

summit." Concerning the Kangchenjunga glaciers, Mr. Freshfield says, "Four glaciers radiate from the peak, pointing roughly to the north-east, south-east, north-west and south-west. Those are the Zemu Glacier, eighteen miles long, and the Talung Glacier, both draining to the Teesta, the Kangchen Glacier, fifteen miles long, and Yalung Glacier, both draining to the Arun and the Khosi. The forked spurs that protrude south and west from Kangchenjunga, dominated respectively by Kabru and Jannu, enclose in the first case the Alukthang glaciers, united not long ago in a single stream and now divided by little more than their moraines, and the southern glaciers of Kabru, which fall into a separate glen; in the second case, three considerable ice-streams, one of which almost meets the Kangchen Glacier at its lower extremity, the second builds across the valley, out of the rockfalls of the tremendous cliffs of Jannu which encompass its source, a remarkable wall of moraine stuff, similar to those of the Allalain, or the Brenva in the Alps,

and extent of the cliffs surrounding the head of the glacier. The glacier is now in retreat; the ice has sunk somewhat and the lateral moraines appear above it.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

THE installation of the Prince of Wales as Chancellor of the University of Wales will take place at the University College, Bangor, on May 9.

LORD ROSEBERY has been formally nominated as Chancellor of the University of London, in succession to the late Lord Kimberley. As no other nomination has been made, he will be elected by Convocation at the meeting to be held on May 13.

THE London School Board, and the School Boards of most large towns, have for some years provided special schools where

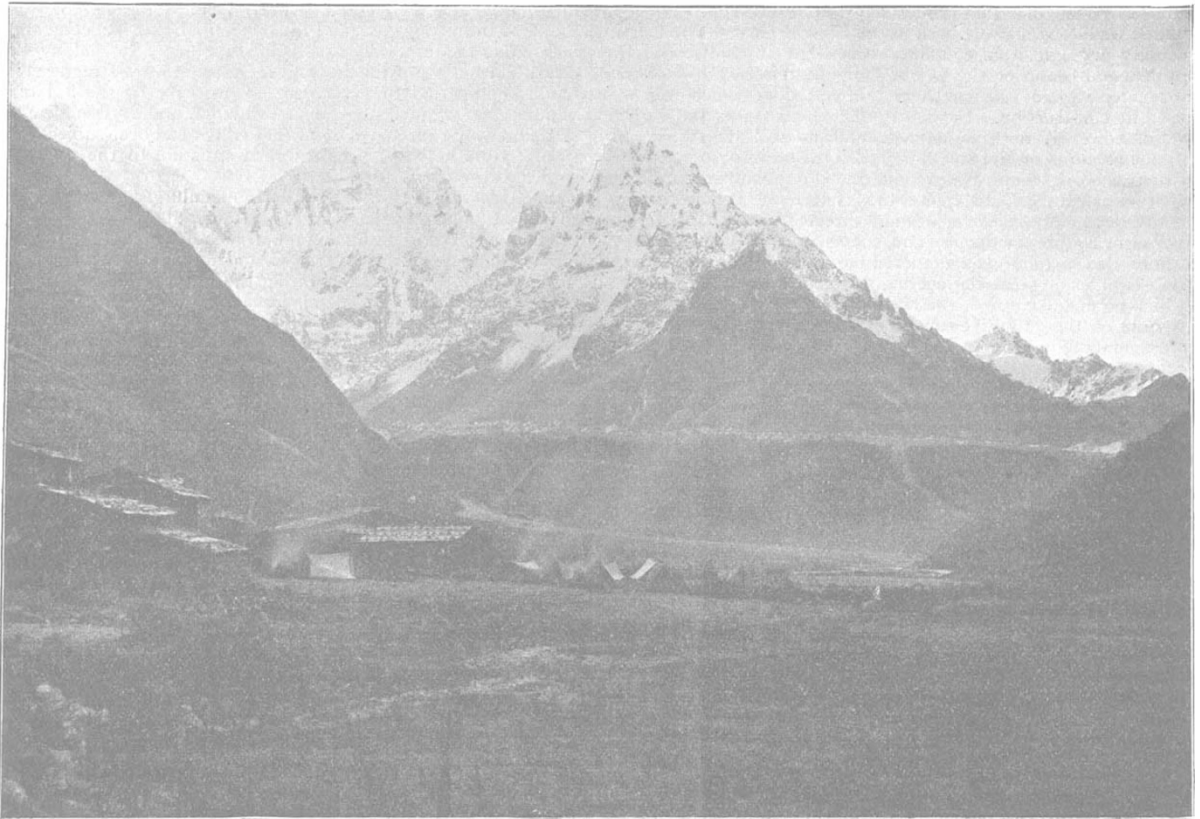


FIG. 1.—Kanbachen in Nepal, with Jannu and the Dyke of the Jannu Glacier. (From the *Geographical Journal*.)

while a third fills a glen the stream from which joins the Kangchen torrent at Khunza."

Mr. Freshfield was accompanied by Prof. Garwood, Signor Vittorio Sella and his brother, and Mr. Dover, now road inspector at Sikhim, with an Alpine guide. Prof. Garwood devoted much labour to the compilation of a photo-topographic map of the region, which is to be published in an early number of the *Geographical Journal*, and is described by Mr. Freshfield as a "specimen of the right method to delineate glaciers." The paper is illustrated by a number of photographs taken by Prof. Garwood and Signor Sella. The specimen we reproduce represents Jannu and the dyke of the Jannu Glacier as seen from Kanbachen. The ice crosses the valley at right-angles, over a great dyke of moraine débris, and the torrent from the higher valleys is squeezed against the western hill. There was at one time a lake above the moraine dyke. The cause of the exceptionally large amount of moraine material is the great height

their pupil teachers receive instruction at specified times. It has now been decided that these schools are illegal. Mr. Cockerton, the Local Government auditor, has formally notified the London School Board that it has no authority in law to spend the rates in providing and maintaining special schools for the instruction of pupil teachers.

IN the House of Lords on Monday, in reply to a question by Lord Reay, referring to the new Regulations for Evening Schools, the Duke of Devonshire said:—"It is intended that all local expenditure—by which is meant expenditure on evening schools other than that which is provided by Government grants—shall in future be provided by local authorities under the Technical Instruction Acts. As to whether the funds at the disposal of the local authorities will be sufficient for that purpose, the existing local authorities under the Technical Instruction Acts have by no means exhausted the funds at their disposal

which are applicable to the purposes of education. It is probable, however, that the responsibility for the whole of the evening school work, as contemplated by the regulations of the Board of Education for last year and this year, may involve them in an expenditure which their present resources are unable to meet. The Bill now before Parliament provides additional and, we believe, ample resources for all parts of the country except London. The present policy of the Board of Education is that evening schools, the great majority of which are intended for persons older than children, shall be provided and maintained by the local authorities for secondary education and receive grants under the regulations of the Board relating to secondary education."

SIR JOHN GORST spoke at Bradford on Saturday last upon the subject of the Education Bill of the Government. His remarks were aimed chiefly at the justification of the Government in making County and Borough Councils the local authorities for education. The necessity for this one authority in a particular sphere of influence has been almost universally accepted, but the difficulty is to determine the constitution of the body. Proceeding to describe the present position, Sir John Gorst said that the councils which are entrusted with technical instruction are entirely independent of central control. The consequence is that technical instruction as it is now carried out in this country is practically the entire creation of that new authority with very little assistance or direction from anybody. The councils are not bound to use the whisky money for technical instruction. They might have applied it to the relief of local rates, but in the last year for which statistics are available the total amount of the whisky money was 981,000*l.*, and of that sum 901,000*l.* was voluntarily devoted by the councils to technical instruction and only 80,000*l.* went to the relief of rates. Sir John Gorst remarked that the Duke of Devonshire and he selected the councils as the local authority rather than the School Boards, because a body which represented the ratepayers could not be a real local authority unless it had the absolute command of local finances, and if they had any other body levying rates without the consent of the body which properly represented the ratepayers they weakened the authority of the principal body and prevented it from gaining that proper influence over local affairs, expenditure and management which was essential to a properly constituted authority. A further question was whether the local authority was to be independent or to be tied down by the provisions of the statute. The effect of the working of the Technical Instruction Act was such as to be in favour of leaving these great local authorities to themselves. He preferred to trust them and give them ample powers, and leave them to exercise those powers for the benefit of the people whom they represented.

THE remarks made by Mr. Balfour at the Mansion House on April 23 upon the subject of commercial education are referred to in an article on the University of London which appears in another part of this issue. In the course of his address, Mr. Balfour said: "I would impress the doctrine, that important, necessary and essential as that narrow, technical training may be, we are ill learning the lesson of education which is now being taught us by other nations if we do not recognise that something more in the nature of general training and culture is absolutely necessary if we are to maintain the place so hardily won and so proudly maintained among the nations of the world. If commerce is to be treated as a subject of scientific study, it must not be approached simply in the spirit of those who desire to obtain a mastery of one particular instrument, one particular language, one particular form of knowledge, but must be approached, as all knowledge worthy the name should be approached, in the broader spirit of impartial scientific investigation. I do not think that higher praise can be given to the work in which Sir Albert Rollit and his colleagues are engaged than to say of it that, not merely have they given opportunities which would otherwise have been withheld to many persons in our community to learn the arts necessary for their work and success in life, but that they have also, and in addition to that merely technical training, in many cases laid the foundations on which may be built that solid and scientific knowledge of the commercial and economical forces of our time which are absolutely essential, as I think, to the proper conduct of the affairs of a great commercial country." Commercial education is so often understood to mean training in office routine that Mr. Balfour's statement as to what the term should imply ought to be widely

known. All commercial and technical education of value must be founded upon sound primary and secondary education, and must be studied, not so much with the view of acquiring facility in carrying out the present duties of the office and workshop as with the intention to discover new methods and new processes. As with the individual, the nation that rests content with its achievements must eventually fall behind others which aim at obtaining and using new knowledge. It is in this spirit that commercial education must be viewed in order that it may assist national progress.

SCIENTIFIC SERIAL.

IN the *Journal of Botany* for April, H. W. Pugsley gives the first part of an article on the "British Capreolate Fumitories." Messrs. David Prain and Edmund Baker complete their "Notes on Indigofera." The various forms that have been included in the species *Indigofera tinctoria*, L., and *Indigofera Anil*, L., receive the fullest treatment, and the authors come to the following conclusions:—*I. tinctoria*, L., has been applied to three forms: (1) the wild form, which is probably indigenous to Africa; (2) the variety of the previous one, cultivated in southern India, at the present day more especially in Madras; (3) the plant cultivated in northern India, known as "Nil"; the differences between this and the other cultivated variety are so pronounced and constant that it seems justifiable to separate it off, when it becomes *I. sumatrana*, Gaertner. The specific name Anil, also given by Linnæus, is connected with the Egyptian vernacular word "Nil," which indicates any species that supplies the indigo dye. In Egypt "Nil" would refer to *I. articulata*, Gouan, in India to *I. tinctoria*, L., while in neither of these countries would it include *I. Anil*, L., which will not grow in Egypt and does not find favour in southern India. De Candolle instituted three varieties of *I. Anil*, L., of which two call for comment. Var. *a oligophylla* is the same plant as *I. truxillensis*, H. B. K., which was probably cultivated in the West Indies in the time of Hans Sloane. Var. *b. polyphylla* is the plant now cultivated in the West Indies and other parts of the New World. This is the true *I. Anil*, L., but to avoid any confusion which may arise from the use of that specific name, it is suggested that it should be established, under another synonym, as *I. suffruticosa*, Miller. Arthur Bennett continues his "Notes on Potamogeton," and deals with some foreign species from Australia, America and Japan. The most interesting of four new British Hepaticæ described by S. M. Macvicar is *Aneura incurvata*. It comes near to *A. multifida* and *A. sinuata*. It may be expected to be recorded again, as it has been found in Austria, Germany and Scandinavia.

SOCIETIES AND ACADEMIES.

LONDON.

Physical Society, April 25.—Prof. S. P. Thompson, president, in the chair.—Dr. Dawson Turner exhibited and described a mechanical break for induction-coils. The use of induction-coils in the production of Röntgen rays and in wireless telegraphy has made the construction of a suitable break a matter of importance. The ordinary break is unsuitable because of the wearing away at the point of contact, and there are objections to the use of mercurial breaks. The portable mechanical break which was shown by Dr. Dawson Turner consists of two metallic rollers with their axes parallel and kept in contact by a spring. One of the rollers has a cam attached to its spindle, and can be made to rotate by means of a small electric motor. Once in each revolution the cam separates the rollers, thus making the break, and at the same time causing the second roller, which rides loose upon its axis, to turn about one-eighth of a revolution. As soon as the cam has passed, the rollers are brought into contact by the spring, and the next break occurs at a different place. The wearing is thus distributed evenly over a large surface. The break is placed in a box containing alcohol or petroleum, and works best when rotating rapidly. An objection to the arrangement is the noise it makes when working. Some experiments were then shown on the discharge of electric bodies by ultra-violet light. A disadvantage of the electric arc when used to furnish ultra-violet light for use in medicine