



RISTO SAKARI JURVA

IN MEMORIAM

by

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On the night of Dec. 8 and 9, 1953, Dr. RISTO SAKARI JURVA, Director of the Institute of Marine Research, Helsinki, suddenly passed away. He was born on July 1, 1888, in Vaasa, where he also attended school; he graduated from high school in Kotka in 1906.

Developing an early appearing interest in nature, which continued throughout his school years, JURVA began to study at the University of Helsinki, reading physics, mathematics, geography and astronomy, the first-mentioned as a main subject. In addition to his studies he came into close contact with scientific research work as early as his second year at the university, for at the beginning of February 1908, he was appointed assistant at the Central Meteorological Office, Helsinki. This event perhaps determined the whole subsequent course of his work which formed

an unusually unbroken harmonious whole, concentrated on the field of geophysical sciences with but few changes of employment. The only interruption worth mention in JURVA's research work was his retirement from the Central Meteorological Office at the end of the year 1911. In consequence of this JURVA gave up scientific research for several years. During that time he completed his university studies among other things being awarded the degree of Mag. Phil. in the autumn of 1918. This led him back to the sphere of research and one year later he was appointed assistant at the Institute of Marine Research, Helsinki. There he remained, and there he carried out his essential life-work. He was appointed chief divisional of the Institute in 1938 and director in 1947.

When connected with the Central Meteorological Office, JURVA, besides undertaking the current work, devoted himself to directing research. He immediately took charge of the supervision of the network for observations of thunderstorms and northern lights and the treatment and investigation of the data collected. In addition to this he assisted in the forecasting work. From the very beginning he was particularly interested in the latter subject. He was the first in Finland to take into consideration the third dimension in weather analysis. Even later when connected with the Institute of Marine Research he remained a synoptician, partly because his work there required continuous attention to changes in the weather.

JURVA prepared three-year summaries of thunderstorm data. HUGO KARSTEN had already modernized the style of climatological statistics in a year book edited by himself, and this work was continued by JURVA in such a way that he introduced into the year book reports of synoptically significant thunderstorm situations. When the second edition of the *Atlas of Finland* was edited by the Geographical Society in 1910, JURVA prepared for this publication a cartographical presentation, with text, of the mean thunderstorm frequencies in different parts of the country. This work was the first of its kind in Finland and represented the culmination of his climatological thunderstorm research.

JURVA soon began to pay attention to other subjects, too. The most important of his meteorological papers during that time was an investigation of night frost during the years 1892—94. In this paper, nearly corresponding to the requirements for a thesis for the degree of Ph. D., JURVA succeeded in revealing certain features in weather situations essential for the occurrence of frost, which had not been emphasized before.

In his first years at the Institute of Marine Research, JURVA became

interested in the ice conditions on the sea, and this gradually became his chief field of scientific activity, although before that and also later he carried out important investigations dealing with other subjects. Among those the temperature and salinity conditions in the sea, reports of the work of oceanographical expeditions, etc., could be mentioned. In his ice research JURVA introduced an independent method not applied in this field before. He did not define the mean phases in relation to time in the progress and regress of the solid ice boundary. Instead he defined the mean situations, computing the dates at which those situations normally appeared. The advance or delay in the occurrence of individual situations in different winters can then be revealed by comparing the dates of their appearance with the mean dates. The method requires an extensive amount of data and can best be applied in archipelago conditions with an abundance of fixed points. In dealing with conditions on the open sea several difficulties would arise in the application of the method. One particular advantage of JURVA's method is that it gives a description of the ice conditions in numerical form. JURVA's intention was to publish a work of several volumes clarifying the question of the ice conditions as far as this could be done on the basis of the data available. The first volume came into print in 1937 in the form of a thesis for a Ph. D. dissertation. It dealt with ice conditions along the Finnish coasts and included an extensive atlas. The next volume, almost ready for print, and the material for the following volumes were lost when JURVA's home was destroyed by fire during one of the Russian air raids on Helsinki in February, 1944. Besides this principal paper he had also published numerous other investigations explaining questions connected with the ice winters. The later works mostly dealt with secular changes based on long series of observations. JURVA was a pioneer in ice research and his papers, in particular the principal one, have aroused considerable international interest.

In addition to the fields of research mentioned above, Jurva was intimately acquainted with one more branch of geophysics, namely the physics of the solid crust of the earth. When a seismological station was established in the Institute of Physics at the University of Helsinki in 1924, JURVA was put in charge of the station, first temporarily until 1929 and then permanently until the end of 1945. At this point he retired, still remaining as supervisor of the seismological station. Besides his observational work at the station, JURVA went deep into seismology as a science, gaining such qualifications that he was twice invited to be opponent in dissertations, for the degree of Ph. D., at the University of Helsinki in

1943 and at the University of Uppsala in 1949. Shortly before his death JURVA gave before the Finnish Academy of Sciences a lecture on the subject *The gross structure of the earth as revealed by earthquake waves*. In addition he carried out independent seismological research but the manuscript of a paper embodying his results was destroyed in the above-mentioned air raid.

In 1938 JURVA was appointed lecturer in geophysics at the University of Helsinki owing to his versatile qualifications, including the three branches of geophysics mentioned above. As a university teacher he was inspiring.

In that year JURVA was also elected auxiliary member of the Finnish Academy of Sciences; he became an ordinary member in 1947. In 1952 he was elected member of the Societas Scientiarum Fennica. He had been a member of the governing body of the Limnological Society since 1950 and its Vice-President in 1953.

The two scientific societies to which JURVA contributed most were the Geographical Society of Finland and the Geophysical Society. He was elected as a working member of the former as early as 1911. However, his essential activity in the circle of this society only began much later when he became an officer of the Society in 1943 and its permanent secretary in 1946. This brought in its train important duties. In the latter year he was elected editor of a revised edition of the *Handbook of the Geography of Finland*, simultaneously editor for a periodical *Terra* and for the series *Fennia* and *Acta Geographica* of the Society. He was one of the founders of the Geophysical Society in 1926. At the same time he was elected secretary of the Society, a position which he occupied until 1945. Even after this he remained a member of the editorial board of *Geophysica*, the organ of the Society, and acted as President of the Society in 1948 and 1953.

Besides his versatile activity in pure research work, JURVA also exploited his capacity in practical applications. He was utilized as an expert in numerous instances of practical life touching upon his special scientific field. In these connections he delivered several speeches applied for practical purposes and published a number of articles and reviews in newspapers and magazines in the appropriate fields. Sometimes, besides more general data, those articles also included important new research results. Among others an article published in 1938 in the magazine *Finland at Sea*, dealing with the heat conditions of the sea, contained results of fundamental investigations concerning the heat content of the sea, the

volume of the ice and the amount of heat required for its melting. It may be worth mentioning that many Finnish oceanographical terms were originated by JURVA.

As a geophysicist JURVA was more versatile than any other exponent of these branches of science in Finland. His knowledge was not that of a dilettante but a thorough exploration of the problem in question without reference to the time required. This characteristic feature of his scientific mentality, including a careful note of details without loss of the wide perspectives of the problem was revealed both in the works carried out at the beginning of his career and later. As a whole the life-work of JURVA is one of the richest and most independent Finland can present among the branches of geophysics.

As a person, JURVA possessed a lively sense of humour, he was extremely helpful and unassuming in his behaviour.