

### OPERATIONS OF THE SIGNAL SERVICE BUREAU ON THE PACIFIC COAST.

"Old Probabilities" very quietly made an extended reconnaissance of the Pacific coast a short time ago, unknown in his modest incognito to almost every body. This happened in part at least from the fact that the old gentleman is a complicated personage. It is impossible for one man—the able chief of the Signal Service, General Myer—to attend to the entire direction of the Bureau, and at the same time to all the details of studying and making out, plotting and publishing the weather likelihoods for so large an area of the earth's surface as is covered by the United States. In the general office at Washington there are several other persons whose special duty it is to take the collated data, and deduce therefrom the probabilities dividing the work between them.

One of these persons is Lieut. Robert Craig. Thoroughly familiarized with the air currents, clouds and storms, they have a romantic existence, dwelling in a higher sphere or place than ordinary plodding mortals. Their minds and souls are always traveling upon the whirlwind. They rest upon the clouds; they are unceasingly sliding from one stratum of the atmosphere to another, mounting to the loftiest heights of the "cerulean blue," and delighting above all things in the surprises which they are able to create among the busy populations, unable to look beyond their own horizon. If they can hurl upon us (as is their daily wont), an unexpected storm of wind or rain, it is to them a delectation.

Worn and wearied finally by this kind of life, followed for many years without respite, Lieut. Craig last fall obtained leave of absence, and recuperated his bodily energies among the nooks that furnish congenial surroundings for such a spirit, on the Pacific coast, along which in the course of three or four months he wandered from Lower California to British Columbia. Naturally enough the spirit of Old Probabilities made its presence known as flitting over this region to him who toils on the Press. Our interview—or seance if the reader likes—took place at the Baldwin hotel in March last. Lieut. Craig returned a few days later to Washington, where, renouncing the tripod, he has since been flourishing the scepter of Jove in the shape of a crow quill over his weather maps.

Before the Signal Service Bureau was organized this gentleman observed to us, that very little was known of these areas of low and high pressure on an extensive scale. They had never made any simultaneous observations. Eppy made some deductions, but he drew simply a straight line—a tremendous trough representing low pressure. But he did not have the data to work upon. Considering what he had, he accomplished all that could be expected.

The Signal Service observations are now taken three times a day all over the country at the same moment. The observation at 7:35 A. M., Washington time, is taken simultaneously all around the world. In remote outside regions where there is no telegraphic communication the results are transmitted by mail, and used in the course of the year in a more general way and with good effect. The results of a general character are published from time to time; and the more special daily, in the printing office of the Signal Service Bureau. Every month the Bureau prepares and publishes a monthly review of the United States, wherein are charts, giving the directions of storm centers.

Every storm that crosses our country is noted, with a short description and charts. These reports are familiar to many of our readers. They come out about the middle of each month and may be seen at all the regular and volunteer signal offices on the coast, as well as at other places where they have been desired and arranged for. There are 400 or 500 volunteer

observers in the United States. In return for their services these reports are sent to all observers.

On the Pacific coast the extension of the service beyond the confines of California is new. The probabilities for the coast have not been daily studied and published until the past year, when regular offices were established as far north as Olympia, W. T. As both the regular and volunteer offices have been constantly multiplying since, we are unable to furnish a complete list. Many thousand square miles, however, of the Cordilleran plateau and Rocky mountain country are not yet represented.

The mountain ranges have not such a decided influence on high and low pressure centers governing the movements of storms, as would be imagined; in fact, very little, though they have great influence on the storm itself, after it has been created. The high mountain ranges simply take out all the moisture, which is the fuel of the storm, and keeps it going. As a storm approaches the Sierra Nevada, for example, the ring of the atmospheric stratum into a colder high, causes deposition in the form of rain or snow. Mountains and valleys have a good deal to do in shaping the direction of the winds of the lower atmosphere, being those with which we are acquainted. Rain storms once generated and moving in any direction close to the surface, are subject to deflections just like the winds without rain.

It so happens that the winds blowing into the Golden Gate agree in direction with the course of the general atmospheric current in this latitude. No sooner do they reach the interior valleys than their courses are altered from the northwest to southeast. Storms generally move from west to east in the latitude of the United States, between 25° and 75° north of the equator. The storm centers which affect the North Pacific coast strike the same approaching from the west, at all points between the parallels mentioned. The rain storms are just as likely as not to strike the coast south of San Francisco, though the majority strike it to the north of that point. Some of the California rain storms come here from Oregon and Washington. What proportion originates north of the Columbia, observations have not been made to show.

The southerly winds of winter are produced by a depression—a low barometer—north of us, while it is high to the southward. The rains, where they occur on the coast in summer time, have the same general direction of movement as those in the winter. The directions of the wind preceding rain may vary according to the season.

What brings the rain storms down the coast is not always clear. Sometimes the Signal Bureau observers can see certain indications of causes to make them so move while at others they find it impossible to explain why they should take that particular direction. The Oregon rain storms frequently take this course nearly to the southeast, instead of the normal course directly to the east. Sometimes there is in advance of the normal movement, eastward beyond the Rocky mountains, an area of high pressure which would cause them to turn southeastward.

There are three different storm belts. From the equator to latitude 25° or 30° north, storms move from the southeast to the northwest. In our latitude they move from west to east. North of us, somewhere in the neighborhood of 65° or 70°, they begin to move from the northeast to the southwest again. These belts shift up and down a little according to the season. Loomis's Meteorology states the phenomena and their causes. He gives these as the prevailing currents all over the globe. Generally speaking, the normal direction of the belt current rules the direction of the storm movement; but the low pressure areas or storm centers are still more strictly governing as to details, while following themselves the movement of the prevailing winds. Our north winds are sometimes winds which follow a storm as it passes away. At other times they are winds preceding what is called a high barometer.—*Mining and Scientific Press.*

### THE WONDERFUL SINKS.

In a late issue we published an account of the Nevada sinks, taken from the *Eureka Sentinel*, maintaining the view that they retain their level through evaporation and have no subterranean outlet. To this the *Inyo Independent* adds: That the sinks and lakes of the Great basin are held to their levels mainly through evaporation is undoubtedly the fact of the case. Mono and Inyo counties have the most notable sinks of the kind in the world. Probably Big Owens lake receives as much or more water than the Humboldt sink. It is not true, however, that the quantity of water is at all times the same; the great lake is now some four feet higher than 11 or 12 years ago. The amount of snow-fall in the mountains is the only thing governing it. In summer heat the total amount of evaporation from its vast expanse of water is incalculable, and doubtless furnishes moisture for the winter snow-fall of the adjoining high Sierras. The minute particles of minerals and alkalies gathered from the soil by the inflowing streams are left in solution in the lake, and during the centuries of this process the lake has assumed its Dead sea character, in which no living thing can exist, save worms and a small nondescript water-fowl. Mono lake is fully 12 feet higher than it was many years ago. At the northwest corner of the lake, near the Frenchman's, the posts of a former sheep corral can be seen far out into the water. A pre-emptor recently appeared in the United States Land Office to prove up his claim located five or six years ago. Of his 160 acres he stated that all but 40 acres was under water, and he very naturally did not wish to pay for more than that amount. Some ascribe the fact of the water rising to an increased amount of snow on the mountains during the winter over former times; some believe that the tuffing of Virginia creek into the lake has caused the change; while others hold to the theory that some secret outlet to the lake has become filled up. Whatever may be the cause, the fact is evident that the lake is rising at the rate of a foot or two a year. There are numerous evidences that in former times Mono lake extended over a vast extent of territory—certainly 10 times as great as now. Is it not possible that in course of time it may again assume its ancient proportions?

MAKE HOME ATTRACTIVE.—A writer in the *New York Atlas* gives the following advice, which we heartily endorse: Do not be afraid of doing too much to render home pleasant. Let beautiful pictures hang upon its walls; let good books, plentifully supplied, invite the attention of the young; and, if possible, let the charm of music fling its magic spell over all, that the tempted youth, when the gilded allurements of folly would attract his gaze, may ever turn to home as the brightest and cheeriest place on earth. Do not, we beg of you, make the mistake of removing to that best room, opened to call forth the admiration or minister to the enjoyment of the unusual visitor, the books, the pictures, and the music. If they are not worth enjoying, they are not worth having. If a book is bought only for its binding and gilding, then let it ever remain under a glass case, safe from the pollution of smoke, or dust, or children's fingers. If pictures are to be enjoyed only when we wear our Sunday clothes, then banish them to the parlors. If music is cheering and soothing only when the babbling of strangers interrupts its strains, let the piano cover only be raised when visitors are present, and we and our houses are on exhibition. But if, on the contrary, these beauties of sight and sound are able every day to exert an elevating and ennobling influence, then let us have them brought from the best room to our ordinary apartment where we can enjoy them, or else throw open the long closed shutters, remove the canvas covers from the parlor furniture, and make our children our most honored guests.