

# Why Santa Cruz Has Fog In Summer Explained By Local Weather Man, Robert Burton

(Editor's note: In response to a number of questions concerning Santa Cruz' summer weather, R. E. Burton, U. S. weather observer for this city and a city councilman, has written the following article.)

By ROBERT E. BURTON

For the last two weeks Santa Cruz has seen a magnificent display of typical summer weather: cool nights, followed by fog in the early morning and glorious sunshine during the rest of the day.

Night temperatures have never fallen below 43 degrees F., and have never exceeded 49 degrees F. Mid-day temperatures have reached to 91 degrees only to be cooled by late afternoon trade winds, usually down to 60 degrees F. by early evening. This is weather to suit all tastes.

The morning fogs have caused some questioning. Several things are responsible for it. There are first of all to the east of us, warm valleys like the Santa Clara and the San Joaquin which create an updraft of air currents. This is due to the fact that on being heated the air expands above these valleys, becomes lighter, and rises to the upper atmosphere. The vacuum created by this rising air current is filled by adjoining colder air. There are two places where this colder air might come from, one is the higher Sierras, and in the summer this is somewhat checked by the very warm western slopes of these Sierras, which, if anything, contribute to the rising air currents rather than to the descending air currents. The other is the Pacific ocean.

The temperature of the Pacific ocean at this time of the year and at this latitude, is around 62 degrees. This varies less than six degrees between summer and winter. The air which has been in contact with the ocean temperature for thousands of square miles, must therefore be close to the temperature of that water. It is this colder air which flows inland to replace the rising air currents.

This however does not explain why that air is foggy. The reason, briefly stated, is this. For about 25 to 100 miles off shore of the coast of California, at this time of the year, there is a blanket of fog. This fog is the result of warmer air currents from near the equator and laden with moisture to point saturation. This warm saturated air from the equatorial belt strikes a colder belt of water near our coast. These warm air current then become supersaturated at this new temperature and give up their excess moisture in the form of fog.

To explain the presence of this cold water off shore from California, we must now bring into play another factor and that is the rotation of the earth.

The speed of this rotation is at the rate of about 1000 miles per hour. A very sizable speed even in these days of jet planes. One of the results of this rotation is that the ocean water is set in motion into various currents. One of these currents strikes California a slanting blow as it comes from the southwest and after striking the coast, swings northwestward along the Aleutian islands. This water current, and the resultant air currents it sets in motion are responsible for our equitable California weather, and yet it still does not explain fully the blanket of fog on the land.

For this we must go to two causes. First the fact that water is less firm than earth and that as the earth travels from west to east it has a tendency to leave the waters of the Pacific behind. This has a tendency to create a lower ocean trough near the coast. This of course cannot exist for long. The result is that the water further to the west press on the lower water levels beneath them and bring up cold water from beneath to re-establish an equilibrium.

There is another cause for this cold water: it is the counter current which is set in motion along the coast by the great Japanese current to the west. This is similar to what we see along side of a stream, when near the shore we see water flowing upstream. This secondary stream travelling downward from Alaska brings us cold waters. It is this cold water which brings supersaturation or a fog to the westerly warm and moist air currents and it is the rotation of the earth which brings these foggy air currents to our shores.

What is the result of this fog? It is our green forested hills and with them our glorious redwoods. A very small price to pay indeed if fog is needed to maintain such treasures. Just a few miles inland, where these foggy air currents meet the warm air of the valleys, this excess moisture is immediately absorbed by the air, and not until this air drifts eastward, to the summits of our Sierras, is this moisture again condensed into cumulous clouds which adorn the majestic heads of our Sierra peaks.

No murmur of man, no forces he may release can in any way alter these orderly phenomenon of nature. To those who do not like fog there is only one remedy: to move inland. But they must be prepared to move back in the winter when they have fog in the valley and we seldom have any. To the rest of us these fogs are like the blessing, the cooling and the soothing hand of the great Creator.

## Emmons Named Commissioner For Indian Affairs

Washington (AP). — President Eisenhower today nominated Glenn L. Emmons of New Mexico, to be commissioner of Indian affairs and the senate interior affairs committee promptly approved him. The vote was unanimous.

Emmons, Gallup banker, has declared his policy would be to "liquidate the trusteeship of the Indians as quickly as possible."

Emmons, 57, has lived his lifetime in the Southwest Indian country.

## GAMBLE-SKOGMO

### SALES INCREASE

Minneapolis. — Gamble-Skogmo, Inc. reports consolidated net sales for the six months period ending June 30 were \$60,347,186, up 5.7 per cent from sales of \$57,081,710 in the first six months of last year.

Sales for June were \$11,173,041, down .1 per cent from sales of \$11,182,814 in June, 1952.

North Carolina's Outer Banks, an 80-mile sliver of islands in the Atlantic are known as the graveyard of the Atlantic because of the large number of ships wrecked there.