

forming cumulus clouds. (Davis's Elementary Meteorology, page 263.)

#### AIR CURRENTS IN THUNDERSTORMS.

It is well known that in general a thundercloud is fed by currents of air flowing toward its center with a gentle ascending gradient that becomes very steep within the cloud itself. But the descending rain both by cooling the air through which it falls and by driving it downward, causes an outward wind near the ground and near the center of the thunderstorm. On August 5 Mr. Wm. A. Eddy, of Bayonne, N. J., sent up a small hot-air balloon at 4:15 p. m. as a heavy thunderstorm was approaching. After ascending vertically for 100 feet it was caught in the current that swept it toward the center of the storm and at the same time it rose until it was fully 2,000 feet above the earth and finally penetrated the cloud with falling rain. It was then driven downward and backward until it reached a point on the earth quite near its starting point. Two other similar experiments with the same results had been made by Mr. Eddy on July 22 and 27.

This is an interesting method of studying the currents of air in the atmosphere. It may not be wholly new, but is well worthy of frequent repetition.

#### ANCIENT TORNADO TRACKS.

In the August report of the Iowa Monthly Review, Messrs. Sage and Chappel reprint from the Davenport Democrat some account of several tornadoes that must have occurred years ago, whose existence and tracks are demonstrated by long lines of destruction in forests. Such tornado tracks were frequently investigated by Lieut. John P. Finley and included in his tables of tornadoes. The additional ones now recorded are as follows:

Several located by Mr. James E. Lindsay, of Davenport, and E. W. Durant, of Stillwater, in the neighborhood of Davenport. Also, several located by Lindsay in northwestern Wisconsin and Nebraska. The Comanche tornado of 1860. The tornado of Cedar County, June 5, 1854, located by Joseph Wright of Plato, Iowa, who says:

The path of the storm was half a mile wide as it cut its way through the timber. Everything was taken clean—nothing left. When the storm crossed Cedar River it took large stones from the bottom and carried them on land. From the best information I could gather, this storm of 1854 must have reached Lake Erie.

There is no reason whatever to imagine that the tornado is a new phenomenon. It must have been just as common in North America 5,000 years ago as it is to-day. Every well-marked ancient tornado path that can still be recognized in the fallen timber, or a description of which can be obtained from ancient letters, newspapers, or local records should be put on record.

#### BACK NUMBERS OF THE MONTHLY WEATHER REVIEW.

The Smithsonian Institution desires two copies each of the

MONTHLY WEATHER REVIEW for September, 1897, and September, 1898.

The Public Library at Sydney, New South Wales, desires a copy of the MONTHLY WEATHER REVIEW for November, 1895.

The Meteorological Observatory at Bremen, Germany, desires to obtain the complete years 1897 and 1898.

In general, it is best for those having copies to spare of the MONTHLY WEATHER REVIEW to send them to the Editor of the REVIEW and not to the person for whom the request is made, as in the latter case unnecessary duplicates accumulate on his hands.

#### THE SECOND WELLMAN EXPEDITION.

Mr. Evelyn B. Baldwin, of the Weather Bureau, who was granted a furlough to enable him to accompany the second Wellman expedition in the capacity of meteorologist, has very recently returned from Franz-Josef Land, and has resumed his duties in the Weather Bureau.

We are authorized by Professor Moore to announce that a report on the meteorological work of the expedition is now in course of preparation and that it will be published shortly by the Weather Bureau.

The region covered by the expedition was mainly between latitude 80° 05' and 81° 20' north and longitude 58° to 64° east. The report will include, in addition to hourly barograph and thermograph readings, twice daily eye observations of the clouds, as to amount, kind, and direction; wind movement by Robinson anemometer; observations of the aurora, and other natural phenomena.

Typical pressure and temperature curves, as well as those made during times of unusual atmospheric disturbances, will be reproduced in full. The material collected by Mr. Baldwin is not only interesting and valuable in itself, but also in its relation to the work of former expeditions, since it forms a connecting link between that of Dr. Blessing and Lieutenant Johannsen of the Nansen expedition, as well as that of the Jackson-Harmsworth expedition and work now being prosecuted in Franz-Josef Land by the Italian expedition under command of Prince Luigi, duc d'Arbruzzi. His aurora work was complementary to that done by himself on the Peary expedition of 1893-94 in Greenland.—A. J. H.

#### A SUCCESSOR TO SENOR BARCENA.

The President of the Republic of Mexico has appointed Manuel E. Pastrana director of the Central Meteorologico-Magnetic Observatory at the City of Mexico as successor to the late Don Mariano Bárcena. The climatology of the Republic is committed to this Central Observatory, but the daily weather telegraphy, maps, and predictions are conducted by the Federal Department of Telegraphs. The stations of the latter organization are new and are in the telegraph offices and convenient to the business men of the Republic, but those of the Central Observatory represent the agricultural and educational interests.

#### THE WEATHER OF THE MONTH.

By ALFRED J. HENRY, Chief of Division of Records and Meteorological Data.

##### PRESSURE.

The distribution of monthly mean pressure is graphically shown on Chart IV. The persistence of a West India hurricane off the coast of North Carolina, and the very low

barometer readings during the prevalence of the storm explain the unusually low monthly means along the south Atlantic coast. Ordinarily pressure in August is highest on the south Atlantic and north Pacific coasts.

There was a very general decrease in pressure from July to