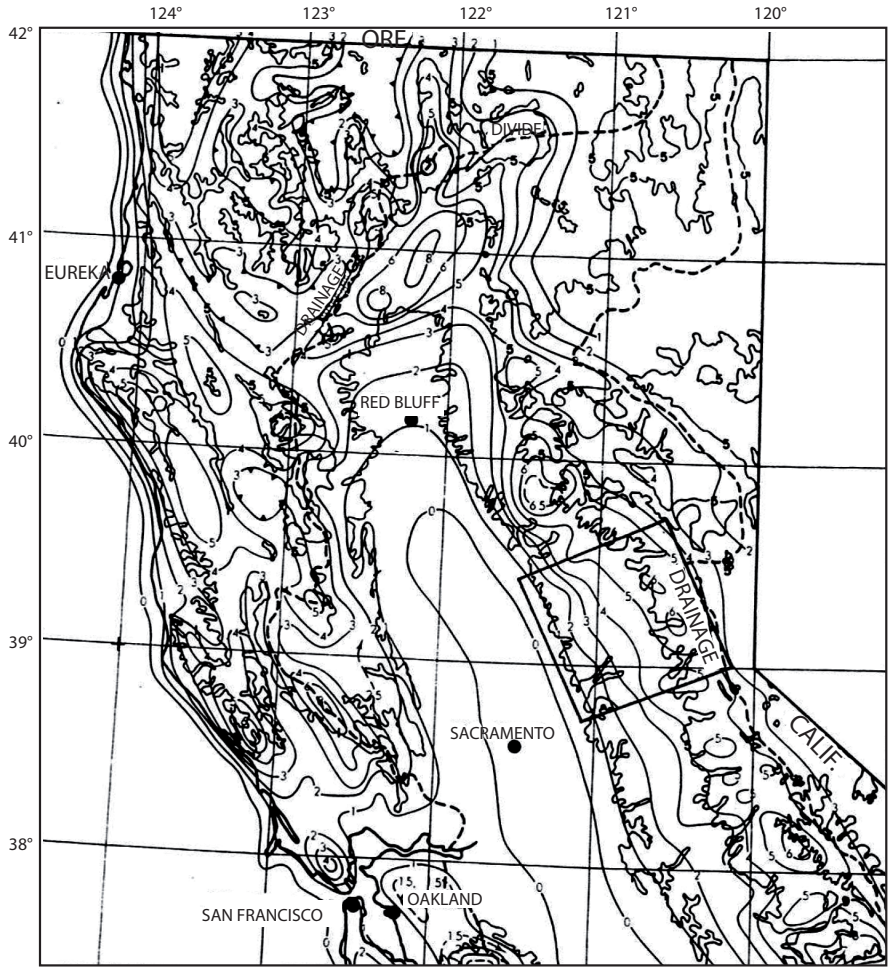

Figure 3.9. Six-hour orographic PMP (inches) for January (square delineates Blue Canyon orographic model test area; United States Weather Bureau, 1961*a*)

regions of California (United States Weather Bureau, 1961*a*), where the critical season for major orographic storms is October to March. The approach, which has been used elsewhere, is basically similar to those used in estimating PMP for non-orographic regions. The greatest precipitation amounts for various durations at stations in the least orographically influenced areas are maximized for moisture. This is done in two steps. First, regional envelopes of maximum persisting 12-hour 1 000-hPa dewpoints are determined for use in evaluating maximum moisture M. Second, durational envelopes of maximum P/M ratios at each station are determined for each month. Here, P is the storm precipitation for a particular duration, and M is determined from the precipitable water W for the representative persisting 12-hour 1 000-hPa storm dewpoint (section 2.2.4).

P/M ratios should be computed for several of the highest rainfalls at any particular station because the maximum rainfall does not necessarily yield the highest P/M ratio. Maps of maximum moisture and P/M ratios are then drawn. Multiplication of corresponding values from appropriate pairs of maps yields moisture-maximized rainfall amounts for any required location, or $(P/M)_{max}$ multiplied by M_{max} equals convergence PMP.

3.3.4.1 Moisture (dewpoint) envelopes

Maximum, or 100-year, persisting 12-hour 1 000-hPa dewpoints (section 2.2.5), enveloped seasonally at each station (Figure 3.11) and smoothed regionally (Figure 3.12), are used to establish the level of maximum moisture available for evaluating convergence PMP. In the example study (United States Weather Bureau, 1961*a*), one mean seasonal variation curve (not shown) was found applicable to the entire region of interest. Different seasonal trends for different portions of a region would affect only the details of application.