* * "Botanical nomenclature means, or ought to mean, the same name for the same group of plants, for all botanists of whatever language or nation. This is agreed to by all. And it is in a general way as universally conceded that, under certain limitations, and with important exceptions, the scientific name of every plant species is determined by the principle of priority of publication."

Dr. Greene then states precisely three important and fundamental nomenclatural principles, as follows: "(1) The employment of Latin as the language of plant names; (2) priority of publication, and (3) the binary character of all species names as being made up of a genus name of one term and a species name of one term." A plant is, therefore, to bear the oldest published Latin generic name of one term, combined with its earliest published Latin specific name of one term. These rules, while plain and evidently just, involve many difficulties in their application. Thus it happens that it is often difficult to determine what are the limits of many of the Linnæan genera as given in the 'Species Plantarum' of 1753, on account of the fact that Linnæus often *compiled* without critical examination. In the course of his discussion Dr. Greene suggests the advisability of taking Tournefort's 'Institutiones' of 1700 as the starting point for the genera of plants.

In regard to specific names much confusion has arisen on account of the insufficiency of so many of the Linnæan descriptions, and this can be helped in many cases only by a careful study of the earlier botanical authors, Dodonæus, Ray, Bauhin, Clusius, Plukenet, Micheli, Dillenius, Haller, Le Vaillant and Gronovius. "Just as the master of Latin philology must have close acquaintance with each one of the ancient Latin authors, so should every botanical scholar who would perfectly understand Linnæus be somewhat philologically familiar with every one of those standard pre-Linnæan authors to whose descriptions of plants Linnæus refers us on every page of his."

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CURRENT NOTES ON PHYSIOGRAPHY.

GEOGRAPHY OF INDIAN TERRITORY.

A THESIS presented to the Department of Geology of Stanford University by N. F. Drake on 'A Geological Reconnaissance of the Coal Fields of the Indian Territory' (Proc. Am. Phil. Soc., XXXVI., 1897, 326-419, map) contains a number of geographical notes on a little known district. The Ouachita mountain system extends into the territory south of the Arkansas and Canadian rivers, repeating the features described in Arkansas by Griswold; sharp monoclinal ridges on close folded structures, and flat-topped mountains, often synclinal in structure, where the folds are more open; all with an east and west trend, and contributing to the western extension of Appalachian-like disturbance and topography, as explained by Branner (*Amer. Jour. Sci., November, 1897*). A plateau with broad uplands and narrow valleys enters from the Ozark region on the northeast as far as the Grand and Arkansas rivers; repeating the features described for Missouri by Marbut (SCIENCE, V., 20), the 'Boston mountains,' a plateau with ragged promontories and outliers presenting the strongest relief in this division. The Great Plains enter from the northwest into the angle between the Grand and Canadian rivers; an extended area of moderate relief, descending gently eastward, and here and there falling in terrace-like escarpments, 50 to 100 feet high, as the harder strata are passed; thus repeating features so well described by the University of Kansas Survey on the North (SCIENCE, V., 945).

SUBMERGED VALLEYS ON THE CALIFORNIA COAST.

A PRELIMINARY paper of 1886 is now followed by a more detailed account of the 'Submerged Valleys of the Coast of California, U. S. A., and of Lower California, Mexico,' by George Davidson (Proc. Cal. Acad. Sci., 3 Ser., Geol., I., 1897, 73–103). Along our Pacific coast the continent descends to depths of 2,000 to 2,700 fathoms within fifty miles from the shore line. There is generally a ten-mile platform sloping out to the 100-fathom contour, after which the descent is relatively sharp. The edge of this platform is broken by twenty-seven 'submerged valleys,' finely illustrated in nine plates where all soundings are shown, so that one may measure the accuracy of the interpolated contours and be convinced not only that the platform is sharply notched where the submerged valleys are drawn, but also that it is essentially continuous elsewhere. The notches are sometimes in line with rivers on the land, as at Monterey and Carmel, but others appear to be entirely independent of existing drainage, as King peak and San Pablo valleys, both of which have to be named after mountains opposite their heads. The curious story is told of a vessel that was lost on the rocky coast fronting King peak; she probably had run in along the axis of the submerged valley and, finding no bottom with the ordinary line, thought she was at a safe distance off shore.

The possibility that certain chasm-like valleys, such as that of Vincente, result from dislocations appears to be excluded by the evenness of the littoral platform on either side of the chasm, but the actual origin of the valleys can hardly be found until they are studied in connection with the structure, form and drainage of the neighboring and still visible land. It is well to guard against the implication that submerged valleys result from 'continental' movements, by remembering that the earth's crust may bend beneath the sea as well as upon the land and that the down-bending and consequent submergence of a coastal belt gives no more warrant of a truly 'continental' movement than does the occurrence of a local inland anticline.

WATER RESOURCES OF INDIANA AND OHIO.

UNDER the above title, F. Leverett, for a number of years engaged on the study of drift deposits in the Ohio Valley, contributes an account of local water supplies, with particular reference to the occurrence of ground water in drift and rock (18th Ann. Rep., U. S. G. S., Pt. IV., 421–559). The essay includes much that is pertinent to these notes, and particular reference should be made to three maps that give sketch contours, rock geology and glacial features of the two States concerned. The last of the three is the best presentation yet published of the marvellously complex drift deposits formed by the great ice lobe from the Erie trough. Nothing could more forcibly illustrate the importance of including some explanatory account of geographical features in the ordinary teaching of geography than the contrasts here brought forward between different areas, according as they have been glaciated or not, or as they are sheeted with the older loess-covered till, the more recent moraine-belted till, or the still younger lake silts. The control of preglacial topography by rock structure and the effect of this topography on the advance of the ice sheets are well exposed; the Bellefonte Devonian outlier, and the Scioto and Miami groups of lobate moraines on either side of it, being manifest illustrations. The hilly uplands or 'knobs' of southern Indiana, determined by outcrops of the lower Carboniferous series, seem to have exerted a similar control over the extent of the earlier ice advance; but

here the confirmatory evidence of moraines is wanting. Remembering that the 'absence of moraines' was one of the arguments against the glacial theory but a few decades ago, this map is very edifying.

THE URAL MOUNTAINS.

ONE of the first contributions to our scientific literature resulting from the International Geological Congress in Russia last summer is by Dr. Persifor Frazer on a 'Geological Section from Moscow to Siberia and Return' (Proc. Acad. Nat. Sci., Phila., 1897, 405–457), in which some interesting geographical features of the Ural mountains are set forth. Approaching this range from the west, there is nowhere presented a bold rugged landscape like that of the Alps or the Caucasus; a gradual ascent leads across the disturbed ancient rocks, generally striking north and south, to the divide; then a moderate descent leads to a lower and open plain, although the disturbance of the rocks continues in full force. Karpinsky is quoted as writing of this plain that, "although its geological structure corresponds with a very complex mountain region, the greater part of it presents an area so flat that the relief is less accidented than that of most of the plains of European Russia;" and the removal of the former mountains is ascribed by the Russian geologist to abrasion by a Tertiary sea, whose sediments stretch into Siberia. From the divide one may look westward and see the ridges separated by longitudinal strike valleys, whose outlet is through transverse gorges to the Russian plains; to the east, one looks across the old mountain plain toward the boundless, lake-dotted steppes of Siberia. Deep lakes, with ragged shores and many islands, as well as numerous swamps, abound on the old mountain plain; their drainage is eastward by streams that have cut gorges in their middle course and opened broad-floored valleys farther forward. In the absence of all evidence of glacial action, several hypotheses are offered to account for the lakes.

W. M. DAVIS.

NOTES ON INORGANIC CHEMISTRY.

IN the *Proceedings* of the Chemical Society (London) T. C. Porter has a note on the volatility of sulfur. When heated to 100° in a vacuum tube sulfur sublimes with some degree of rapidity, the sublimate consisting of very pale yellow drops, which remain unchanged for several days; at ordinary temperatures even in a good vacuum there is no perceptible sublimate, even in the course of a year. In commenting on the paper Professor Dewar said that if the vacua are cooled with liquid air or oxygen a visible distillation of sulfur takes place even at ordinary temperatures.

AT the meeting recorded in the above *Proceedings* Professor Bohnslav Brauner, of Prague, was present for the purpose of reading four papers on the chemistry of the rare earths. The first two papers were on thorium, describing his method of purification as ammonium thoroxalate, and atomic weight determinations leading to the figure 232.42; agreeing with the work of Krüss and Nilson (232.45), but lower than that of Cleve (234.5). The third paper was on the compound nature of cerium, in which the author holds that some unknown element, of lower atomic weight (perhaps about 110) and with no characteristic spark spectrum, is present in the cerium from cerite. The last paper on praseodymium and neodymium is chiefly a study of the compounds of praseodymium. From experiments to determine whether the higher oxid PrO_2 belongs to the type of PbO_2 or BaO_2 the author concludes that it is "an oxid of a new kind, belonging simultaneously to the ozonic oxids of the water type, and to the antozonic oxids of the hydrogen peroxid type; it is, in fact, the