

of the world if up to seventeen he received a liberal education rather than one directed to any special object. Most educationists would agree with Lord Alverstone in his objection to specialisation at school; but in connection with this subject it is pertinent to ask whether the study of Greek is not specialisation to a boy who is taught English and Latin properly.

At the annual speech day of Scarborough Municipal School on Tuesday, the Right Hon. A. H. Dyke Acland, chairman of the governing body of the school, remarked that if he were asked what the secondary schools of the country needed most he would say more money, fewer examinations, and a more effective instruction in English language and literature. They wanted the means which would enable them to try to follow the example of other countries in the matter of secondary education. The culprit in this case was not the Board of Education but the Treasury. If it had to put down ten millions for elementary education it tried to take it out of secondary education, and at this present moment of our country's history there was nothing which needed more assistance than secondary education. With regard to examinations, Mr. Acland strongly contended that the old system of paper examinations was not a true test of the efficiency of a school, and was often altogether deceptive. The true test was when half a dozen inspectors spent four days and watched the work of the pupils, as was done at Scarborough. In America there were almost no examinations, and in Germany the ordinary paper examination of which we thought so much was unknown.

### SOCIETIES AND ACADEMIES.

#### LONDON.

**Royal Society, October 27.**—"Some Physical Characters of the Sodium Borates, with a New and Rapid Method for the Determination of Melting Points." By C. H. Burgess and A. Holt, jun.

The glasses obtained by fusing sodium carbonate with boric anhydride can be transformed either wholly or in part on prolonged heating into stable, crystalline varieties, which invariably melt at higher temperatures than the glasses from which they were derived.

A study of the melting points of the crystalline and vitreous forms of mixtures of different compositions leads to the conclusion that only two sodium borates can be obtained by fusion— $\text{Na}_2\text{O} \cdot 4\text{B}_2\text{O}_3$  and  $\text{Na}_2\text{O} \cdot \text{B}_2\text{O}_3$ .

The addition of  $\text{Na}_2\text{O}$  to boric anhydride produces in the first place a solution of the borate  $\text{Na}_2\text{O} \cdot 4\text{B}_2\text{O}_3$  in boric anhydride. This then becomes supersaturated, and the borate in excess separates on heating for some time. The amount which separates continues to increase until the mixture has the composition of nearly pure  $\text{Na}_2\text{O} \cdot 4\text{B}_2\text{O}_3$ , when complete crystallisation occurs. Between this point and the compound  $\text{Na}_2\text{O} \cdot \text{B}_2\text{O}_3$ , the crystalline forms appear to be solid solutions of the two above mentioned borates, anhydrous borax itself being almost the eutectic point. In mixtures containing more sodium than  $\text{Na}_2\text{O} \cdot \text{B}_2\text{O}_3$ , the crystals seem to be solid solutions of this compound with sodium carbonate. The glasses appear to be the superfused and metastable forms of the crystals.

Analyses of glasses and crystals of various composition confirm the observations derived from the melting points. The melting point method employed consisted essentially of a platinum wire which was heated electrically, to which a small bead of the substance under investigation was hung. A light weight was attached to the bead. When the wire was heated to the melting point of the substance the bead and weight fell off. The resistance of the wire was determined at this moment, and thence the temperature. The method proved good for substances like glass, which have hitherto not been supposed to melt at any definite temperature.

November 17.—"On the Group IV. Lines of Silicium." By Sir Norman Lockyer, K.C.B., LL.D., Sc.D., F.R.S., and F. E. Baxandall, A.R.C.Sc.

In previous communications to the Royal Society an account has been given of the behaviour of the lines of

silicium under varying experimental conditions, and as a result of the inquiry the lines were divided into four distinctive groups. The genuineness of the lines of group iv., as silicium lines, has recently been questioned by M. de Gramont, of Paris. He concludes that, as the lines of group iv. always disappear from his spectra with the air lines, they are really due to oxygen or nitrogen. This is so much at variance with the Kensington conclusions that it has been considered necessary to give, in the present paper, the photographic evidence on which those conclusions were based. Reproductions of photographs of silicium spectra under various electrical conditions are given, and from the behaviour of the Si iv. lines in the different photographs it is claimed that they cannot be due to anything other than silicium.

In the vacuum-tube spectrum of  $\text{SiF}_4$  the Si iv. lines are seen to be stronger than even the strongest of Neovius's air lines, which appear in the same spectrum.

In one of the reproductions, the spark spectrum of sodium-silico-fluoride, volatilised between platinum poles, is compared with the spark spectrum of air, also made incandescent between platinum poles. In each spectrum the ordinary lines of nitrogen and oxygen are well seen. The silicium lines in question are shown in the former spectrum, but have no corresponding lines in the air spectrum. It is also mentioned that these lines do not occur in the Kensington spark spectrum of any element other than silicium.

There are, according to Neovius, very weak lines of oxygen or nitrogen near the positions of the silicium lines (4089.1 and 4116.4). These faint air lines are possibly the lines which Gramont gets in his spectra, but from the evidence adduced in the present paper they are not the lines which appear so strongly in the Kensington silicium spectra.

In another reproduction the  $\text{SiF}_4$  spectrum is given alongside that of  $\epsilon$  Orionis, and the identity of position of the Si iv. lines and strong lines in the stellar spectrum is shown.

**Linnean Society, December 1.**—Prof. W. A. Herdman, F.R.S., president, in the chair.—Proteid digestion in animals and plants: Prof. S. H. Vines, F.R.S. In this discourse Prof. Vines first remarked that the foundation of our knowledge of gastric digestion in animals was laid by van Helmont so long ago as early in the seventeenth century ("Ortus Medicinæ," 1648), who held that it was effected by an "acid ferment." But in spite of continued research by Réaumur, Stevens, Spallanzani and others, it was not until two hundred years later that the ferment was actually detected. This important discovery was made in 1836 by the celebrated Schwann, who gave to the ferment the name "pepsin." In the course of subsequent investigation, it came to be recognised that the digestion of the food is not by any means completed in the stomach, but that the greater part of the digestive process is carried on in the small intestine (duodenum) by the pancreatic secretion. Claude Bernard ascertained in 1856 that the pancreatic juice contains a ferment that digests proteids; to this ferment the name "trypsin" was given by Kühne in 1876. These two were the only proteases known until quite recently (1901) a new protease, termed "erepsin" by Cohnheim, its discoverer, was added to the list. Like trypsin, this protease peptonises peptones, and is active in alkaline liquids; but its peptonising power is much less marked, as it is without action on albumin and fibrin, though it can peptonise casein. The discovery of erepsin suggested the possibility that trypsin might be, not a single enzyme, as had hitherto been thought, but a mixture of enzymes, possibly of peptonising with peptolysing enzymes. Research in this direction has, in the hands of Dr. Vernon, already (1903) shown that what is generally known as trypsin is a mixture of erepsin (pancreato-erepsin) with what may be termed trypsin proper. It is not inconceivable that analysis may be carried still further, and that trypsin proper may itself be found to be a mixture of a peptonising with a peptolysing enzyme. Prof. Vines next turned to proteid-digestion in plants. His own contribution, made within the last three years, consists of a number of observations on many different plants or parts of plants, showing that a protease of some kind is probably to be found in all parts of all plants at one stage or other of their development. It appears that whilst all plants that have been investigated can effect peptolysis,

only a limited number have been found capable of digesting fibrin. Prof. Vines has ascertained that in certain cases (yeast, mushroom) the tissues contain a mixture of erepsin with a fibrin-digesting enzyme, a result which finds its analogue in Vernon's researches on pancreatic trypsin.

**Entomological Society**, December 7.—Prof. E. B. Poulton, F.R.S., president, in the chair.—Mr. H. St. J. **Donisthorpe** exhibited *Quedius nigrocoeruleus*, taken by Mr. H. C. Dollman in a rabbit-hole at Ditchling, Sussex, this being the fourth recorded British specimen.—Prof. T. Hudson **Beare** exhibited a specimen of the rare Longicorn *Tetropium castaneum*, taken about two years ago in the vicinity of the quays at Hartlepool, and probably introduced from abroad.—Mr. G. J. **Arrow** exhibited a series of the Lamellicorn beetles from the Burchell collection, and remarked that Burchell had at the time of their capture, some seventy years ago, already noted their powers of producing musical sound.—Mr. C. O. **Waterhouse** exhibited drawings illustrating the development of the front wing in the pupa of the Tusser silk moth, showing the relation of the tracheæ to the veins, prepared for exhibition in the Natural History Museum. He also exhibited some coffee berries from Uganda injured by a small beetle belonging to the Scolytidae, and two coleopterous larvæ from the Burchell collection from Brazil, submitted to him for determination by Prof. Poulton. One was a heteronomous larva two inches long, much resembling the larva of *Helops*. The more interesting one was noted by Burchell to be luminous, and appeared to be the larva of an Elaterid.—Mr. J. J. **Walker** exhibited the type-specimen of *Haplothorax burchelli*, G. R. Waterhouse, from the Hope collection, a remarkable Carabid discovered by Burchell in St. Helena. It is now exceedingly rare, if not entirely extinct, in its sole locality, the late Mr. Wollaston, during his visit to the island in 1875-6, having entirely failed to find the beetle alive, though its dead and mutilated remains were often met with.—The **President** exhibited cases showing the results of breeding experiments upon *Papilio cenea* conducted by Mr. G. F. Leigh, who had for the first time bred the *trophonius* form from *trophonius* itself. He also exhibited a photograph, taken by Mr. Alfred Robinson, of the Oxford University Museum, showing the Xylocopid model and its Asilid mimic, exhibited by Mr. E. E. Green at a recent meeting. The example was particularly interesting, inasmuch as Mr. Green's record of the mimic circling round its model tended to support the view that the bee is the prey of the fly.—*Erebia palarica*, n.sp., and *Erebia stygne*, chiefly in regard to its association with *E. evias*, in Spain: Dr. T. A. **Chapman**. The author described *Erebia palarica*, a new species from the Cantabrian range; he said it was phylogenetically a recent offshoot of *E. stygne*, and the largest and most brilliant in colouring of all the known members of the family.—Entomological experiences during a tour through India and Ceylon, October 10, 1903, to March 26, 1904: Dr. G. B. **Longstaff**.

**Geological Society**, December 7.—Dr. J. E. Marr, F.R.S., president, in the chair.—The chemical and mineralogical evidence as to the origin of the dolomites of southern Tyrol: Prof. E. W. **Skeats**. Recent work on modern coral-reefs has shown that these limestones contain very little, if any, insoluble residue. The study of the relative proportions of the organisms composing these reefs, and the alterations that they undergo, has further shown that corals play a subordinate part in them, and that calcareous algæ, foraminifera, and other organisms form the bulk of the rocks of the reefs. The author has applied this information in the examination of collections from the much debated area of the dolomites of southern Tyrol. The chemical examination of numerous specimens from the Schlern dolomites of the Schlern, the Langkofl, the Marmolata, the Sella, the St. Cassian district, the Richthofen Reef, and numerous other localities is described, so far as relates to the proportions of lime and magnesia and of insoluble residue. These results are compared with similar analyses of limestones from lower and higher horizons.

**Physical Society**, December 8.—Dr. R. T. Glazebrook, F.R.S., president, in the chair.—On a rapid method of approximate harmonic analysis: Prof. S. P. **Thompson**. For the study of alternating electric currents and for several

other applications, harmonic analysis is simplified by the consideration that all the even terms in the Fourier expansion are absent. In this case the second half-period is similar to the first half-period, but with the ordinates of the corresponding angles reversed in sign. Given a complicated harmonic curve containing constituents of the odd orders only, the zero-line can always be drawn so that the constant term vanishes from the Fourier series, the mean ordinate being zero; and it is then always possible to choose as origin a point for which the ordinates at  $0^\circ$  and  $180^\circ$  are zero. The paper gives a *résumé* of the various methods which have been employed for harmonic analysis by reduction from simultaneous equations, graphical means, and by harmonic analysers. The method adopted by the author is a simplification of a general method of analysis published by Prof. Runge.—A high frequency alternator: W. **Duddell**. The author described and showed in action a high-frequency alternator which he had constructed in 1900 for some experiments on the resistance of the electric arc, and with which frequencies up to 120,000 ~ per second had been obtained. An illustration will perhaps convey some idea of how high a frequency of 120,000 ~ per second really is. In plotting curves for ordinary frequencies of 50 to 100 ~ per second, a scale often adopted is 10 inches for 100 ~. If it were attempted to plot a curve up to 120,000 ~ per second to this scale, the curve paper would require to be 12,000 inches, or nearly *one-fifth of a mile long*.—Exhibition of experiments to show the retardation of the signalling current on 3500 miles of the Pacific cable between Vancouver and Fanning Island: Prof. W. E. **Ayrton**. The experiments were performed upon a cable electrically equivalent to the portion of the Pacific cable between Vancouver and Fanning Island, the product of the capacity (in mfd.) and the resistance (in ohms) being nine millions. Three dead-beat galvanometers were employed to indicate the current at the beginning, in the middle, and at the end of the cable. It was shown that upon applying an E.M.F. at one end of the cable the current at that end was enormously greater than its steady value, and that one-fifth of a second elapsed before any indications of current were shown at the far end of the cable. By that time the current at the sending end was 3.7 times its steady value, and after two-fifths of a second it had fallen to 2.3 times its steady value. In about five seconds the current became steady.

**Royal Astronomical Society**, December 9.—Prof. H. H. Turner in the chair.—On a very sensitive method of determining the irregularities of a pivot, and on the influence of the pivot errors of the Radcliffe transit circle upon the right ascensions of the Radcliffe catalogue: Dr. **Rambaut**. The method is a modification of that of M. Hamy, a small steel pin being inserted in each pivot; by means of a lever arrangement horizontal as well as vertical displacements, due to pivot irregularities, can be observed. The apparatus, which had been found entirely satisfactory, was fully described and illustrated.—On the validity of meteor radiants as determined from three observed tracks: Mr. **Chapman**.—A note accompanying a photograph of the detached nebula in Cygnus: W. S. **Franks**. The nebula was the one recently photographed by Dr. Max Wolf; the present plate, taken with the late Dr. Isaac Roberts's 20-inch reflector, showed the details of the nebula on a larger scale. A second note by Mr. Franks upon dark nebulosities was also read; it was illustrated by four photographs of long lenticular nebulæ, each of which was sharply divided longitudinally throughout its entire length by a dark line. The author suggested that these nebulæ, probably spirals seen edgewise, were cooler at their extreme edges, and that this band of cooler matter absorbed their light and caused the appearance of the dark bands seen in the photographs.—Two papers on the lunar theory, one being a note on the completion of the solution of the main problem: Prof. Ernest W. **Brown**.—An analysis of 145 terms in the moon's longitude: P. H. **Cowell**.—On the decline in the magnitude of the variable 159, 1904 Pegasi: Mr. **Wickham**.

**Zoological Society**, December 13.—Mr. Herbert Druce, vice-president, in the chair.—Some specimens of a gazelle from Palestine a new species: Oldfield **Thomas**, F.R.S.—The anthropoid apes, illustrated by a large collection of mounted skins, skeletons, and skulls: the Hon. Walter

**Rothschild.** The gorilla from South Cameroon and the white-faced chimpanzee of the Gaboon were characterised as new.—The cranial osteology of the clupeoid fishes: Dr. W. G. **Ridewood.**—Characters and synonymy of the British species of sponges of the genus *Leucosolenia*: Prof. E. A. **Minchin.**—Descriptions of eighteen species of land-shells belonging to the genus *Macrochlamys* and its allies: Dr. W. T. **Bianford**, F.R.S.—Descriptions of a new genus and thirty-two new species of phytophagous Coleoptera of the family Halticidae from South and Central America: M. **Jacoby.**

## CAMBRIDGE

**Philosophical Society, November 28.**—Prof. Marshall Ward, president, in the chair.—Remarks on Piroplasmiasis with exhibition of specimens: G. H. F. **Nuttall.**—Note on some peculiar features in seedlings of *Peperomia*: A. W. **Hill.** The seedlings of *Peperomia umbilicata* were found in the Andes of Bolivia at about 13,500 feet above sea-level. The species is a geophilous one with small bulbs and petlate leaves. The peculiarity of the seedlings lies in the fact that, though they are dicotyledonous in structure, only one of the two cotyledons leaves the seed to function as an assimilating organ; the other remains permanently in the seed as an absorbent organ. The other bulbous species from the Andes apparently show the same features of germination, and several other species from Central America, preserved in the herbaria of Kew and South Kensington, whilst differing in their vegetative habits, show a similar type of germination.—Exhibition of new and rare Arachnids taken near Cambridge: C. **Warburton** and N. D. F. **Pearce.**—The inheritance of tortoiseshell and related colours in cats: L. **Doncaster.** Tortoiseshell cats are heterozygotes, containing the two colours black and orange. They can be produced by mating orange with black, but a tortoiseshell paired with either orange or black may throw all three colours. Male tortoiseshells are exceedingly rare, and the normal colour of the black-orange heterozygote in the male is orange, the black in this case being completely recessive. When a male tortoiseshell is paired with a female, all three colours may be produced in the kittens. Cream and blue are dilute forms of orange and black, and behave similarly when crossed, the females being "blue tortoiseshells," the males creams. Creams may be obtained by pairing blue with orange, the dilution being transferred from one colour to the other. Blue is recessive to black, and so probably is cream to orange; it appears also that blue may be completely recessive to orange in the female, although black by orange in the female gives tortoiseshell.

## MANCHESTER.

**Literary and Philosophical Society, November 29.**—Prof. W. Boyd Dawkins, F.R.S., president, in the chair.—Determination of wave-lengths in the extreme ultra-violet part of the spectrum: H. **Morris-Airey.** After a brief historical sketch of the work of earlier investigators, the classical experiments of Schumann were described. Schumann was not able to measure the wave-lengths of the new lines beyond  $185\mu\mu$ , which he photographed, on account of our defective knowledge of the dispersion of the material of which his prism was constructed. The author attempted to do this by producing the spectra by means of a concave grating *in vacuo*, but without success. However, using a plane transmission grating ruled on a plate of white fluor-spar, to resolve the light from a powerful induction coil discharge between aluminium electrodes four new standard wave-lengths were measured extending to the wave-length  $169\mu\mu$ . The experiments were carried out, after Schumann, *in vacuo*, and the spectra recorded on photographic plates specially designed for the work.

## PARIS.

**Academy of Sciences, December 12.**—M. Mascart in the chair.—Remarks on some thermochemical rules relating to the possibility and the prediction of chemical reactions: M. **Berthelot.** The author discusses the statement that a chemical reaction must always be accompanied with an evolution of heat, and refers to his earlier works to show the exact meaning to be attributed to the words chemical

reaction.—The determination of the difference in longitude between Greenwich and Paris made in 1902: M. **Loewy.** A detailed account is given of the precautions necessary for the accurate determination of this constant. Particular care was given to the study of the personal equation of each observer, and to reduce still further the errors due to this source, the English and French observers changed stations. The mean result obtained by the latter for the difference of longitude between Paris and Greenwich was  $9m. 20.974s.$ —On the element  $Z_8$ : Lecoq **de Boisbaudran.** In discussing the presence of a band  $\lambda=488$ , M. Urbain regards the existence of a new element corresponding to this band as hypothetical. The author gives reasons for his statement that this band is really due to a new element, and maintains the accuracy of his work published in 1895.—Observations of the sun made at the Observatory of Lyons with the 16 cm. Brunner equatorial during the third quarter of 1904: L. **Guillaume.** The results are summarised in three tables giving the numbers of spots, their distribution in latitude, and the distribution of the faculae in latitude.—On the approximation of incommensurables and of trigonometric series: M. **Fatou.**—On continuous space groups, finite and infinite: M. **Le Vavasseur.**—Remarks on a method for the study of the convergence of certain continuous fractions: H. **Padé.**—The detonation of explosive substances under water: M. **Jacob.**—An electrically driven nickel-steel pendulum: Jean **Mascart.** A preliminary account of the results obtained with a pendulum of invar, driven by the electrical arrangement devised by M. Lippmann. Its rate was about two seconds per day. The author regards it as preferable to use several pendulums of this kind, which can be set up with ease, to attempt an absolute compensation.—On the registration of the  $n$ -rays by photography: G. **Weiss** and L. **Bull.** A description of the arrangement adopted is given in detail, the object being to produce three squares in contact with each other, the centre one corresponding to the effect produced by the phosphorescent surface when not exposed to the rays. The two outer squares should have been darker if an increase of the light intensity had been produced under the action of the rays. The experiment was repeated a great number of times, varying the nature of the plates, the time of exposure, and the intensity of lighting. The shortest exposure was twenty seconds, and the longest five minutes. In no case was a positive result obtained, there being no difference between the intensity of the squares corresponding to the time of action of the rays.—On some new derivatives of tetrahydrobenzene: Léon **Brunel.** By the simultaneous action of iodine (in the presence of mercury oxide) and acetic anhydride upon tetrahydrobenzene an iodoacetate is formed,  $CH_2.CO_2.C_6H_4.I.$ —The synthesis and study of cyclic substituted thio-hydantoins: Emm. **Pozzi-Escot.** The method of preparation adopted consisted in acting upon the  $a$ - $b$ -disubstituted thio-ureas with a monoalkyl fatty acid.—On the possibility of producing a non-brittle steel, tempered blue: Ch. **Fremont.** It is generally supposed that all irons and steels, whatever their quality, become brittle under shock at temperatures between  $200^\circ C.$  and  $450^\circ C.$  An example is given showing that this is not necessarily the case.—On a method of decomposition of complex statistical curves into irreducible curves: Charles **Henry.**—On the accessory glands of the larvæ of the Lepidoptera: L. **Bordas.**—The development of the tentacles of the Campanulariidae and the Plumulariidae: Armand **Billard.**—The resistance to desiccation of some fungi: Mme. Z. **Gatin-Gruzewska.** It has been found that certain fungi, including three species of *Polyporus*, are not killed by a prolonged drying at  $37^\circ C.$ , as the dried fungi, when moistened, possess the same respiratory coefficient as the undried plant. The amount of carbon dioxide given off per hour is, however, less in the former case than in the latter.—On the constitution of arable earth: A. **Delage** and H. **Lagatu.** By the application of the methods of petrography to the smallest particles of arable earth, the authors come to the conclusion that instead of the earth being, as is usually represented in classical works on the subject, the result of a disaggregation followed by a decomposition of the mineral constituents of rocks, it simply consists of the various minerals of the rocks from which it is derived in a very fine state of division. The mica, quartz, felspar, calcite, tourmaline, apatite, &c., are per-

fectly normal, and show no signs of decomposition or of localised corrosion. The advantages of this method of examining arable earths, when used to supplement the results of a chemical examination, are pointed out.—On a new potato suitable for cultivation in damp soils: M. **Labergerie**. *Solanum Commersoni*, which up to the present has been regarded as only good for forage, has been found to give an excellent edible tuber, and it possesses the great advantage of preferring a damp soil for its growth.—On the gasification of vegetable combustibles and the generation of an economical motive power in agriculture: L. **Bordenave**. An account of the production of gaseous fuel from agricultural refuse, used in conjunction with a gas engine designed for gas of low calorific value.—The Coal-measures in French Lorraine: Francis **Laur**. The views of the author regarding the prolongation of the Saarbruck basin into France, following an axial line Neukirchen-Pont-à-Mousson, have been confirmed by two borings 700 metres deep. Further borings are in progress for the thorough exploration of the coal field. The coal contains 2 per cent. of moisture, 36 per cent. of volatile matter, 49 per cent. of coke, and 13 per cent. of ash.—Glacial growth at the end of the nineteenth century, and the different factors which have determined the anomalies of this growth in the massif of Pelvoux: Ch. **Jacob** and G. **Flusin**. The observations put forward furnish an explanation of the anomalies of glacier growth in this region indicated in 1900 by Kilian.—On subterranean corrosion at Wells (England), and the chronometry of subterranean erosion: E. A. **Martel**.

## NEW SOUTH WALES.

**Linnean Society**, October 26.—Dr. T. Storie Dixon, president, in the chair.—Notes on Australian Lycænidæ, part iv.: G. A. **Waterhouse** and R. E. **Turner**.—Revisory notes on Australian Carabidæ, part i., tribes Carabini, Pamborini, Pseudozenini, Clivinini, and the genus *Nebriosoma*: T. G. **Sloane**.—Notes on the native flora of New South Wales, part ii.: R. H. **Cabbage**. The route traversed—Boggabri to Tingha, via Narrabri, Moree, Warialda, and Inverell—offers sufficient variations in altitude and geological formation (including portion of the black soil plains) to provide interesting examples of the results traceable to these factors in the distribution of species under Australian conditions. Thus the effect of climatic influence is exhibited by such species as *Eucalyptus sideroxylon* (ironbark or mugga), *E. conica* (a box-tree), and *E. melanophloia* (silver-leaved ironbark), which in the south grow at lower elevations than is the case towards the north, where they are able to ascend the mountains owing to the warmth of northern latitudes being tempered by the increased elevation. The same influence also allows certain eastern and western species to mingle on the northern highlands, while in the south the Great Dividing Range serves as a cold barrier to keep them apart. As an instance of the influence of geological formation, the case of a sandstone area between Boggabri and Narrabri was mentioned; here *Angophora lanceolata* is a conspicuous feature of the flora.—Notes from the Botanic Gardens, Sydney, No. 10: J. H. **Maiden** and E. **Betche**.—Miscellaneous notes (chiefly taxonomic) on *Eucalyptus*, part i.: J. H. **Maiden**. The author deals with some plants formerly included under *E. amygdalina*, Labill. The confusion which has gathered around *E. radiata*, Hook. f. (non Sieb.), is finally cleared up. That "white gum" included under *radiata* by Bentham and others is described as a new variety or species under the name *E. numerosa*, from the number of fruits in an umbel.

## GÖTTINGEN.

**Royal Society of Sciences**.—The *Nachrichten* (physico-mathematical section), part v. for 1904, contains the following memoirs communicated to the society:—

July 23.—A. **Sommerfeld**: Contributions to the theory of electrons; (2) bases of a general dynamic of the electron. G. v. d. **Borne**: Seismic records in Göttingen, July–December, 1903. W. **Voigt**: The action of electric vibrations upon optically active bodies. M. **Laue**: On the propagation of radiation in dispersive and absorptive media.

September 10.—J. **Thomæ**: On a Gaussian series in various parts of its region of convergence.

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## INDIA.

**Asiatic Society of Bengal**, November 2.—Some archaeological remains in Bishnath: W. N. **Edwards**. The old earthworks round Bishnath and Pertabghur are described, as well as the Buroi Fortification.—*Noviciæ Indicæ*, xxiii., four orchids new to the Indian flora: D. **Prajin**. Descriptions of two new species, *Microstylis Cardoni* from Chota Nagpur, and *Eulophia Campbellii* from Manbhum and Singbhum; and also of *Lecanorchis japonica*, Bl., and *L. malaccensis*, Ridl., orchids now first added to the Indian flora.—*Noviciæ Indicæ*, xxiv., some new Indian plants: D. **Prajin**. Some notes on species of the orders Anonaceæ, Sterculiaceæ, Celastraceæ, Leguminosæ, Rosaceæ, Combrétaceæ, Orobanchaceæ, Labiata, and Monotropææ, together with descriptions of new species.—A language map of west Tibet with notes: A. H. **Francke**. The distribution is given of the Rong, Leth, Sham, Purig, and Balti dialects in the Indus and Shayog valleys, and in Zangskhar and Rubshu.—Additions to the collection of oriental snakes in the Indian Museum, Calcutta: Nelson **Annandale**. A paper adding to our knowledge of the distribution of Typhlopidae, Uropeltidae, Colubridæ, and Viperidae in India.—On *Dioscorea deltoidea*, Wall., *D. quinqueloba*, Thunb., and their allies: D. **Prajin** and I. H. **Burkill**.

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