deep oceanic circulation. (See SCIENCE III., 185, 824.)

THE EAST AND WEST INDIES.

PROF. K. MARTIN, of Leyden, discusses the origin of the above-named region (Zur Frage nach der Enstehung des ost- und westindischen Archipels. Hettner's Geogr. Zeitschr., II., 1896, 361–378). His style of treatment is elementary and somewhat incomplete, and his method does not reach far into the past. Sea cliffs cut in elevated coral reefs are described at three levels on Curaçao, where the successive steps seem to be of artificial regularity. As the cliffed reef rings around the island with small interruption, it is regarded as an uplifted atoll. Other examples are given. In the East Indies, on Saparua, east of Amboina, eleven terraces are found in elevated reefs; on Buton, southeast of Celebes, nine. The coastal plain of Dutch and British Guiana slopes gently northward; here reefs are wanting, as the shallow impure water was unfit for coral growth; but former shore lines are distinctly marked by elevated beaches, largely composed of shells, like the existing beach walls. Fourteen of these have been counted, Paramaribo being on one of them. Elevated coral reefs are again wanting on the larger East Indian islands, but their marginal plains contain plentiful marine shells of recent species; these being well preserved about Batavia. Additional facts are mentioned, but they hardly cover the wide areas considered. It is concluded that at a recent date the configuration of the shore lines was very unlike that of to-day, and that an extensive elevation has been in progress.

THE RIVER ETSCH.

PENCK gives an account of Etsch, flowing southward through the Tyrol to the Italian plain, where it is known as the Adige (Zeitschr. Deutsch. u. Oesterr. Alpenvereins, XXVI., 1895, 1–15). The river lies somewhat to the east of the axis of a Tertiary trough that is included between the Adamello Mountain group on the west and the dissected Dolomite plateau on the east. Below its torrential headwaters, rock is not exposed in the aggraded valley floor. Lateral streams bring in much detritus, forming fans at their mouths and driving the main stream against the opposite valley wall. Up stream from each fan the slope is moderate, and the flood plain is sometimes swampy; but immediately down stream from the fans the descent is rapid. No cause is assigned for the clogging of the rock-cut valley. The narrow gorge through which the river emerges upon the plain is here, as commonly elsewhere, a result of morainic displacement from the preglacial valley. The valley is slightly incised beneath the general level of the plain for about a third of the way to the mouth; but on reaching the level where the ground water of the plain emerges in numerous springs (fontanili) the river becomes an aggrading stream and rises above its surroundings, so as to need diking. In this lower part of its course it is turned aside from the Po, whose aggrading action is more powerful, and for this reason the Adige pursues an independent course to the Adriatic.

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CURRENT NOTES ON METEOROLOGY.

CLIMATIC CONTROL OF CIVILIZATION IN AFRICA.

THE influence of climate on civilization in Africa was brought out by Scott Elliot before the Geographical Section of the British Association at Liverpool. Africa may be divided into four regions: (1) the wet jungle, characterized by great heat and continuous humidity; (2) the deserts, with no proper rainy season; (3) the acacia and dry grass region, with distinct dry and wet seasons, and (4) the temperate grass and forest region, with moderate rainfall, mod-

derate heat and no season so dry as to leave a permanent mark on the vegetation. As regards the characteristics of the people who inhabit these different regions, it seems that the wet jungle is the home of small weak tribes in the lowest stage of civilization. Healthy and vigorous tribes, on the other hand, inhabit the desert. The acacia region is rather densely populated everywhere, but no large emigrations have taken place from it. The temperate grass and forest regions are inhabited by vigorous and turbulent native tribes, who have, except in one instance, resisted both the Arab and the European.

ECLIPSE OBSERVATIONS.

Meteorological observations made in Russia during the solar eclipse of August 9th are at hand (Met. Zeitschr., October, 1896, 399–400). At the Central Physical Observatory, in St. Petersburg, in spite of the low altitude of the sun, the dull weather and the light rain, a fall in the temperature of the air and of the earth's surface was noticeable. At the beginning of the eclipse (4:51 a. m.) the air temperature was 55.4°; at 5:45, 55.2°, and at the end of the eclipse (6:43 a. m.), 55.7°. The temperature of the earth's surface fell more decidedly. At Pawlowsk, where the sky was also covered with clouds almost all the time, and light rain was falling, the air temperature at the beginning of the eclipse was 56.6° ; at the middle, 56.1°. A Sprung barograph showed a sudden fall of .25 mm. before the beginning of the eclipse, while during the eclipse there was a rise of .75 mm., and after it a fall. Such rises of pressure have been previously observed during solar eclipses, and are probably due to the decrease in temperature caused by the cutting off of the sun's rays and the resulting in-creeping of the air above.

EARLY MEASUREMENTS OF CLOUD HEIGHTS.

The October number of the *Meteorologische Zeitschrift* contains a note on the earliest measurements of cloud heights of which there is record. It appears that two Jesuits, Ricciolo and Grimaldi, made some trigonometrical measurements of the heights of clouds in 1644 near Bologna. Riccioli, in his work, 'Almagestum novum,' collected the previous writings on the subject and proposed a scheme for calculating the heights of clouds by observations of their shadows. The luminous night clouds, about which there has been some discussion within the past few years, were observed by Maignan, and explained by him, in 1648, as being illuminated by the sun, they floating at so great a height as to be outside of the earth's shadow.

THE TORNADO OF SEPTEMBER 10TH IN PARIS.

An account of the Paris tornado of September 10th., last, appears in *L'Aerophile* for October, together with diagrams showing the curves traced by the self-recording instruments at the Tour St. Jacques Observatory. The barograph curve indicates a sudden fall of 6 mm., an immediate recovery to a slightly higher (.25 mm.) pressure than was recorded just before the fall; then a slight fall of .50 mm., followed by a gradual rise. The air temperature at the top of the tower rose at the time of lowest pressure, rather suddenly, and then fell. The hygrometer indicated decreasing humidity for some time before as well as during the time of minimum pressure. The data as to the destruction caused by, and the general characteristics of, the phenomenon point to its having been a true tornado, though not by any means a violent one.

NOTES.

The Hot Winds of Northern India and *An Account of a Storm Developed in Equatorial Regions* are the subjects of two recent papers by Eliot and Dallas respectively, in Vol. VI., Part III., of the Indian Meteorological Memoirs.

R. C. MOSSMAN: *The Meteorology of Edinburgh.* Transactions Roy. Soc. Edinb., Vol. XXXVIII., Part III., No. 20, 1896. Contains the reductions of observations made in Edinburgh during the past 132 years, with colored plates illustrating some of the principal features of the climatology of the city.

TH. ARENDT: *Die Bestimmung des Wasserdampfgehaltes der Atmosphäre auf Grund spektroskopischer Messungen.* Met. Zeitschr., Oct., 1896, 376–390. The results of an investigation carried on at the Potsdam Observatory during 1895 and 1896.

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CURRENT NOTES ON ANTHROPOLOGY.

ARAUCANIAN STUDIES.

THE excellent studies of Dr. Rudolfo Lenz in modern Araucanian have already been mentioned in these notes. A new instalment of them includes dialogues in the Pechuenche dialect, some small original pieces in the Picunche and Huilliche dialects (Spanish and Araucanian) and a collection (72 pages) of Araucanian tales and stories published in German in Valparaiso. The latter are divided into mythological tales, animal stories, others of European origin and some songs. They are interesting examples of the present condition of folk-lore among these intelligent natives.

No other investigations into the language of the aborigines of Chili equal in method and accuracy these of Dr. Lenz. They are, in fact, models of their kind.

The language itself is one of beauty and strength. Indeed, in the last century the missionary Haverstadt was so impressed with its resources that in 1777 he published a work upon it ('Chilidugu') in advocacy of its adoption as an universal tongue for the world, a ready-made Volapuk.

The publication of Dr. Lenz can be obtained through Karl M. Hiersemann, Königsplatz 2, Leipzig, Germany.

RACE DEGENERATION IN THE SOUTHERN STATES.

AN unusually thoughtful article appears in the Bulletin of the American Academy of Medicine (Vol. II., No. 9), by Dr. John T. Searcy, superintendent of the insane asylum at Tuscaloosa, Ala. The subject treated is insanity in the South, and its relations to race were brought out prominently. Some of these may be noted.

The native American (white) when insane is more adaptable to his environment than any other stock. The American Indian is just the opposite—not at all adaptable to new conditions. Insanity is a symptom of a race-degenerating process. It is more observable in negroes since the Civil War, as, compared to the condition of slavery, "degeneracy is increasing in the majority of the negroes." The whites are less so, because "during the time of slavery brain idleness and brain injury prevailed to a greater extent among the whites than at present." Compared with his previous condition in Africa, the negro was much better off as a slave in America than he ever was before. This general improvement in his condition showed itself in the absence of mental degeneracy. His present types of insanity 'show the same race traits in the hospital which they do on the outside.' That is, they are more emotional, and yet his delusions are weaker and more transient.

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NOTES ON INORGANIC CHEMISTRY.

IN the last Chemical News Prof. Brauner, of the University of Prague, discusses the theory that argon is a polymer of nitrogen, N_3, and helium a polymer of hydrogen, H_4, or more probably a mixture of H_3 and H_5. His argument is directed almost solely against the elementary nature of argon and helium and the arguments which have been put forward to show that argon is not N_3.