sign of paraphyses,' and Spaulding and von Schrenk in describing the genus *Glomerella* say that it is 'aparaphysate.'

In some cultures of a *Glœosporium* from guavas the writer obtained an ascigerous stage much like the one described for *Glomerella rufomaculans*. The essential difference noticed at the time was the presence of paraphyses, which *G. rufomaculans* was not supposed to have. The repeated occurrence of paraphyses in the ascigerous stages obtained from *Glœosporiums* and *Colletotrichums*, from other sources besides the guavas, suggested the possibility that *G. rufomaculans* might also be paraphysate. Cultures of this fungus, isolated from a Baldwin apple, produced perithecia containing long, slender paraphyses, apparently identical with those obtained from the other cultures referred to. Besides the paraphyses obtained by means of artificial cultures, others were obtained when conidia of a *Glœosporium* were inoculated into rose canes; they have also been found in perithecia growing naturally in the leaves of a species of *Dracœna*.

In general, the paraphyses from the different sources were long, slender, tapering, and more or less wavy. They were usually more abundant at the time when the asci were developing, but were often present with the mature asci. Like the asci, they were somewhat fugacious.

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CURRENT NOTES ON METEOROLOGY.

KITE-FLYING OVER THE ATLANTIC.

Reference was recently made in these 'Notes' to some of the results of the investigation carried out last summer over the North Atlantic under the direction of Messrs. A. Lawrence Rotch and Teisserenc de Bort. A second report on this expedition is published in *Nature* for March 8 and deals chiefly with the kite results. Mr. H. H. Clayton's study of the data collected in the tropics points to the existence of three strata between sea level and 4,000 meters. The trade, about 1,000 meters in thickness, is damp; usually carries cumulus or strato-cumulus clouds in its upper portion, and varies between north and east in direction. Above the surface trade is a current about 2,000 meters in depth, varying between northeast and northwest, but coming always from a direction to the left of the lower wind when facing it. This second current is very dry, and potentially warm, and its velocity is usually much greater than that of the lower wind. The third stratum begins at a height of about 3,000 meters; comes from a direction between east and south or southwest, being generally from the east in equatorial regions and from the south between latitudes 15° and 30° N.

METEOROLOGISCHE ZEITSCHRIFT.

The numbers for February and March of the *Meteorologische Zeitschrift* contain articles of special interest as follows: 'Cirrus Studien,' a detailed study of cirrus movements, by Professor Klein; 'Der Pulsschlag der Atmosphäre,' by Hann, containing comments on Dr. W. N. Shaw's recent article in *Nature*, December 21, 1905; a very interesting, unique, graphic representation, by S. Zöllner, of the daily insolation in different months and latitudes, undertaken at the suggestion of von Bezold; a summary by Hann of the meteorology of the north polar basin, based on the results of the Nansen expedition; a further study of cirrus, especially of the cirrus cap over cumulus, by M. Möller; a brief discussion of the warm wave of January 20–24 last, in the eastern United States, by Dr. S. Hanzlik.

CLEAN AIR AFTER THUNDERSTORM.

In a recent number of *Nature* (March 22, 1906) Mr. John Aitken notes the effect of a thunderstorm rain in bringing clean air. While making some meteorological observations with his dust-counter on the Eiffel Tower, at Paris, a heavy thunder-shower occurred. Before the rain the number of dust particles was large and showed that the impure air of the city came up in great quantities to the top of the tower. After the shower the number of dust particles was so

far reduced that the air finally became as free from dust as any that Mr. Aitken ever tested on the mountain tops of Switzerland. This increase in purity is ascribed to the 'dragging down' of the upper air to the level of the top of the Eiffel Tower, for the reason that 'rain can not wash the air to anything like that purity.'

KITE-FLYING AT BARBADOS.

The Quarterly Journal of the Royal Meteorological Society, XXXII., 1906, 29–32, contains an account of some kite flights carried out last year at Barbados by C. J. P. Cave, the results having been discussed by W. H. Dines. The humidity traces generally show about 60 per cent. at the surface, rising to 80–90 per cent. at 1,000–2,000 feet, and then falling again in some cases to 50 per cent. or less as the height increases. It is inferred from this that there is some descent of the atmosphere over the region of the smaller West Indian islands in April and May.

RAIN-MAKING IN THE YUKON.

The Toronto News of March 23 contains notice of a contract made by the Yukon Council with one Hatfield, a 'rain-maker,' whereby Hatfield is to receive the sum of $10,000, provided he makes rain to the satisfaction of a board of seven men. If he fails, he is to receive his traveling expenses. Commenting on this matter, the *Ottawa Evening Journal* of March 23 says editorially: "There is no questioning the details * * * as the unique document is on file in the government offices in Dawson."

NOTES.

PHOTOGRAPHS of the aurora borealis, taken by the Russo-Swedish expedition to Spitzbergen in 1899–1900, are reproduced in the *Memoirs of the St. Petersburg Academy of Sciences* (phys. math. class), Vols. XI., XIV., Nos. 9 and 5, 8th series.

THE aquameter, a new instrument for measuring the amount of aqueous vapor in the atmosphere by measuring the reduction of volume produced by the absorption of the water vapor by phosphoric anhydride, is described in the *Quarterly Journal of the Royal Meteorological Society,* XXXII., 1906, 11–13.

R. DEC. WARD.

BOTANICAL NOTES.

AN ALPINE BOTANICAL LABORATORY.

FOR some years an alpine botanical laboratory has been growing from small beginnings into considerable importance on the easterly slope of Pikes Peak, Colorado. The first serious work was done in 1899, although preliminary work and reconnaissances date back half a dozen years further. As finally established, it stands on the southeasterly slope of Engelmann's Canyon, a mile and a half from Manitou, at an altitude of 8,500 feet above the sea. As the altitude of the treeless plains (seven to eight miles away to the eastward) which extend to the foot of the mountains is nearly 6,000 feet, the laboratory is fully 2,500 feet above them, while westward about the same distance the Peak itself rises more than 5,000 feet higher (14,147 feet), far above timber line. The lower mountains and the near-by foothills of the neighborhood afford intermediate altitudes, while marsh and lake vegetation is found in abundance in and about Lake Moraine and the Seven Lakes. The sides of Engelmann's Canyon and its branches are covered with spruce forests and their accompanying vegetation. A hundred feet below the laboratory is the dashing mountain stream, Ruxton Brook, and by its side is the cog-railway from Manitou to the summit of the Peak.

In such surroundings for seven years, Dr. Frederic E. Clements, of the University of Nebraska, has carried on his study of the vegetation of the region. The laboratory proper consists of a single house, large enough to shelter the instruments, apparatus, etc., and if need be, several persons also. More room is needed, but the narrow quarters have not yet seriously inconvenienced those who have worked at the laboratory. Some have taken rooms in the summer cottages in the neighborhood; some have clubbed together and hired a cottage for the summer, taking their meals at the Halfway House, or making