than is given to it by Credner. The Baltic and the lakes lie, as a whole, between an oldland and a series of less ancient strata, dipping away from it. The Gulf of Bothnia and Lake Superior are both within the limits of the oldland; the other basins are along the margin. In our Great Lakes, local faulting has not been noticed. As for the Swedish faults, most of them are too ancient to have any effect on existing topography, except as guides for modern erosive forces. Warping of a longitudinal depression, originally produced by ordinary denudation and modified by glacial erosion and deposition, appears to deserve greater importance than Credner allows it.

### 'SHUT-IN' VALLEYS.

THE St. François mountains of southeastern Missouri consist of very ancient rock masses that have been more or less completely buried in Paleozoic strata, and that are now partly resurrected by the stripping of their cover. An expected feature of such mountains is the occasional occurrence of narrow superposed valleys, either still occupied or now deserted by their streams. A typical example of the latter kind is found in the notch that holds Devil's lake in the Baraboo ridge of Wisconsin, explained by the Geological Survey of that State as the former superposed course of the Wisconsin river. A report by Keyes on the Mine la Motte sheet of the Missouri geological atlas now announces the occurrence of several narrow valleys of this class still occupied as water courses, and so unlike the broader valleys up and down stream that they are locally known as 'shut-ins.' A good example is found two miles west of Fredericktown, where the Little François river passes through a narrow gorge in the porphyry mass of Buckner and Devon mountains between open limestone valleys up and down stream. Discordance of drainage with their surroundings, as well as of structure, form and products, thus seems to characterize resurrected ancient mountains. Monadnocks, on the other hand, may be said never to be traversed by streams. W. M. DAVIS.

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### *CURRENT NOTES IN METEOROLOGY.*

UNDER the heading Current Notes in Meteorology it is intended to publish, from week to week, or as opportunity may offer, short notes on recent publications of general interest and of importance in meteorology and climatology. Meteorology, although one of the newest of the sciences, is growing in importance every day, and its literature is rapidly increasing. To-day every scientific man needs some knowledge of what this literature is. Unfortunately, since the suspension of the *American Meteorological Journal*, in April of this year, there exists no representative independent meteorological publication in the United States. There is, therefore, at present no American journal to which one may turn for information regarding recent meteorological literature. It is the main purpose of these notes to supply this need, and to give the titles, together with a few words as to the contents, of such publications in meteorology and climatology as seem to warrant notice in a general scientific journal such as this is. Mention will also be made of meteorological phenomena of interest, accounts of which appear from time to time in records of travel, the *Monthly Weather Review* of our Weather Bureau, the bulletins of the various State Climate and Crop Services, etc. In this way it is hoped to furnish, in this column, a source of information on general meteorological and climatological matters that is at present lacking in the United States.

MAY 1st was the date set for the beginning of the International Cloud Year, in accordance with a resolution adopted by the

International Meteorological Committee at its meeting in Upsala in August, 1894. Nine countries have promised to coöperate in the work, which includes determinations of the altitudes, directions and relative velocities of clouds. These countries are as follows: Batavia, France, Norway, Portugal, Prussia, Roumania, Russia, Sweden and the United States. One or two stations in each country are to furnish observations of altitudes, determined by means of theodolites or photogrammeters, while at certain auxiliary stations records of direction and relative velocity will be kept. In the United States, the chief office of the Weather Bureau, in Washington, and the Blue Hill Observatory, in Readville, Mass., will determine altitudes, while the observations of direction and velocity will be made at Washington, New York, Buffalo and Detroit. The records collected during the year will certainly throw much light on certain much-debated questions of cloud movements and of cyclonic action.

Artificial tornado clouds have recently been produced by Dines in England (Quart. Jorun. Roy. Met. Soc., Jan., 1896, 71–73). The apparatus used was a simple one. Two glass screens, 2 ft. high, each consisting of three leaves, were set upon a table so as to leave a hexagonal space in the middle. On top of the glass plates a wooden panel of the requisite size was placed, with a round hole 7 in. in diameter in the center. In the hole there was a ventilating fan, driven by hand, and in the center of the table, between the screens, a shallow vessel containing water was placed, heated by a spirit lamp, in order that sufficient vapor might be obtained to form the funnel cloud. When the fan is turned on in this apparatus an upward current of air is produced at the center, and a cloud is formed. This cloud has a distinct rotary motion around the center, increasing in velocity as the center is approached. There is further a strong updraft, a great decrease of pressure in the center, and the cloud column is distinctly hollow, in all these respects closely simulating the actual tornado funnel cloud. The conditions of the experiment are, however, so unlike those existing in nature during the occurrence of tornadoes that, although interesting, the results cannot be considered as very important.

Attention has lately been again directed to the matter of Arctic Exploration by reasons of the rumors as to Nansen's voyage, and the frequent allusions, in scientific papers, to Andrée's balloon expedition, which is to start this summer. The recent publication of Gen. Greely's Handbook of Arctic Discoveries (Boston, Roberts Bros., 1896) is therefore very timely. Gen. Greely, as is generally known, led the United States expedition sent out in 1881 to take part in the system of international meteorological observations planned by the International Meteorological Conference and the International Polar Conference in 1879. Fifteen expeditions were sent out as a result of this plan, and they together made up the line of International Circumpolar Stations, whose work has been of such great importance in meteorology. Gen. Greely gives a general account of Arctic discoveries, and devotes one chapter to the International Circumpolar Stations.

A note on a rather unusual meteorological phenomenon appears in the February Bulletin of the New England Section of the Climate and Crop Service. On February 19th, on the campus of Trinity College, Hartford, Conn., a southerly wind, blowing over a thin covering of damp snow, caught up little pellets of this snow and, rolling them over and over, made them into muffs or 'rollers.' These 'rollers' increased in diameter as they were driven on by the wind, until some of them measured 8 inches

in diameter and 8 inches in length. The cylinders had conical depressions at each end, these depressions nearly meeting at the center. Similar 'rollers' were observed in Connecticut on February 20, 1883, on which day some of them measured 12 x 18 inches, and their paths could be traced for 20 or 30 feet in the snow.

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## *CURRENT NOTES ON ANTHROPOLOGY.*

### ELEMENTARY PSYCHICAL CONCEPTS.

THE eminent anthropologist, whom his disciples love to call the 'Altmeister' of the science, Dr. Adolf Bastian, has added another to his numerous works by one recently published in Berlin (Weidmannsche Buchhandlung), entitled 'Ethnische Elementargedanken in der Lehre vom Menschen.' These elementary or rather elemental thoughts may be looked upon "as the germinal matter out of which proceeded the psychical growth of the ethnic organism in its various methods of mental or spiritual expression," as the author states in his preface.

The subjects treated are those opinions which primitive peoples had and have on the topics relating to the ultra- or supernatural world, and its relations to man; such as divinity, the under-world, guardian spirits, mysteries, names, prayer, sacrifice, prophecy, heaven, hell, fate, evil, good, the creation, miracles, femininity, vows, witches, immortality, and a host of similar notions, which the author treats with his usual astonishing, overflowing and overwhelming erudition, and with that complexity of style which simply appals a foreign reader. Anyone who wishes a 'hard lesson' in German should take up the author's introduction to his second part.

### PATHOLOGY IN ETHNOLOGY.

ONE of the most enlightened German writers on ethnology, Dr. Thomas Achelis, makes the following remark in an article in *Globus*, No. 4, 1896: "Every form of degeneration, since it is a pathological process, does not belong primarily to subjects of ethnologic study." He would grant the first place only to subjects which reveal organic development, progressive evolution, and lift to higher phases of culture.

This seems a serious error. It is the duty of the ethnologist, as of every other scientist, to study things as they are, awarding to each an equal amount of attention. What appear to be degenerations are often necessary steps in life process. Important advances in physiology have frequently been gained by the study of pathology. Science is untrue to itself when it undertakes to make the defense of evolution its chief aim. It should seek exact truth, indifferent as to whether that makes for goodness or for badness, as we judge those norms. "What seems most against nature, is yet natural," said Goethe; and whatever is natural, whatever is real, in other words, should claim our consideration, independently of its imagined tendencies; and nowhere is this more essential than in ethnology.

### THE ANTHROPOLOGIC STUDY OF PERSONALITY.

THE word *persona* originally meant the mask which actors wore on the scenic stage; and a cynic would say that personality often means the same to-day. Strictly, we may use it as a synonym of individual self-consciousness, or the knowledge of self as a subject. In previous ages it was studied exclusively by introverted mental observation, and this led to vague speculations on the "Ego," of small positive worth.

In the '*Revue Scientifique*,' January 25th, Prof. Pierre Janet, of the College de France, lays down the principles for the anthropologic study of this phenomenon of personality. In itself it is to be regarded as the synthesis of the conscious and unconscious mental experiences of the individ-