

## A Century of Mosquito Control in California: 1915 - 2015

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Figure 1: Oiling of mosquito larval habitat, circa 1906; courtesy of Alameda Mosquito Abatement District.

### THE NASCENT PERIOD OF MOSQUITO CONTROL: 1904 - 1940

It was no accident that the first “service request” for relief from mosquito bites in 1904 by the Chair of the San Rafael Improvement Association was delivered to Professor Charles W Woodworth of University of California at Berkeley (UC Berkeley). The previous year Woodworth surveyed mosquitoes in the San Rafael salt marsh with his entomology class, which attracted the attention of local residents. The pioneering and successful work of John B Smith in New Jersey the previous year was the basis of recommendations by Woodworth to the San Rafael Improvement Association. On his suggestion the Association hired an inspector who “oiled” nearby salt marshes, greatly reducing mosquitoes. This success persuaded residents of Burlingame to form a similar improvement association and asked Woodworth for help. Woodworth’s choice for the job was Henry Josef Quayle, a recent employee of the UC

Berkeley Entomology Department. Quayle identified that unlike nearby San Rafael, where the nuisance pest was *Aedes dorsalis*, the problem in Burlingame was caused by *Ae dorsalis* and *Ae squamiger*. Digging dikes and building levees to control water and using oil was successful in 1905 Burlingame.

Quayle, with the students enrolled in his class on “pest and nuisance mosquitoes,” performed the necessary task of surveillance and control. The benefits were immediate and inspired several nearby communities (Quayle 1906), especially San Mateo, to pass the first anti-mosquito city ordinance that imposed fines and jail time for property owners that disobeyed.

After the April 18, 1906 Great San Francisco Earthquake, a 35 year old Amadeo Petro Giannini, who had started his Bank of Italy – which later became the Bank of America – in San Francisco just 2 years earlier, was devastated as the earthquake and resulting fires threatened his bank. He borrowed a wagon, collected his gold, currency, and records and took them to his home in nearby Marin (Evans *et al* 2004; PBS 2014). Despite the collapse of the local economy, the San Rafael and Burlingame Improvement Association, along with the great entrepreneurship ability of Giannini, helped resurrect real estate values in the city and the bay area. One of his collaborators, Harry Scott, a real estate developer in



Figure 2: Diking of salt marshes in San Mateo, Alameda, and Marin Counties, CA, circa 1906-1910; courtesy of Alameda Mosquito Abatement District.