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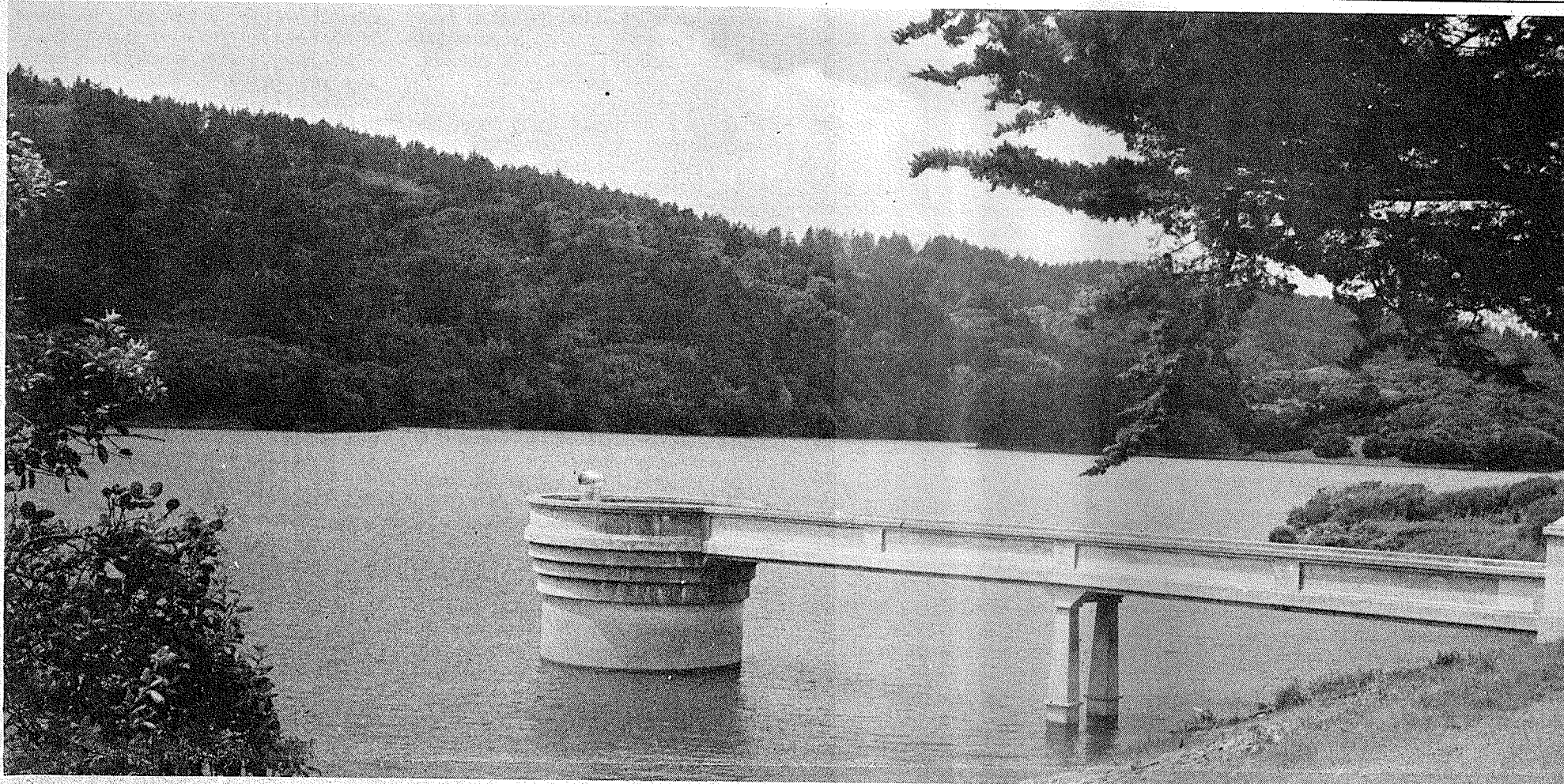
the Country Almanac

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CRYSTAL SPRINGS RESERVOIR stores water brought from the melting Sierra snows for the use of San Francisco and its water customers. The stand-

pipe allows excess water to drain from the reservoir to the creek below the dam. Photo by Marion Softky

water water water water

Water — two parts hydrogen to one part oxygen — a basic element of life — and far too often taken for granted.

In this area at least, most people who turn on the faucet or the sprinkler, assume a plentiful stream of clean water will flow out of it. They are seldom disappointed.

It is not so everywhere. Many areas have always lived with scarce water, and more are beginning to encounter shortages as growth, increases in consumption, and pollution press on nature's supply. In England, the media are urging people to "shower with a friend." Trenton lived for over a week on water from fire hoses when a plant broke down. Closer to home, on the San Mateo County coastside, farmers, residents and tourists suffer from chronic water shortages every summer.

In San Mateo County, the handwriting is on the wall that it may be necessary to take a careful look at where the water goes and see where consumption can be realistically cut. Demand for water is increasing inexorably and, according to a recent study done for the Peninsula Water Agency by consultant Walter Schultz, demand will exceed the supply by 1990. Mr. Schultz has recommended that the county start now to assure that San Francisco expands its transmission system to its ultimate capacity of over 400 million gallons per day by building a fourth pipeline 47 miles across the San Joaquin Valley.

Thus the county is faced with several alternatives for future water. San Fran-

cisco may expand its water transmission system, a huge project which may encounter political and financial problems. Some other source of supplemental water may also be developed. Otherwise stringent measures will have to be taken to live within the water supply which will continue to be available from San Francisco.

The half million people who live on the bayside of San Mateo County receive some 90 per cent of their water from San Francisco. The very existence of the dense cities on the peninsula is the result of the foresight of the San Francisco engineers and planners who conceived the idea that future growth in the semi-arid bay area could be sustained by importing water dropped on the Sierras by winter snows. The massive Hetch Hetchy system which first delivered water to the Peninsula in 1934 from the Tuolumne River 149 miles away has now been expanded to a present capacity of 340 million gallons per day. The water is delivered to customers in San Francisco, San Mateo, Alameda, and Santa Clara counties via a large number of private companies, cities, and special districts who contract with San Francisco. At present San Mateo County receives approximately 30 per cent of San Francisco's total water supply.

The Peninsula Water Agency and the 19 cities in the county are currently reviewing the scope of work for a master water study which will result in adoption of a Comprehensive Water Resources Management Plan by Jan. 1, 1977.

A series of meetings were held over the summer by the Environmental Quality Coordinating Council to identify some of the questions that need to be addressed in the new study.

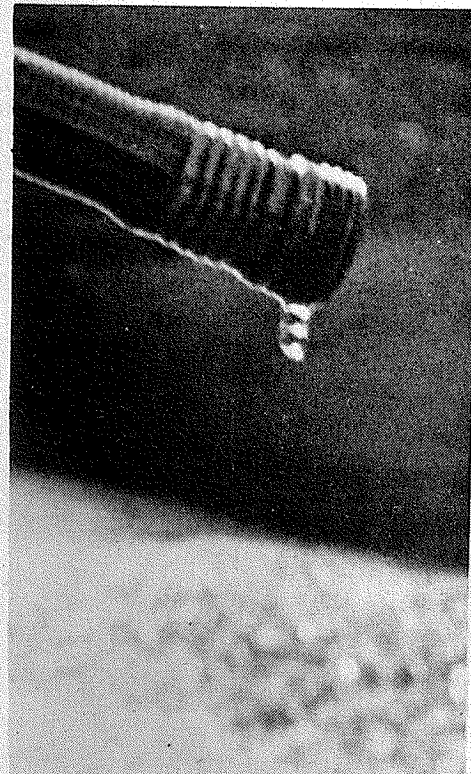
Some of the questions that have been raised:

- can savings be achieved through conservation measures, postpone or eliminate the need to expand the Hetch Hetchy transmission system?
- should changes in the rate structure be considered to discourage excess water use?
- can service be guaranteed to large new consumers such as the large housing developments proposed on San Bruno Mountain and Redwood Shores? What about golf courses which can use up to a million gallons per day in the dry season?
- how can use of reclaimed water be promoted for non-consumptive uses such as watering golf courses and cemeteries?
- how can businesses and industries be persuaded to conserve water?
- how will these programs affect the consumer's pocketbook?

Marin County also faces a water shortage and is doing something about it. In the face of two overwhelming defeats of bond issues for importing water from the Russian River, the authorities got the message that the people did not want to bring in outside water to support large new populations. As a result, the Marin Municipal Utility District has embarked on a comprehensive 20-year program to bring

water consumption in line with local sources of water. The keystones of the program are a public program of water conservation, reclamation and reuse of waste water. A modest new reservoir is

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planned to make up the difference between the rainfall collected and the water consumed. By an extensive public education program the district hopes to save 300,000,000 gallons per year — or 12 per cent of the county's overall water use. The conservation program is expected to reduce the size of the reservoir which needs to be built from 10,000 to 5000 acre feet and save \$6 to \$8 million in construction costs, according to district representative Richard Rogers.

Some of the water use figures in San Mateo County are impressive. On an average each person in the county uses 152 gallons of water per day. Approximately 70 per cent is for domestic use and the rest for commercial, industrial use and landscape watering. According to 1970 figures presented in the county's Water Quality Management Report of 1973, per capita consumption varies from a low of 70 to 71 gallons per day in Los Trancos Woods to a high of 330 gallons per day in Hillsborough. Seventy per cent of the water consumed by each individual finds its way into the sewage collection system, except in the unsewered areas which include about 18 per cent of the residents in the south county area where there are 10,000 septic tanks.

According to the same study, the largest consumers in the local area are the Stanford Linear Accelerator Center which consumes 112.4 million gallons per year and the Sharon Park golf course at 66.6 million gallons per year. These are both served by the Menlo Park Municipal Water District. Other large south county users are the Stanford Research Institute at 132.2 million gallons per year and Raychem, which got 112.4 gallons per year from the Menlo Park Municipal Water District and another 19.8 from the California Water Service Company.

These two purveyors, which provide water to most of the south county area, have different charging systems. According to a representative, California Water Service has a fixed meter charge depending on the size of the meter and a flat rate of 44.5 cents for each 100 cubic feet of water. In the Menlo Park system, the flat rate based on the meter size includes a certain amount of water, and all water in excess of that is charged at a flat rate of 40 cents per 100 cubic feet. Individual users with a $\frac{5}{8}$ inch meter pay \$4.11 per month which includes 300 cubic feet; the largest users with a six-inch meter pay a flat \$139.60 per month which includes 20,000

cubic feet of water.

For amateur mathematicians, one hundred cubic feet is very nearly 750 gallons.

Thus there appear to be several practical reasons for examining conservation of water: if supplemental supplies are not developed conservation may become necessary. With prices of everything including the water on the way up, conservation could save money. Also the state is now beginning to require comprehensive conservation and water management programs before it will permit development of new water sources. A new regulation of the State Water Resources Control Board issued May 13 states in part, "Water resources already developed shall be used to the maximum extent before new sources are developed."

by Marion Softky