

CHAPTER I

THE FORERUNNER - THE JESUIT SEISMOLOGICAL SERVICE

By James B. Macelwane, S. J.

Father Frederick L. Odenbach, S. J., had been assigned to the faculty of John Carroll University, then Saint Ignatius College in Cleveland, Ohio, in the fall of 1892. Two years later Brother George E. Rueppel, S. J., followed him to Cleveland and together they established a meteorological observatory which began observations in 1896. In 1900 Father Odenbach, at the urging of Brother Rueppel, built his first seismograph, thus initiating American Jesuit investigation in the field of seismology.

From this time forward, Father Odenbach dreamed of a cooperative scientific effort on the part of the Jesuit institutions in the United States and Canada. The opportunity came with the invention by Professor Emil Wiechert of the Geophysical Institute of the University of Goettingen, Germany, of sensitive seismographs, utilizing an inverted pendulum and recording on smoked paper. The Wiechert seismographs were of two kinds -- a larger type and a smaller, less costly, but also less sensitive, type. The latter was constructed and offered for sale by the firm of Spindler and Hoyer in Goettingen at the astoundingly low price of \$112.00, including a \$30.00 standard electrical contact clock.



Brother George E. Rueppel, S. J.

Knowing that it would be futile to suggest a large outlay of funds for a project as yet untried, Father Odenbach chose the latter type; and under date of February 2, 1909, he addressed a letter to all the Jesuit colleges and universities of the United States and Canada which was as follows:

"Some years ago Professor Willis L. Moore, chief of the United States Weather Bureau, remarked to me that he thought the Society to be in a position to lead all other institutions in developing the science of meteorology. Owing to its network of colleges in all parts of the world and the centralization of its government it could do work of quality impossible to any other institution.

"It struck me very forcibly at the time, but I knew that, under existing circumstances, the stations would represent a demand for funds and men which seemed to be beyond our means.

"At present another chance offers itself, which is equally tempting, and which I think might be taken advantage of by quite a number of our colleges. In short, with a small outlay at a number of our colleges (the more the better) we would be in a position to do the great thing in seismology.

"An International Association of States has been formed for the purpose of organizing a seismic service over the whole world with a central station at Strassburg.

"The United States has joined, and Harry Fielding Reid has been named by the President as the representative for this country. Now, whatever he may succeed in doing, this is certain, our Society can make a move which cannot be duplicated unless the Government should organize a bureau of seismology. It is this -- to organize a system of observatories with the same kind of instrument handled in the same way and these stations to be fairly well scattered N-S-E-W

over the continent. Seismograms produced by instruments of different makers are hard to compare and therefore a set of uniform grams such as we could furnish would be a Godsend to seismologists..... And if, following our example, others of the Society in different countries were to join in the movement, the result would be unique. It could hardly be duplicated.....

"Now as to the requirements: They are few and I hope you will find them within reach. Looking to the price, the efficiency and the ease with which it may be installed and tended, there seems to be little doubt that the Wiechert pendulum as furnished by Spindler and Hoyer of Goettingen is by far the favored instrument. The price is \$112, including the packing and shipping. If, as will be the case in many of our colleges, there is someone who can arrange a good clock with minute and hour contacts, then \$30 may be subtracted from the above sum. The instrument is of first-class make and has produced some of the very finest records published by the Strassburg central bureau. It records local as well as distant tremors. It will require a space one meter square and one and one-half meters high. It may be located in a corner of a basement where it is not damp and where there is not much vibration caused by walking, machinery, or the like. The tending is very simple and consists in renewing the smoked paper at some fixed hour of the day (best at an hour which will give you any data on the sheet in time for some favorite paper just going to press) and the winding of the clock, all of which would not take five minutes per day. The current expense is very little, the paper amounts to a sheet ninety centimeters by twenty-two centimeters per day, a petroleum lamp, and a cell or two for the contact clock. The lamp and a contrivance to smoke the paper may be ordered from the firm but may just as well be fixed up at home. The price of the instrument, such as it is, I consider very low, but I think we could get a reduction on an order of a dozen or more.

"This, dear Father, is the idea I proposed to Reverend Father Provincial a day or two ago and he was highly pleased with it and allowed me to write this circular letter to all the colleges of our province. I shall, however, send it abroad also, for the more extensive the network, the greater the value of the grams we shall be able to catch.

"Now dear Father, if you think you can join in this movement to the great benefit of your institution, the glory of our Society, and the honor of that Church which has been proclaimed an enemy to all modern progress and enlightenment, please drop me a line of encouragement so that I may proceed in this important work and send you more detailed information."

This letter, together with correspondence which followed, brought about the importation of fifteen horizontal-component seismographs and three vertical-component seismographs into the Jesuit institutions of the United States and one horizontal-component seismograph into Canada. These seismographs were located at the following institutions:

(a) Horizontal Components:

Brooklyn College, Brooklyn, New York;
 Canisius College, Buffalo, New York;
 Loyola University, Chicago, Illinois;
 Saint Ignatius College (now John Carroll University),
 Cleveland, Ohio;
 Sacred Heart (now Regis) College, Denver, Colorado;
 Fordham University, New York City, New York;
 Georgetown University, Washington, District of
 Columbia;
 Marquette University, Milwaukee, Wisconsin;
 Spring Hill College, near Mobile, Alabama;
 Loyola University of the South, New Orleans, Louisiana;
 Saint Louis University, Saint Louis, Missouri;
 Saint Mary's College, Saint Marys, Kansas;
 University of Santa Clara, Santa Clara, California;
 Gonzaga University, Spokane, Washington;
 Holy Cross College, Worcester, Massachusetts, in the
 United States and at
 Saint Boniface College, Saint Boniface, Manitoba,
 Canada;

(b) Vertical Components:

Georgetown, New Orleans and Santa Clara.

These stations were organized by Father Odenbach into a compact Jesuit Seismological Service with a central station at Cleveland. By the beginning of the year 1911 nearly all of these stations were in routine operation and the data were gathered by means of a postcard system at the Central Station in Cleveland and were forwarded to the International Central Station at Strasbourg.

However, a difference of opinion soon arose regarding which Father Odenbach wrote: "Some stations accepted a plan of cooperation with the United States Weather Bureau. This step was taken against the advice of the Director of the Central Station who based his stand on decisions of the Comptroller of the United States Treasury and of the United States Civil Service Commission. After relations with the Weather Bureau were brought to an end, the Director declined to take up again and interest himself in the original plan, advising the different stations to act independently or to connect up with the International Bureau at Strassbourg." So the first Jesuit seismological service came to a premature end and the individual stations were left to shift for themselves.