mixing of cold air with warm moist air, and since the temperature of the mixture falls to the arithmetical mean of the other two, so much moisture must be condensed as corresponds to the considerably lowered saturation-point which results from the above process. Now, however, it is known that both the rise in temperature of the cold air and the heat set free by the condensation of the moisture must be taken into account, so that in reality very little moisture is precipitated: this was clearly shown by the speaker in a series of examples, both by calculation and by graphic representation. Thus appreciable precipitations occur either very seldom or not at all when masses of air of differing temperatures are mixed together. Precipitation only occurs when a saturated mass of air is directly cooled, such cooling being brought about in nature chiefly by radiation and by the upward flow of currents of air. Hence the precipitations which take place on the lofty sides of mountains as the air rises along them, as a result of its having been warmed, and in cyclones. Since warm dry air is carried into the cyclone from the anticyclone, the clouds formed at the edge of the cyclone are subsequently absorbed; thus the clouds are most dense in the centre where the pressure is a minimum, and are progressively less dense towards the periphery. Dr. Vettin showed several experiments on the movement of smoke inside a glass case which was slowly rotating about its centre. Small vessels filled with ice were suspended in the case, causing downward currents of air, and towards these places the smoke made its way from the periphery in a whirling, screw-like formation.

VIENNA.

Imperial Academy of Sciences, March 14.—The following papers were read:—On the oxidation of β-naphthol, by E. Ehrlich.—On the encysting of protoplasm with regard to the function of the cell-nucleus, by G. Haberlandt.—Contribution to the anatomy of the aërial roots of Orchidea, by E. Palla.—Results of comparative researches on the spectra of cobalt and nickel (sealed), by A. Grünwald.—Contribution to the systematic knowledge of Muscaria (sealed), by F. Brauer.—On the intestinal mesenteries and omenta in their normal and abnormal state, by C. Toldt.—On the oxidation of paraphenylene-diamine and paramido-phenol, by E. von Bandrowski.—On some phenomena of electrical discharges and their photographic fixation, by A. von Obermayer and A. von Hübl.—On the elements of the geological structure of Rhodus, by G. von Bukowski.—Determination of the orbit of the Andromeda (175) planet, by F. Bidschof.

AMSTERDAM.

Royal Academy of Sciences, April 20.—Prof. van de Sande Bakhuigzen in the chair.—M. Martin read a paper on the so-called "old-slate formation of Borneo." This formation is known among others in the western parts of the island, where a few fossils were collected by the mining engineer, C. J. van Schelle, viz. at the Soengli Molsong, and near Boedoek and Sepang, in the "Chinese districts." It appeared, on examination, that these fossils belong to the genera Gervillia and Corbula, and as neither genus ever occurs in Palæozoic strata, the "old slate" here cannot be Palæozoic. The slates are, moreover, covered by Tertiary strata, so that the only alternative is to assume that they belong to the Mesozoic age. A further confirmation of this hypothesis he found in the fact that he had succeeded in finding, in a grey limestone of the Bojan, in the Upper Kapoes dominion, *Orbitulina centicularis*. As this fossil is Cretaceous, and the limestone in question occurs likewise in company with clay-slate, he concluded that the strata with Gervillia and Corbula are of the same age as those with Orbitulina, and that they all belong to the Cretaceous period. M. Martin feels persuaded that the Cretaceous formation is widely spread in the Indian Archipelago, and, on account of the absence of fossils, has been partly included among the "old slate," and partly among the Tertiary system.

STOCKHOLM.

Royal Academy of Sciences, May 8.—Prof. S. Lovén gave an account of a recently published memoir, by Prof. J. Steenstrup in Copenhagen, with the title, "On the Station of the Mammoth Hunters at Tredmort in Moravia."—Baron Nordenskiöld exhibited the first copy, now ready, of his great work, "Facsimile Atlas to the Oldest History of Chartography, containing copies of the best maps printed before the year 1600," a volume in folio, with fifty-one large maps, and eighty-four maps and figures inserted in the descriptive letterpress. The interesting manuscript map of Northern Europe from 1467, discovered by Baron Nordenskiöld in the library of Count Zamoiski at Warsaw, is also copied.—He also exhibited a large meteoric stone, 10½ kilogrammes in weight, which fell on April 3, this year, in the province of Scania.—Contributions to the knowledge of the absorption of the radii of heat through the various components of the atmosphere, by Dr. Ångström.—On the construction of the integrals of the linear differential equations, by Prof. Mittag-Leffler.—Note sur la série généralisée de Riemann, by Dr. A. Jonquière, of Bern.—On the action of cyanium on phenyl-sulpho-urinate, by Herr D. S. Hector.—On the action of some oxidating bodies on phenyl-sulpho-urinate, by the same.—On integration of differential equations in the problem of the n bodies, by Prof. Dillner.—The singular generatrices of the binormal and principal surfaces, by Prof. Björling.—Studies on the peat bogs of Southern Scania, by Herr G. Andersson.—Zoological notes from Northern Bohuslän, by Herr C. A. Hansson.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

The Unrivalled Atlas (W. and A. K. Johnston).—An Illustrated Manual of British Birds, Parts 11–14: H. Saunders (Gurney and Jackson).—A History of the Study of Mathematics at Cambridge: W. W. R. Ball (Cambridge University Press).—Nature's Voice: H. H. (Vickers-Wood).—The Physiology of the Domestic Animals: Dr. R. M. Smith (Davis).—A Visit to Stanley's Rear Guard: J. R. Werner (Blackwood).—Reports from the Laboratory of the Royal College of Physicians, Edinburgh, vol. i. (Pentland).—A New Theory of Parallels, 2nd edition: C. L. Dodgson (Macmillan).—Life of Sir William Rowan Hamilton, vol. iii.: R. P. Graves (Longmans).—Untersuchungen über die Theorie des Preises: R. Auspitz und R. Lieben (Leipzig, Duncker and Humblot).—Spacial and Atomic Energy, Part 1: F. Major (Eyre and Spottiswoode).—Record of Experiments in the Manufacture of Sugar from Sorghum, 1888: H. W. Wiley (Washington).—Six Species of North American Fresh-water Fishes; Six Lithographs from Drawings by A. Sonrel; Explanation of Plates by D. S. Jordan (Washington).—Transactions of the Academy of Science of St. Louis, vol. v., Nos. 1 and 2, 1886–88 (St. Louis).—Journal of Morphology, vol. ii., No. 3 (Boston, Ginn).—Journal of the Marine Biological Association, New Series, No. 1 (Plymouth).—Journal of the Anthropological Institute, May (Trübner).

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