immemorial.. They are also found traveling over the valleys of the Euphrates and Tigris, covering up the cities and the civilization of Assyria and Babylonia. Along the coast of Denmark, many parts of England and southwestern France, the Atlantic coast of Long Island and North Carolina, and on the shores of Lakes Michigan and Erie, such dunes are well known. In order to diminish their steady motion the most successful method has been to set out, or sow the seeds of grasses with very long roots. As this grass spreads rapidly and every joint that is buried becomes a new center for roots, it soon makes a protective covering and checks the moving sand. The movement of sand dunes as modified by wind and rain and frost would form an excellent subject for exact investigation by some observer.

THE GLACIER AS AN INDEX OF CLIMATE.

In the search for natural phenomena that sum up the total effect of the seasons from year to year, meteorologists have sometimes used the statistics of the condition of the glaciers, just as the botanists have been accustomed to use the statistics of the annual rings of growth of trees. If a glacier is increasing in volume year by year, this is considered as an evidence that the quantity of snow and, therefore, the cold is increasing, or the quantity of heat is diminishing. But a glacier is the result of complex conditions; it may easily happen that on one side of a mountain range the glaciers are increasing, while on the opposite side they are simultaneously decreasing. The growth of a glacier is favored by the fall of snow, sleet, and hail and by the prevalence of cool, cloudy weather, and these conditions depend quite as much on the direction of the wind as on the temperature. Those who look to the glaciers to tell them whether, at the present time, the climate is becoming colder or warmer, will be interested in the statement taken from Nature of April 4, 1901, p. 547, to the effect that the survey of Swiss glaciers made since 1897 shows that out of fifty-six cases thirty-nine are diminishing in size, five are stationary, and twelve are increasing. These three classes represent the three types of locations in which, during these past few years, local conditions have been, respectively, favorable or unfavorable to the growth of a glacier. As they stand they tell us very little as to whether the general climatic conditions are more or less favorable to glaciers than formerly, and, indeed, nothing as to whether temperature, snowfall, or rain has produced the variations in the glacier.

AN OLD RECORD AT PENSACOLA, FLA.

In the first volume of the transactions of the American Philosophical Society of Philadelphia is a very interesting letter from Dr. J. Lorimer, of Pensacola, "West Florida," from which it appears that about 1768 he kept a record of his Fahrenheit thermometer three times a day for a whole year. The Editor is very desirous of obtaining some clew to this ancient temperature record. Dr. Lorimer states that his extremes range between 17° and 98° F.

It is greatly to be hoped that his manuscript record has escaped the ravages of time. As he was then surgeon to the British troops at this station it is possible that his record is still preserved in the British archives in London.

THE KITE WORK OF THE GERMAN ANTARCTIC EXPEDITION.

We have received information to the effect that the German South Polar Expedition will systematically make kite ascensions in the trade winds from aboard ship during the southward journey, and continue the work in the antarctic regions.

The expedition is fully equipped with aerial apparatus, all substantially of the Weather Bureau pattern, and the scheme will be that followed at Washington, with modifications required by the conditions and resulting from extensive experiments with the Weather Bureau outfit at the Deutsche Seewarte.

The kites are of three sizes, the large Marvin, like those used by the Weather Bureau of 6½ square meters surface, Hargrave kites of 4 and 2¾ square meters surface, and light Eddy kites of 2¾ square meters, which are very advantageously employed in lifting and sustaining the larger kites with the instruments in light winds.

This appears to be the first occasion on which preparations have been made for the systematic exploration of the upper air conditions in the polar regions.

During the cruise of the U. S. S. *Pensacola* to Africa and back, October, 1889–May, 1890, the editor attempted to measure the actual linear velocity of the winds at sea by the observation of small balloons filled with hydrogen gas. These were set free from the stern of the vessel, and it was expected they would rise and be carried by the free wind in such a direction as to be easily observed with the sextant. Curiously enough, however, as the vessel was under sail these balloons became entangled in the currents about the sails, and we were never able to get a single satisfactory observation. Balloons of very considerable size would be necessary in order to free themselves from the disturbances produced by the sails. We very much hope that better fortune awaits the kite experiments on board of the German vessels.

AVERAGE TEMPERATURE OF UPPER STRATA.

According to Ciel et Terre, May 1, 1901, p. 130, and the Paris Comptes Rendus, November 26, 1900, p. 920, Monsieur L. Teisserenc de Bort has deduced from 240 ascensions of sounding balloons in 1898, 1899, and 1900, at the Meteorological Observatory at Trappes, the results given in the following table, showing the monthly mean temperatures at Paris and in the atmosphere above it:

Month.	Monthly mean temperatures.			Total diminution.	
	On the ground.	5,000 meters.	10,000 meters.	5,000 meters	10,000 meters.
	°	°	°	°	°
January	5.4	—15.3	—47.6	20.7	53 0
February	1.0	—21.8	—53.4	22.8	54.4
March	0.9	—30.9	—53.7	21.8	54 6
April	5.8	—18.4	—49.3	23.7	54.6
May	7.0	—16.8	—51.3	23.8	58.3
June	14.2	— 8.8	—45.3	23.0	59.5
July	15.7	— 8.7	—44.5	24.4	60.2
August	17.8	— 7.2	—41 8	25.0	59.6
September	13.4	— 9.7	—47.9	23.1	61.3
October	10.2	—11.0	—45.1	21.2	55 3
November	3.8	—12.8	—45.2	16 6	49.0
December	0.9	—18.9	—52.4	19.8	53.3

From these figures, which are apparently much more reliable than those given on page 415 of the MONTHLY WEATHER REVIEW for September, 1899, Monsieur Teisserenc de Bort draws the following conclusions:

(1) At 10,000 meters altitude the temperature has a decided annual variation. (The range of monthly means is 11.9, as compared with 16.9 at the earth's surface.)

(2) The amplitude of the annual variation diminishes with altitude.