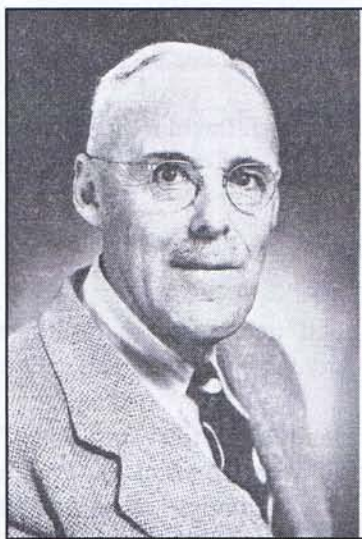


## JOHN P. BUWALDA (1886-1954)

*J. David Rogers*



John P. Buwalda was born in 1886 in Zeeland, Michigan, to parents who had emigrated from the Netherlands. In 1897 the family moved to Yakima, Washington. Upon graduation from high school in 1905, he was introduced to the study of geology by Charles Weaver at the University of Washington. After working several years he enrolled in geology at the University of California,

receiving his B.S. with honors in 1912. He spent the next three years working on his Ph.D. mapping Miocene units in the Tehachapi Range. He accepted a position teaching physiography at Berkeley, which led to a life-long interest and competence in geomorphology.

Buwalda accepted a faculty position in geology at Yale in 1917 and remained there four years, spending half of that time working for the USGS in assessing strategic materials during the First World War. He returned to Berkeley in 1921 as a Professor of Geology and Dean of Summer Sessions. It was during this time that he made the startling discovery of the Hayward fault cutting across the Berkeley campus, in the excavations being made for Cal Memorial Stadium!

In January 1926 he moved to the California Institute of Technology in Pasadena to oversee development of a new Division of Geology, which became one of four major science disciplines at Cal Tech. Within a few months he hired Chester Stock, one of his Berkeley colleagues, as Professor of Paleontology, establishing the first national program to offer geology, paleontology, and geophysics, all together under one roof. His next move was to integrate Carnegie's Seismological Laboratory into Cal Tech's program, making it one of the first to offer courses in geology, paleontology, and geophysics under one roof. Over the next few years Buwalda succeeded in attracting an inspiring array of talent, including: F. Leslie Ransome, W.P. Woodring, Ian Campbell, Charles Richter, Hugo Benioff, Beno Gutenberg, and Dick Jahns.

One of John Buwalda's most inspiring traits was his valuation of field training. At Cal Tech he instituted what was probably the most unique program of study in the United States, requiring undergraduates to take two summer field camps; one between their junior and senior year, and another, after their senior year! In addition, during the junior year all students were required to take a year-long introductory field course, which convened on weekends. They were also required to complete a senior thesis that was based upon independent field mapping somewhere in southern California. Buwalda continued as the chair of the Geology Division at Cal Tech for 21 years until his retirement in 1947, at age 60.

In the early 1930s Professor Buwalda began working as a consulting engineering geologist for the Metropolitan Water District and the Los Angeles Department of Water & Power. He assessed the geology of the Parker Dam site and surveyed the geologic conditions of the Colorado River Aqueduct that was subsequently chosen by MWD. Buwalda also played an important role in developing earthquake resistant building codes, following the April 1933 M6.3 Long Beach earthquake, by providing numerous interviews to newspapers in support of the Riley and Field Acts passed that year by the State Legislature.

The occurrence of the M 7.5 Arvin-Tehachapi earthquake in July 1952 seemed to invigorate John Buwalda, because it occurred in the area he had mapped as part of his doctoral studies four decades previous. He spent the balance of the summer of 1952 in the field mapping and examining the surface rupture features and trying to unravel the underlying structures. Buwalda continued to consult for MWD on an array of challenging projects, including the Garvey Reservoir site. His 1952 report contained some remarkable insights and predictions about potential problems with differential settlement and hydraulic piping that could be triggered by earthquakes! On August 19, 1954 he spent the day with his 21-year old son Robert in the field near Frazier Park, developing input for an engineering geologic tour of the Transverse Ranges he was slated to lead for the upcoming annual meeting of the Geological Society of America in November. While returning to their car at the end of that memorable day, he collapsed and died of a heart attack. His passing and role in southern California development was duly noted on the front page of the Los Angeles Times.