the Gulf Stream as well as of the air were due to the northerly winds.—*Charles F. Brooks.*

GULF OF TEHUANTEPEC COOLED BY NORTHER

Mr. Benjamin Parry has called our attention to a striking case of coolness due to the upwelling of sea water under the fresh gale on November 3, 1930, in the Gulf of Tehuantepec, when a true norther, blowing for more than 16 hours, lowered the temperature of the sea water 11 degrees, from 84 to 73° F. This change was recorded by the Society's thermograph on the turbo-electric ship *Virginia* of the Panama Pacific Line en route from Balboa to San Pedro. The ship left the cool water suddenly, 5 degrees of the rise occurring practically instantaneously and 5 more in about 10 minutes. How long the norther had been blowing before the ship passed is not indicated.

LOWS OFF SOUTHERN CALIFORNIA

Late in November, 1930, and again twice in the first half of February, 1931, lows developed over the Pacific Ocean in latitudes 30 to 35 and lower some 500 miles west and southwest of Cape Mendocino. It is possible that these lows came from the tropical Pacific southwest of this area, for the U. S. Weather Bureau's daily weather map of the eastern Pacific and North America (issued at San Francisco) does not extend to a lower latitude in this longitude. The November low was a weak one that seemed to have been born in a bend of the isobars on the south of an extensive high. The February lows, which were both rather strong, seem to have been secondaries forming in the southern end of troughs of strong and extensive extra-tropical lows. These secondaries moved very slowly, taking some days to reach southern California and pass inland. Each gave well over an inch of rain to San Diego, but less to Los Angeles. The slow movement gave ample time for the arrival of moist tropical air and consequent abundant precipitation over southern California.—*Charles F. Brooks.*

Of the first storm, Dr. B. M. Varney, writing from West Los Angeles, Feb. 14, says, "I wish I could have been here at the time of the great rains last week. . . . The family described them as terrific—and they have seen it rain in Florida. . . . Those rains are further evidence that we shall have to amend our conception of the "prevailing westerlies" *origin* of our southern California rains. More later on this."

WINTER IN A MOUNTAIN VALLEY

"The phenomena of clear, cold weather at high altitudes in the Canadian Rockies are extremely interesting. I can understand the fresh-air schools of Switzerland where youngsters go skiing clad in little more than a pair of shoes. I spent one Sunday skiing at Lake Louise. On a sunny hillside it was so hot that we rolled up our sleeves, perspired, and panted. The south end of the lake looked attractive, so off we started. But the sun never reaches the south end of the lake from one end of the winter to the next. My friend began to lose all feeling in his feet, while