'fragment' includes a part of the South Downs, a monoclinal ridge of chalk that forms the southern enclosure of the denuded area of the Weald. The ridge is trenched by the consequent valley of the Arun, an excellent example of its class; yet the Arun is merely said to be 'a typical river of the Weald,' leaving the uninformed reader entirely in the dark as to the features that it typifies, although a paragraph is allowed to the no more important matter of a comparison of Selsey bill, with two other salients of the south coast. The beautiful meanders of the Arun in its transverse valley through the Downs are passed over without explanation and without reference to similar features elsewhere, although the square cross-roads of Chichester are interestingly explained as of Roman origin, and the mean values of hours of sunshine and of atmospheric pressure are properly stated in relation to the values that obtain in other parts of Britain. As to the origin of the Arun valley, we find only the skeptical statement that it "might possibly be explained by supposing that the river * * * course was determined by the original dip slope of the Wealden Dome." Cocking pass, a notch in the Downs west of the Arun gorge in all probability marks the former path of a consequent stream whose head-waters have been diverted to the Arun system by the subsequent Rother, yet no mention is made even of the possibility of such a change, although space is found for Reid's venturesome theory that the dry valleys of the Downs were formed during 'the end of the glacial period,' when the usually pervious chalk 'was frozen into hard and impervious rock in which the torrents resulting from the melting of the higher snow cut out the valleys'; no consideration being here given to the work of ordinary subaërial erosion on the chalk during a preglacial time that was long enough to witness the excavation of the interior lowland of the Weald.

Dr. Mill's paper contains a large amount of well chosen and well presented material. It will probably be taken as a model upon which later essays will be framed. It is therefore all the more to be regretted that physiographic description was not more fully and systematically supplemented by explanation, and that the many local types of land and water forms were not presented as members of their class, rather than as (apparently) isolated examples.

THE PESCADORES ISLANDS.

The Pescadores or Hoko islands, lying between Formosa (Taiwan) and the Chinese coast, are described by Koto (Notes on the Geology of the dependent isles of Taiwan, *Journ. Coll. Sci., Imp. Univ., Tokyo*, xiii, 1899, pt. 1) as the ragged remnants of a series of nearly horizontal basalt sheets with intercalated strata of supposed Tertiary age. The islands and islets, 57 in number (besides countless reefs and ledges), are low and tabular or mesa-like, with deep weathered soil on the uplands. Their original area has been much lessened erosion, especially by the attack of the waves, as the uplands descend to the irregular shore line in steep slopes, broken at different levels by the edges of thin basalt sheets. The surface is barren and desolate, 'a quasi-desert, and not an oasis, amidst the green island-world of southeastern Asia,' a condition that is attributed to the savage violence of the wind, which blows from the northeast during three quarters of the year. The rains of the southwest winds in summer sink into the ground, forming few streams; erosion at present is chiefly performed by the winds and waves. Fringing and barrier coral reefs grow nearly all around the island upon the basaltic shelf.

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CURRENT NOTES ON METEOROLOGY.

CLIMATE OF SAN FRANCISCO.

UNDER the direction of the present Local Forecast Official of the Weather Bureau, at San Francisco, Mr. A. G. McAdie, special attention is being paid to studies of local climates in California. The *Monthly Review of Climate and Crops: California Section*, has thus lately contained reports upon the climates of Eureka, Fresno, Los Angeles, Sacramento, San Bernardino, San Diego, San Francisco, Stockton and Visalia. Now there has been issued *The Climate of San Francisco, Cal.*, as Bulletin No. 28, of the Weather Bureau, prepared by A. G. McAdie and G. H. Willson. The records which have been studied go back, in the case of the monthly and

annual rainfalls, to 1849, while the temperature record begins in 1871. The warmest month at San Francisco is September, with 60.9°, the coldest is January, with 50.1°. The highest temperature ever recorded was 100°, on June 29, 1891, and the lowest was 29°, on January 15, 1888. A comparison of the observations at San Francisco with those made at the Weather Bureau Station at Mt. Tamalpais (2373 ft.) brings to light several interesting facts. During June, 1899, the temperature *rose* at the average rate of 1° in every 203 feet of elevation between San Francisco and the mountain station. Fogs seem to occur at times of steep inverted gradients, when the temperature at 2500 feet is considerably higher than at sea level. The annual rainfall is 23 inches. The largest yield of crops follows a generous rainfall in March and April. The average number of clear days is 149; of partly cloudy days, 137, and of rainy days, 69.

KÖPPEN'S KLIMALEHRE.

KÖPPEN'S *Klimalehre* is a compact summary of the principles of climatology. It is a small octavo volume of 122 pages and 7 plates, and therefore cannot for a moment be compared with Hann's *Handbuch der Klimatologie* as regards completeness of presentation and breadth of view. Köppen's little book will, however, serve very well for those who wish to learn something of general climatology without going far into the subject. Considering the very limited size of the volume the matter is admirably presented. The book appears in the *Sammlung Göschen* (Leipzig, 1899. Price, 80 Pfgs.), in which collection there has already been published Trabert's *Meteorologie*, also an excellent brief discussion of the essential portions of the subject with which it deals.

DESTRUCTION OF BIRDS BY A HURRICANE.

Nature for April 5th notes a remarkable fact in connection with the West Indian hurricane of September, 1898. It appears that before the hurricane one of the tamest and commonest birds on the island of St. Vincent was a small humming-bird, but none of these birds have been seen since September, 1898. Other humming-birds, which were formerly less common than the one now missing, are still to be seen in St. Vincent, but in diminished numbers. The bird which has thus apparently been exterminated was the smallest of the three species known on the island, and hence probably also the most easily killed.

THE JUNGFRAU RAILWAY AND MOUNTAIN SICKNESS.

AN interesting note in connection with the physiological effects of diminished pressure at high altitudes is contained in an article on the Jungfrau railway, published in the *Engineering Magazine* for April. The work of construction is now being carried on very largely by Italians, but when the tunnel reaches an altitude of about 3000 meters it is considered almost certain that Swiss mountaineers will have to be employed. The latter will, it is believed, be far better able to do the necessary hard labor at the greater altitudes.

A REMARKABLE DIURNAL RANGE OF TEMPERATURE.

Ciel et Terre, for April 16th, contains a record of an extraordinary diurnal range of temperature observed in Mongolia during the year 1898 by the traveller M. Zichy. At Urga the thermometer at 5 A. M. stood at 30.2°, while the temperature at noon was 105.8°.

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THE CONGRESSES OF THE PARIS EXPOSITION.

MORE than one hundred and fifty International Congresses, dealing with various subjects of scientific, industrial and social importance, are to be held this summer in Paris, and will form no small part of the interest of the Exposition, supplementing as they do the exhibits, furnishing the theory, as the exhibits set forth the accomplishments, of art and industry.

The delegates will be divided into three classes, those who officially represent the Government, the representatives of local and national organizations, and those who attend out of personal interest purely, the two latter classes paying a membership fee varying usually from two to five dollars. As all Congresses, even those of a permanent character of long standing, such as the Congresses of Medicine, Geol-