

appointed Professor of Mineralogy), Messrs. W. Garnett, F. M. Balfour, and S. H. Vines.

The Rev. W. Cunningham, M.A., of Trinity College, has been appointed Deputy for the Knightbridge Professor, Prof. Birks, and has resigned the Assistant-Secretaryship of the Local Examinations and Lectures Syndicate.

Mr. W. Hillhouse, B.A., of Trinity College, Assistant-Curator of the Botanical Museum, has been approved as a teacher of botany, and Mr. J. J. Lister, B.A., of St. John's College, Demonstrator of Comparative Anatomy, as a teacher of that subject for the purposes of medical certificates.

It was resolved last Thursday to admit women students at Cambridge to the Previous Examination and to the various Tripos Examinations, to publish separate class-lists for women, and in cases where order of merit is indicated in the men's class-lists, to indicate the position which any female student would have taken in the corresponding list of men. The examiners may also state that any candidate who does not attain an honour standard is adjudged to have deserved an ordinary degree. It will be necessary to present a further report on minor details of fees and regulations, but it can hardly be doubted that students duly qualified may be admitted formally to the examinations coming on in June next.

The University accounts just published show that examiners cost the University last year 2200*l.*, professors, demonstrators, lecturers, &c., 8400*l.*, in addition to those specially endowed. The ordinary expenses of the museums and lecture-rooms have been 2500*l.*, while the grant from the University is 2000*l.* The botanic garden has cost nearly 1000*l.*, and 660*l.* has been so far spent on a curator's house. The Local Examinations and Lectures Board have received 8400*l.*, and have invested a further sum of 500*l.*, which at a future time may help to provide a building for this extensive work. The University Library has overdrawn its balance nearly 900*l.*, and the Museums and Lecture Rooms Building Fund is in debt 2725*l.* On the whole it appears that the University has been very careful not to sanction new expenditure in this time of transition, and has succeeded in laying by 3000*l.*, now possessing a capital of 27,000*l.* in stocks. 3000*l.* was the University's income last year from common rents and dividends, while 27,000*l.* was paid by members of the University in fees for examinations, degrees, &c.

In the Special Examinations for the ordinary B.A. degree last year thirty-six candidates entered in Chemistry, nine of whom failed; two in Geology, nine in Botany; only one failed, viz. in Botany. The examiners report that in Chemistry the requirement of practical work has exerted a useful influence. This requirement however entails much additional work on the examiners in Natural Science, and the appointment of a third examiner is recommended.

Next Monday at three o'clock, Dr. W. H. Gaskell will make a communication to the Philosophical Society on the action of the vagus nerve upon the frog's heart; and Mr. F. M. Balfour will discuss the ancestral form of the chordata.

THE Calendar of St. David's College, Lampeter, for 1881, is of interest in connection with the forthcoming report of the Commission on Higher Education in Wales. It contains a full account of the foundation and history of the University, the means at its disposal, and the nature of the education it offers to students. The examination for the B.A. degree of this college includes either physics or chemistry.

### SCIENTIFIC SERIALS

*Archives des Sciences Physiques et Naturelles*, No. 1, January 15.—Contributions to knowledge of the family of the Pintinnodea, by H. Fol.—On the use of the microphone in the service of the astronomical hour, by M. W. Meyer.—Exercises of analytical geometry, by L. de la Rive.—On the use of some azoic colours in physiological chemistry, by A. Danilewsky.—*Comptes rendus* of the Geneva Chemical Society, by S. Walter.—On the botanical geography of Southern Tessin, by S. Calloni.—Annals of Berne Observatory, by A. Forster.

*Rivista Scientifico Industriale*, No. 24, December 31, 1880.—Description of three new species of the aphides of Sardinia, by L. Marchiati.

*Reale Istituto Lombardo di Scienze e Lettere. Rendiconti*, vol. xiii, fasc. xx.—On the rotatory movement of the heart, by E. Oehl.—On a new nuclearia; description and considerations as to its position in the geological system and its importance in

animal ontogeny, by L. Maggi.—Registering instruments in meteorology, by C. Chistoni.—Synthesis of two new acids isomeric with vanillic acid, by G. Körner and G. Bertoni.

### SOCIETIES AND ACADEMIES

#### LONDON

Royal Society, January 27.—“On the Iron Lines widened in Solar Spots.” By J. Norman Lockyer, F.R.S.

The observations put forward with reserve in my last communication to the Society have now been confirmed.

In the fine spots visible on December 24, January 1 and 6, many lines in the spectrum of iron were seen contorted, while others were steady.

The facts are given in the following table:—

	The iron lines indicating motion.	Iron lines, visible in the same field of view, steady.
Dec. 24, 1880	... 5403.2	
	5404.8 ... ..	5410.0
	5409.0 ... ..	5414.5
	5408.8	
	5396.0	
	5370.5	
	5369.0 ... ..	5366.5
	4919.8	
	4918.0 ... ..	4923.0
	5142.2 ... ..	5269.8
	5138.5 ... ..	5268.5

In another part of the same spot—

	5269.8 ... ..	5323.5
	5268.5 ... ..	5327.0 (double).
Jan. 1, 1881	... 5323.5 ... ..	5269.8
	5327.0 (double) ... ..	5268.5
Jan. 6, 1881	... 4919.8	
	4918.0 ... ..	4923.5
	All lines between $\lambda$ 5323.5 and 5410.0 except ...	5382.1

It is to be noted that these observations furnish us with an instance of inversion similar to those frequently obtained in our observations of the most widened lines in spots.

The inferences to be drawn from these observations, and those on which we are now continuously engaged, must be matter for future communication. But I cannot resist calling attention to the crucial nature of the evidence, at least as regards iron, in favour of the view first put forward by Sir B. Brodie, whom we have so recently lost, that the constituents of our terrestrial elements exist in independent forms in the sun.<sup>2</sup>

I have thought it right to send in a record of this work at once, with a view to induce other observers to follow the continually varying phases of the spots during the approaching maximum.

The observations have been made by Mr. H. A. Lawrance, and confirmed by myself in the majority of cases.

Chemical Society, February 17.—Prof. Roscoe, president, in the chair.—The following papers were read:—On the estimation of organic carbon and nitrogen in water analysis simultaneously with the estimation of nitric acid, by M. W. Williams. The author has modified the well-known process of Frankland and Armstrong. Instead of reducing the nitrates with sulphurous acid, he uses the copper-zinc couple of Gladstone and Tribe, which converts nitrates into ammonia. The ammonia produced is distilled off and the distillate nesslerised; the water left in the retort, after distilling off the ammonia, is evaporated to dryness and the residue burnt in the ordinary way. The errors which accompany the use of sulphurous acid are thus avoided, and the time required for the analysis is much shortened.—Capt. Abney and Col. Festing then gave an account of their recent researches on the influence of the molecular grouping in organic bodies on their absorption in the ultra-red region of the spectrum. The authors have photographed the absorption spectra of numerous inorganic and organic liquids in the region beyond the red. In many cases the presence of an organic radical seems to

<sup>2</sup> In this spot the D lines indicated motion, and did not retain their parallelism.

<sup>2</sup> Lecture delivered before the Chemical Society, June 6, 1867.