NE of the main purposes of the Central Valley Project of California is the redistribution of irrigation waters in the Sacramento and San Joaquin Valleys. The runoff in the Sacramento Valley constitutes about two-thirds of the water supply of the combined valleys while the San Joaquin Valley contains about two-thirds of the irrigable land. Briefly, the water distribution plans for the project are (1) storage of flood waters by the Shasta Dam on the Sacramento River below the mouth of the Pit River; (2) a regulated, all season, flow in the lower Sacramento; (3) storage on the San Joaquin River by means of the Friant Dam; (4) diversion up the San Joaquin Valley from the Friant reservoir, a distance of about 165 miles, so as to provide supplemental supply for lands in the upper valley; and (5) pumping Sacramento River water up the San Joaquin Valley, about 110 miles to Mendota, where it will be used to irrigate lands previously irrigated from the San Joaquin River below the dam. (See Fig. 1.)

NEED FOR SOIL DATA

Although the Central Valley Project is one of the nation’s outstanding engineering undertakings involving the ultimate expenditure of hundreds of millions of dollars, an important, although somewhat less spectacular, feature has been the attention given to soils. The major portion of the state’s 5 million acres of irrigated land is located in the Central Valley; portions of this, especially in the upper end of the San Joaquin Valley, has not had fresh water and there are large areas, also mainly in the San Joaquin Valley, which do not now have irrigation at all. With conservation, and storage on streams in both valleys, there will still be insufficient water to irrigate all the lands in both valleys. This fact in particular, that has made important the soils of these valleys necessary in order to determine which lands should be provided with water and which should be denied water.

Potentially, at least, there are some lands which are more productive than others which are quite adequately supplied with water. The supplying of supplemental water to lands now irrigated, the irrigation of new lands and the redistribution of water between lands of varying quality involved a problem of great economic importance, the solution of which determined the economic feasibility of the project. The main question was of course—will the increase in yields on lands now inadequately irrigated plus the yields on lands not now irrigated pay for the irrigation works? Obviously the answer depends upon the cost of the works, the price of agricultural products and the productive capacity of the soils. The engineer can estimate the probable costs, the economist can make some sort of prediction of future prices and the soil scientist has the job of estimating the productive capacity of the soils.

We knew of this project and its probable needs far back as 1933 when the University of California started a detailed soil survey of those portions of the valley where information was either meagre or lacking. Most of the new lands to be irrigated as well as those to be supplied with additional water are in Tulare, Kern, and Kings Counties, and so the surveys of these areas were pushed to completion during the next four years (1934–37). None of these

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