

CORRESPONDENCE.

June 16, 1921.

Directoria de Meteorologia,
Morro do Castello,
Rio de Janeiro, Brazil.

To the Secretary of the American Meteorological Society:

I beg you to lay before the American Meteorological Society my best thanks for the high honor conferred me by choosing its obscure Brazilian fellow to act as councillor. With my sincere votes for the increasing prosperity of the Society,

Believe me, Yours faithfully,

SAMPAIO FERRAZ, Director.

TO THE SECRETARY:

A letter which was recently referred to me furnishes a striking example of the wide dissemination of meteorological misinformation, and of the credulity of business men in scientific matters.

It was from a company manufacturing automobile accessories, addressed to their local dealer, and said,

"I wish you would kindly take a reading of the temperature, the direction of the wind, and the general condition of the weather especially during the hour of the equinox, as the above conditions will be prevailing conditions for the following 90 days in your territory."

Note the finality of that statement.

The letter then stated that the exact data could be obtained from the weather Bureau office, and that upon their receipt the writer would furnish a statement as to what the weather will be during the spring months.

What an easy and simple matter this making of weather forecasts is, even to the making of definite and positive forecasts for months in advance! But here is no mention of the ground-hog! Evidently he is no longer considered an infallible prophet. In his place we have as a guide by which practical business men are asked to plan their affairs, the time when the sun crosses an imaginary circle in an imaginary celestial sphere!

Truly, man is incurably superstitious, and there is still work for the American Meteorological Society in the "diffusion of knowledge of meteorology." Business men are frequently amused or amazed at the gullibility of the uninitiated in buying worthless stocks. Do they show any greater perspicacity when they "take stock" in such ideas as that presented in this letter?—*Thomas A. Blair*.
Weather Bureau Office, Dubuque, Iowa, March 31, 1921.

CATTLE AND BUNCH GRASS.

Very slight differences in climatic conditions are sometimes sufficient to determine whether or not an industry may thrive in a given locality. The grazing industry in the plains region west of the Missouri River is an interesting example. Turf grass does not grow naturally in this region for the reason that it cannot survive the summer droughts. The several species of bunch grass, being deep-rooted are not killed by long-continued dry weather. All the grasses of the region turn brown in early summer, and the few summer rainstorms do not injure them materially. The brown grass is pretty fair fodder; and usually more

or less green grass can be found deep in the heart of each bunch. At all events cattle manage to keep in good condition during the dry season.

What would be the result if summer showers came with such frequency that turf grass survived. The answer is not positive, but it is probable. Turf grass and bunch grass cannot live in the same locality. The great root development of turf grass crowds out the bunch grass and exterminates it. Turf grass is highly nutritious as fodder; but after it turns brown, a single shower leaches the nutrition out of it. Cattle starve unless otherwise fed.

Now here is a delicate balance of rainfall which permits bunch grass and cattle to survive; at the same time it prevents the survival of turf grass. One cannot say positively that the grazing industry would be eliminated if the rainfall should increase to an amount that permitted turf grass to survive. Certain it is however, that the grazing industry would be powerfully affected.—*Jacques W. Redway.*

THE CLIMATE OF SAN FRANCISCO: AN OUTSTANDING ANOMALY.

There are two strikingly anomalous features in the climate of San Francisco which deserve some attention. One is the extraordinarily cold summer both for the latitude, and in comparison with the terrific summer heat in the interior of California. The other is the occurrence of the highest mean monthly temperatures as late as September and October, although the significance of this is much reduced by the very small annual range of temperature at San Francisco, and the small change from month to month. Now the unduly small annual range of temperature on the Pacific coast of the United States is the result of prevailing on-shore winds, and very remarkable is the contrast in this respect with the Atlantic coast of the States, where the westerly air movement carries a continental range of temperature right to the shore, and some way out to sea. But to get at the root of the two above mentioned anomalies in the local conditions of the city of San Francisco it is necessary to go into closer detail. The summer at San Francisco is cool, partly because of the peculiar insularity of its site (which reference to a map will indicate) and partly, because throughout the warmer months cold west or north-west winds prevail, which roll in frequent fogs from the sea. In other words the sun does not get a chance of heating up the coastal belt to a temperature level suitable to so low a latitude, and the mean temperature of the air in July at San Francisco is only 58° F., or some 5°, less than that of London. It is only occasionally when the sea-wind fails that the temperature rises to a high level at San Francisco with maxima near 100° F. and the city gets a reminder of the proximity of the hot interior valley of California. In the western States the summer thermal gradient is very steep inland from the Pacific, and the July isotherms of 60°, 70°, 80° and even 90° run very close together. The seasonal anomaly, shown in the accompanying table, of the highest mean temperature occurring in September with October second, instead of in July with August second, is at first sight perplexing. In a maritime region it is, of course, usual to find a two-monthly lag in the seasonable extremes of temperature behind the solstice instead of only a one-monthly lag as in a continental region, and in any case one would expect August to be the warmest month at San Francisco. But why September, and then October? The explanation seems to be this: in July and August the Californian coast is kept unduly cool by the strength and persistence of the cold sea winds which are undoubtedly largely governed by the general summer pressure régime char-