismological
Station



Reverend John B. Kremer, S. J.
Director, 1916 - 1927



Reverend Albert H. Poetker, S. J.
Director, 1927 - 1931



Reverend Charles K. Hayden, S. J.
Assistant to the Director, 1931-1933

Father McGeary chose the north-west corner of Johnston Hall, at Twelfth and Wisconsin Avenue, as the location of the Wiechert seismograph. Here he sank a shaft 3 feet by 3 feet cross-section and 12 feet deep. He poured the concrete pier and had it protrude about two feet above the surface of the floor of the room. In other words the pier is 14 feet high. This pier, free of floor, rests on a firm lithologic foundation, which, in turn, rests on limestone. Time is recorded each minute by marks made electromagnetically by a Bausch and Lomb siderial contact clock. From the time of installation, Father McGeary became a well-known figure to the papers and to the people of Milwaukee. Without the machine he had given some very valuable information on the Messina quake of December 31, 1908. His answers were the cause of considerable interest in earthquakes. On January 1, 1910, the seismograph recorded the earthquake which accompanied the eruption of Mount Pelee in Martinique. This caused great interest in Milwaukee and established the importance of the study of seismology. It may be added that Father McGeary was also an astronomer of some note and is quoted extensively in 1909 on sunspots, Cook's discovery of the North Pole in 1910, and Halley's comet in 1910. He left Marquette University in September, 1912.

Father Ignatius Kircher, who is at present at St. Louis University High School, took Father McGeary's



Reverend Joseph F. Carroll, S. J.
Present Director of the Marquette University
Seismological Observatory

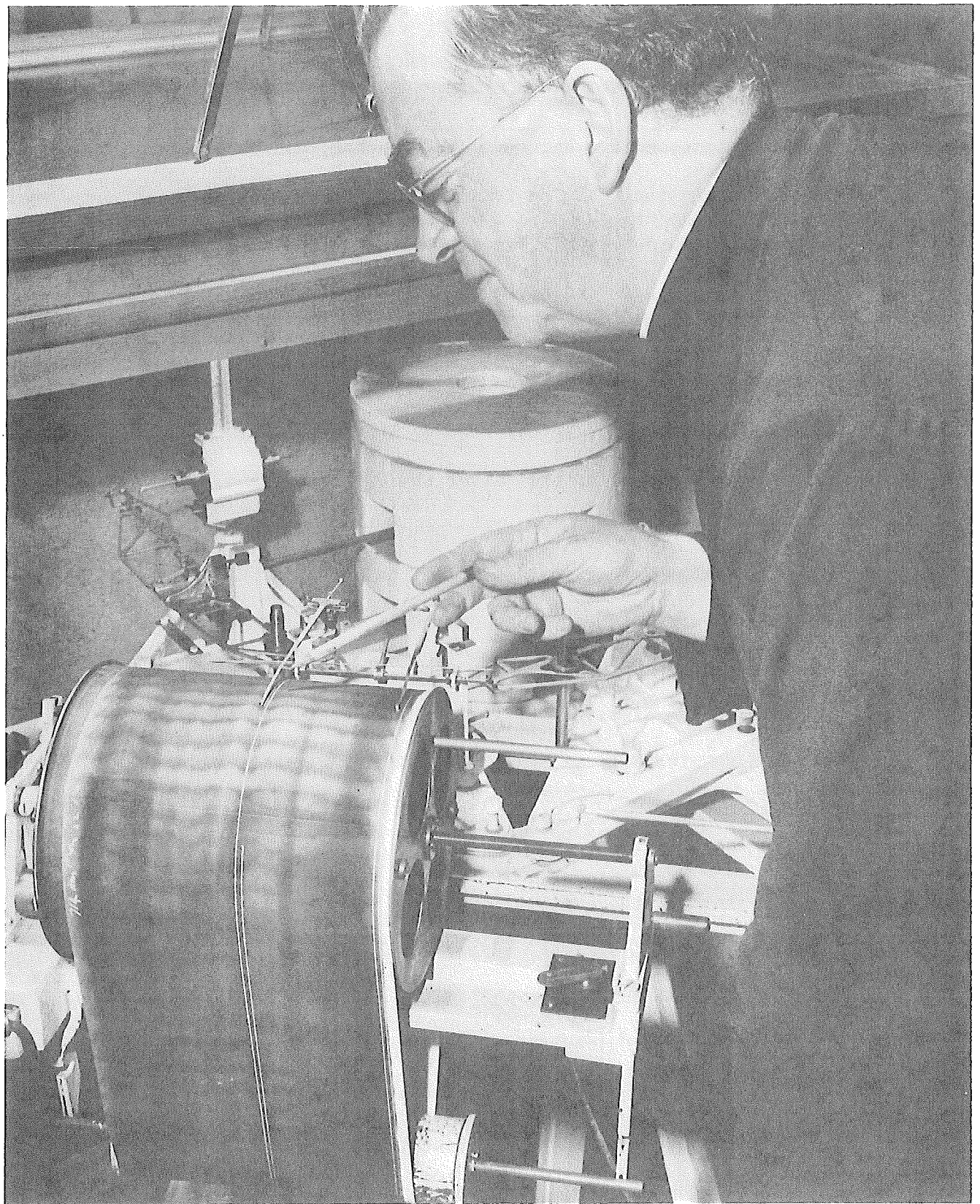
place as seismologist, and continued the routine work of caring for the station till 1916, when Father John B. Kremer of the University of Detroit came to Marquette as head of the Physics Department and seismologist. Helping him with the routine work of changing records and reporting earthquake data from 1920 to 1922 was Joseph F. Carroll, S. J. Father Kremer, before becoming a Jesuit, had been an engineer in the United States Navy. A great deal of his work in the Navy consisted of charting the depth of the oceans. He brought with him to Marquette a wealth of practical information which made his teaching of engineering physics a signal success. Father Kremer died of pneumonia in 1927.

As successor to Father Kremer Marquette chose Father Albert Poetker, and the choice was a very happy one. The University was growing rapidly in all its colleges and departments. Courses in intermediate and graduate physics had to be organized and built up, and Father Poetker carried through this work. His scholastic attainments, enthusiasm and untiring zeal spelled success in his various undertakings. He had been Professor of Physics at St. Louis University before going to Europe for his theological studies. After the completion of these studies he transferred to Johns Hopkins University where he secured his Doctorate in Physics. On coming

to Marquette, besides administering the Physics Department, teaching intermediate and graduate branches, and directing the Radio Station WHAD, he found time to study the theory of earthquakes and direct the seismological station. He did a thorough job sending in his reports to the central station at St. Louis University. It was due to Father Poetker that those who followed him found things easy and in ship-shape order. Father Poetker left Marquette in 1931 to become President of the University of Detroit and Marquette was the loser.

After Father Poetker's departure, Father Charles Hayden, at present Dean of Men and Professor of Physics at Creighton University, was appointed to teach Physics and direct the Station till 1932, when he returned to St. Louis University to finish his studies for his Doctorate in Physics.

From 1932 to the present, Father Joseph Carroll is the Chairman of the Physics Department and the Director of the Seismological Station. After completing his theological studies at Valkenburg and Exaten in Holland, he spent two years at the University of Munich and three years at the University of Bonn on the Rhine studying Physics, Mathematics and Chemistry. He received his Doctorate in Physics at Bonn in 1932. After returning to Marquette in 1932, he met his old friend, the Wiechert Instrument, which he had cared for from 1920 to 1922. He realized that seismology had made great strides in the United States due to



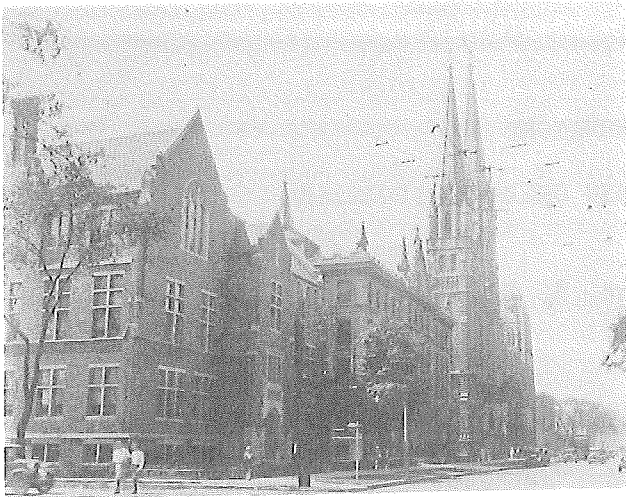
Father Carroll adjusting the Wiechert 80 Kg. Seismograph

the introduction of more sensitive instruments and the development of the science in the hands of able men. It was felt that the Wiechert instrument which did good work in the past, and still does good publicity work for the University lacked sensitivity. Still, the people of Wisconsin look to Marquette for all its information on local tremors, and confirmation of all large earthquakes which may occur at any part of the earth. In May, 1947, when a local quake took place, the Marquette station, the only one in Wisconsin, was deluged with calls. It was estimated that the University on that occasion received about \$25,000 worth of publicity.

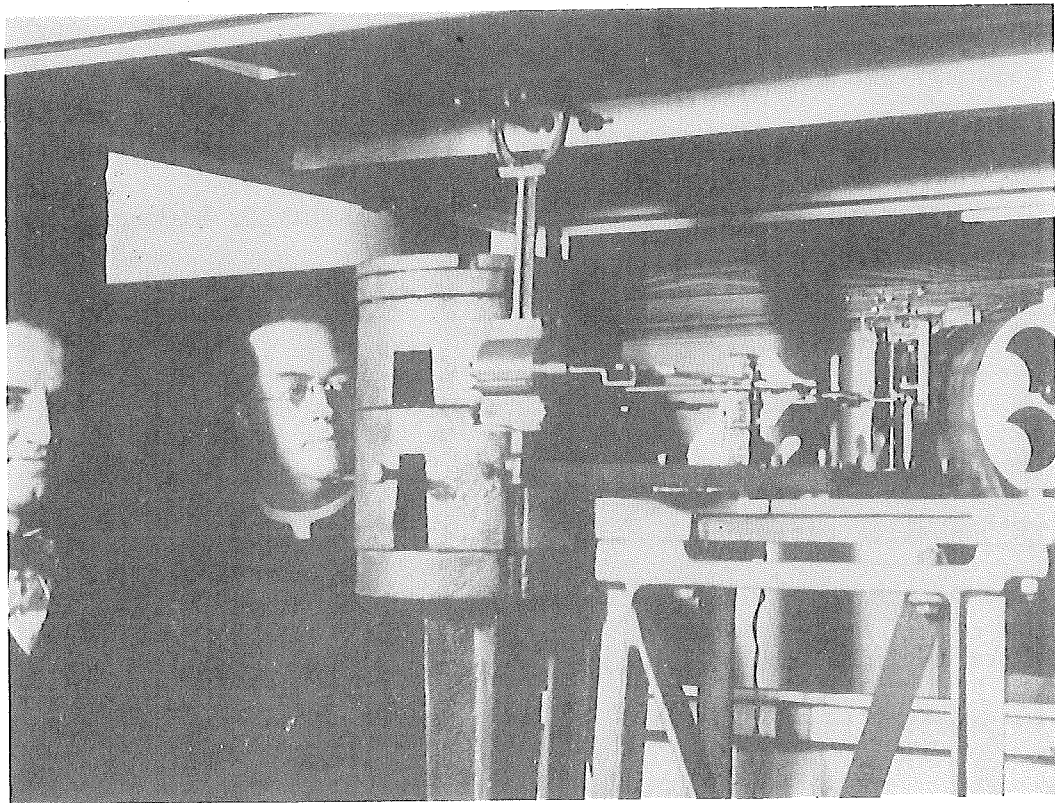
Plans are being drawn up just now for the extension of our Science Building. This includes the doubling of the space which is used at present by the Physics Department. Included in these plans is a large room in the basement for a new seismograph station. After discussing the difficulties with the head of the Central Station, the newest and most sensitive instruments will be installed. Money has been already pledged for two units. Until that day has dawned, the Wiechert instrument will continue to be the sole source of seismic information in Milwaukee and in the state of Wisconsin.

It may not be out of place to add a postscript to the statements already made. There is another seismograph in the Nunn Busch Shoe Factory here in Milwaukee. It is under the direction of Elmer Rexin, the maintenance engineer.

It is a disused artesian well 380 feet deep. It is the narrow limb of a huge U-tube, the other limb being Lake Michigan. A very light float rests on the surface of the water in this well. The surface is about 85 feet below the surface of the earth. This float is attached to a light cotton string; this string is brought over a pulley and held taut by a counterweight. On the shaft of the pulley is a recording drum rotating on an endless screw. As the float bobs up and down on the top of the water in the well due to changes in atmospheric pressure, or seismic disturbances, a pen resting on the record-paper records the data. Elmer Rexin expects, with the extra equipment that he is gathering together to determine the presence of acoustical and high frequency waves, if any, which might accompany earthquakes. Elmer Rexin keeps the Marquette Station fully informed of all the results he obtains on his instruments. His carefully kept records may some day add, at least a small chapter, to the Science of Seismology.



Marquette University looking west down Wisconsin Avenue - The Seismological Observatory is in Johnston Hall on the nearer side of the Church



Father Carroll demonstrating the Wiechert seismograph to a visitor