Colleges incorporated in a teaching university have this opportunity. Originality of thought has fuller encouragement, and new educational methods have freer play than can possibly be the case in a college of which the students have no other avenue to a university degree than examination by a wholly external examining body like the University of London, however excellent be the conduct of its examinations. An atmosphere of intellectual independence is of the essence of true academic life. The true scholar must breathe it as his native air. And this is not the language of mere theory. It has its immediate practical application on the scientific side. The trained student of science, for instance, entering on manufacturing pursuits should do so with free inquiring eye, ready to believe that it may have been reserved for him to make a discovery of immense value to the industry to which he is devoting himself. I believe that this freedom of spirit is far more likely to be developed and fostered in a teaching university than in a college bound to teach on certain rigid lines laid down by an authority in which it has no part." The first object of the founders of the University of Wales is to ensure that all students of the University shall receive good teaching and thorough training before proceeding to graduation. By this means the University will be made a real force for the advancement of learning in the Principality.

SCIENTIFIC SERIALS.

Bulletin of the American Mathematical Society, vol. ii. No. 8, May 1896.—"The Arithmetising of Mathematics" is an excellent translation, by Miss Maddison, of Bryn Mawr College, of an address delivered by Prof. Felix Klein, before the public meeting of the Royal Academy of Sciences of Göttingen, on November 2 of last year. In it Prof. Klein explains his position in regard to an important mathematical tendency which he remarks has for its chief exponent Weierstrass, whose eightieth birthday has been lately celebrated. This tendency he calls the *arithmetising* of mathematics. Like all the author's addresses, this one, now rendered easily accessible to English mathematicians, will repay study.—Next follow three carefully drawn-up reviews, viz. by R. A. Roberts, on a second edition of Darboux's classic treatise, "Sur une classe remarquable de Courbes et de surfaces Algébriques et sur la théorie des Imaginaires." It is matter of regret, Mr. Roberts says, that the author has not devoted some more time to a subject which offered him once such a fruitful field for original investigation.—Then Prof. Bôcher examines in detail the "Treatise on Bessel Functions, and their Applications to Physics," by Messrs. Gray and Mathews. He well shows that the writers have by their work filled a real gap in mathematical literature.—In his notice of Miss Scott's "Introductory Account of certain Modern Ideas and Methods in Plane Analytical Geometry," Prof. F. N. Cole states it to be a minor excellence of the book that it is written in the English of English speaking and writing people, *i.e.* there are no abbreviations, and such like, which necessitate constant reference to a "list of signs," &c. He looks upon Miss Scott's performance as a compact, scholarly work on the more accessible principles and methods of modern analytical geometry. "It exhibits to a marked degree that genial breadth of treatment and conciseness which are associated only with mature scholarship and extensive and accurate information." His summing-up of warm approval is that he knows of no introductory work which is better adapted, in the particulars he indicates, for the use of those who desire not merely to learn, but also to master geometry.—Prof. H. B. Newson, in a note on "A Remarkable Covariant of a System of Quantics," calls attention to a covariant of a system of n quantics in n homogeneous variables. He states two important geometric properties of this covariant which, *pro tem.*, he calls the Cremonian. (1) The Cremonian of U, V, and W is the locus of the point (x', y', z') whose first polars with respect to U, V, and W have a common point; the locus of these common points is, of course, the Jacobian. (2) The Cremonian of U, V, and W is also the locus of (x, y, z) the point of intersection of the polar lines of (x', y', z'), with respect to U, V, and W, *i.e.* it is the locus of the point of intersection of the polar lines of the points on the Jacobian. The author gives other results of interest, and hints at an extension of the conception of the Cremonian to spaces of higher dimensions.—Much interesting matter is given in the Notes, and a list of recent publications fills up a big number of 44 pages, in place of the usual 32 pages.

Symons's Monthly Meteorological Magazine, June.—The worst gale of the nineteenth century in the English Midlands (continued). A map is given showing the path of the storm from South Wales to Lincolnshire between 11 a.m. and 4 p.m. on Sunday, March 24, 1895. The average velocity of translation was about sixty miles an hour, and the disturbance appears to have been caused by a subsidiary depression formed over the south of Ireland, during a well-marked cyclone which lay over the northern parts of our islands on the same day. Great disaster was caused along its track, and fourteen deaths were reported. There were also more than a dozen cases of windows and gables being blown *out*, owing to the expansion of air inside the buildings during the passage of diminished atmospheric pressure.—Fog, mist and haze, by a Fellow of the Royal Meteorological Society. This is a continuation of the discussion raised in the preceding number of the *Magazine* (NATURE, June 4, p. 118). The writer agrees generally with the definitions proposed, as a practical scheme, based on a correct view of the phenomena, but he thinks that the difference between fog and mist should not rest upon what can be seen with the naked eye—a test in which two persons would be very apt to disagree.

THE enlarged issue of the *Journal of Botany* still continues to be occupied almost entirely with papers on descriptive botany, and chiefly relating to the flora of the British Isles. In the numbers for May and June, Prof. R. Chodat describes some new species of *Polygala* from South Africa; and Mr. W. H Pearson a new liverwort, *Plagiochila Stableri*, from Rydal.

THE papers in the *Nuovo Giornale Botanico Italiano* for April, and in the *Bulletino della Società Botanica Italiana*, Nos. 2-4, relate almost entirely to the flora of Italy. In the former, Signor S. Sommier describes and figures an interesting hybrid between *Ophrys bombyliflora* and *O. tenthredinifolia*. In the latter is an abstract of an article by Signor B. Longo, on the mucilage of the Cactaceæ.

Bulletin de la Société des Naturalistes de Moscou, 1895, No. 3.—On considerable perturbations of atmospheric pressure in the year 1887, by B. Sresnewskij. A research into the relations between the said perturbations, the movements of cyclones, and the local weather predictions based on the study of the same; as also their relations, both to the groups of areas of minimal pressure and to the distribution of temperature (in German).—Materials for the Amphibia and Reptile fauna of the Orenburg region, by N. Zarudnyi. List of eleven species of the former, and fifteen species of the latter (Russian).—*Aquila Glitchii*, Severtsoff, a biological sketch, by P. Suschkin, in German, with two plates.—Note on *Posidonomya buchi* of the Balaclava schists in Crimea, by M. D. Stremoouchow, with a plate.—On Russian Zoocecidiæ and their makers, by. Ew. H. Rübsaamen, based on a collection made by Madame Olga Fedchenko and her son Boris Fedchenko. No less than 120 galls and their occupants from various parts of Russia and Caucasia are described.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, June 11.—"On the Relations between the Viscosity (Internal Friction) of Liquids and their Chemical Nature. Part II." By Dr. T. E. Thorpe, F.R.S., and J. W. Rodger.

In the Bakerian Lecture for 1894 the authors gave an account of their work on the viscosity of some seventy liquids, and they discussed the interdependence of viscosity and chemical composition. In order to render their investigation more complete, they have now made measurements of the viscosity of (1) a number of esters or ethereal salts, and (2) of ethers, simple and compound—groups of liquids, which with the exception of a single member, ethyl ether, have not hitherto been studied by them. The physicochemical relationships previously established made such determinations of special interest, for it was shown that one of the most striking of the various connections traced between chemical constitution and viscosity was the influence exerted by oxygen according to the different modes in which it was assumed to be associated with other atoms in the molecule. The influence which could be ascribed to hydroxyl-oxygen differs to a most marked extent from that of carbonyl-oxygen, and it appeared that ether-oxygen, or oxygen linked to two carbon atoms, had also a value which differed considerably from oxygen in other conditions.