Mr. John Purser (Imperial College—City and Guilds College) and Mr. M. K. Rice-Oxley (Imperial College—City and Guilds College); mechanical engineering, Dr. J. V. Howard (Imperial College—City and Guilds College) and Dr. S. Livingston Smith (Imperial College—City and Guilds College).

WALES.—At a meeting of the University Court on July 20, reference was made by the pro-chancellor to the very grave financial position of the University, which has arisen owing to the decrease in the contributions of local authorities since the passing of the Derating Act. Unless there is a favourable outcome to the negotiations which are now proceeding, the University will suffer a reduction in income of about £10,000 a year.

The Council of the Welsh National School of Medicine has appointed Sir Ewen J. Maclean to be an emeritus professor.

IN connexion with the Geneva Institute of International Relations, a conference on Training for World Citizenship will be held at the Institute on Aug. 19–23. Particulars can be obtained from the Secretary, Education Committee, League of Nations Union, 15 Grosvenor Crescent, London, S.W.1.

THE sixth International Conference of University Women is being held at Edinburgh. The Conference was opened on July 27 and will continue until Aug. 4. Included among the lectures being given in connexion with the Conference is one by Dr. Johanna Westerdyk on "Epidemics of Plant Diseases", and another by Mme. M. L. Puech on "Intellectual Co-operation". For the first time, the group discussion method will be introduced, the subject being "Does the University offer to the Modern Woman the Training needed to fit her for Life?": the discussion will be opened by Dr. Aurelia H. Reinhardt.

EDUCATION for commerce was discussed at a meeting of the Royal Society of Arts under the presidency of Sir Francis Goodenough on April 27. A full account of the lecture by Mr. H. Ramsbotham, Parliamentary Secretary to the Board of Education, which preceded the discussion, and of the remarks by a number of authorities, eminent in business and education, who took part in it, has now been published (*J. Roy. Soc. Arts*, June 17). Mr. Ramsbotham emphasised the imperative necessity of co-operation between employers and teachers in connexion with the framing of curricula, recruitment for employment in commerce, and part-time further education of employees. Now that so large a proportion of the younger generation, who would in former times have gone into the factory or the office at the age of fourteen years, remain in school for another two years, it is of vital importance that the needs of the factory and office should not be ignored by the schools. In the course of the discussion, many practical problems were dealt with and elucidated by reference to particular instances. Mr. Chorlton referred to effective training methods in use on the continent, especially Czechoslovakia, where the number of part-time day students of 16-20 years of age is thirtyfold greater in proportion to population than in Great Britain. Mr. Harold Sanderson described a successful experiment in the Burslem (Potteries) district in secondary education with an artistic bias. Miss Ford, H.M. Staff Inspector of Schools, suggested that American experience in child guidance and vocational guidance showed that we do not in Great Britain devote enough attention to detailed systematic examination of children to find out what their aptitudes are. Other speakers dwelt on the necessity for a better understanding on the part of university authorities of the qualifications appropriate for employment in commerce.

Calendar of Geographical Exploration

July 31, 1908.—Interior of New Guinea

D. Mackay and W. S. Little landed in New Guinea and explored the Upper Purari River. They suggested that coal existed in the interior of the island, and as a result Staniforth Smith in 1910–11 opened up for the first time a large area north-west of the Gulf of Papua and east of the basin of the Fly River.

Aug. 1, 1862.—The Kara Sea

P. von Krusenstern, jr., started from the Pechora River on his second attempt to reach the Kara Sea. His boat became fixed in the ice near Yugor Shar and drifted across to the east coast of the Kara Sea, his narrative forming the first complete sketch of a journey from west to east of that sea. He and his men had a series of hairbreadth escapes: their vessel was nipped in an icefield and eventually had to be abandoned. They made their way across the ice, sometimes leaping on to pieces of drift ice which had to be towed by boathooks, but ultimately reaching land and travelling in reindeer sledges to Obdorsk. A curious incident was the attempt of six walruses to accompany them on to a piece of drift ice.

Aug. 2, 1904.—Tibet and the Mustagh Pass

Sir Francis Younghusband reached Lhasa on a political embassy. On the return journey, the Brahmaputra from Shigatse to its source, the Sutlej from its source to the borders of India, and the Gartok branch of the Indus were surveyed by members of the party—a most important contribution to the geography of south and south-west Tibet. In 1886, Younghusband and H. E. M. James set out from Manchuria for India, during which journey they discovered and crossed the Mustagh Pass in 1887. Younghusband's work markedly extended the amount of accurately surveyed area in these regions; he also proved that the Mustagh is the true water parting west of the Tibetan plateau.

Aug. 3, 1868.—Scientific Exploration of China

Baron F. von Richthofen sailed from San Francisco for China, where he carried out his classic survey of that country. In 1859 he had accompanied a Prussian diplomatic mission as geologist, visited Ceylon, Japan, Formosa, the Philippines, and Java, and made an overland expedition from Bangkok to Moulmein. Unfortunately, his records and collections on this journey were lost. In 1877–85 he published three volumes and an atlas dealing with the geology and geography of China, including a notable study of the loess regions. He directed attention to the coalfields of Shantung, to the importance of Kiaochow as a port, and to many other possibilities of economic development. Between 1868 and 1872 he made seven expeditions into the interior of China, visiting, among other regions, Shantung and South Manchuria, central China, Chih-li, and Szechwan.

Aug. 4, 1482.—Mouth of the Congo

Circumstantial evidence points to this as the probable date on which Diego Cam or Cão discovered the mouth of the Congo River. Cam was the first explorer to carry stone pillars to mark newly discovered points, instead of relying on wooden crosses or carved trees. He put up four pillars altogether, two on his first and two on his second voyage. Fragments of the pillar he set up on Shark point to commemorate his discovery of the Congo River still

remain. Cam thence sailed south along the Angola coast and erected a second pillar at Cape Santa Maria in 13° 26′ S. On his second voyage (1485–86) he reached Cape Cross in 21° 50′ S. Thus he discovered 1450 miles of the West African coast-line, and paved the way for the voyages of Diaz and da Gama. An inscription on Behaim's Globe of 1492 suggests that he accompanied Cam on his second voyage, but doubt has been cast upon this statement.

Aug. 4, 1819.—Arctic Exploration by Ship and Sledge

W. E. Parry with the ships *Hecla* and *Griper* reached Lancaster Sound, whence he proceeded westwards, discovering Barrow Strait and parts of the coasts of Bathurst and Melville Islands. The winter was spent on the latter island. In 1821, Parry, on a second voyage, discovered the Fury and Hecla Strait between Baffin Island and Melville Peninsula. On April 3, 1827, Parry set out in the *Hecla*, proposing to attempt to reach the pole by travelling over the ice in sledge boats. He reached 82° 45′ N., thus establishing a record which remained unbroken for nearly fifty years. Experience had shown that efforts to sail to the pole were fruitless; to him and to Sir John Franklin belongs the credit of the introduction of the method of polar investigation by sledge journeys.

Aug. 6, 1538.—Exploration of Colombia

Gonzalo J. de Quesada founded the city of Santa Fé de Bogotá. He reached this region, which he called New Granada, after a difficult journey through uninhabited country along the Magdalena River, which he finally abandoned for the valley of the Opon.

Aug. 6, 1584.—Early Journeys in Siberia

Yermak, the Cossack who opened the path for Russia's expansion in northern Asia, was drowned in the Irtish River. Provided with funds by the Stroganov family, merchants of Perm interested in furs, he penetrated, between 1579 and 1584, to the confluence of the Ob and the Irtish. He reached the Tura in 1580 and wintered on the site where Tiumen now stands: in 1581 he captured the native fortress of Isker or Sibir, near the present Tobolsk. The Cossacks made their journeys in sailing boats, which were dragged across portages from one stream to another. Yermak is said to have used sails to dam up a stream and thus provide sufficiently deep water for his boats. Cossack bands, after Yermak's death, continued to explore north-eastern Asia. No tributaries with easy portages connect the Lena to western rivers, and the Russians who sailed the Lena to its mouth and attempted to explore the arctic in their primitive boats suffered severe hardships, whole parties being often completely wiped out. The importance for geographical knowledge of their journeys was long overshadowed by greed for tribute, and thus the records of their routes were forgotten.

Aug. 6, 1855.—Greenland and the Canadian Arctic

Dr. Kane and his party safely reached Upernavik in small boats, having been compelled to abandon the *Advance*, in which they had set out in 1853. Kane's work included the survey of the east coast of Smith Sound, the discovery and naming of the Humboldt Glacier, the survey of 800 miles of the coast of Greenland, and the discovery and survey of part of the coast of Washington Land. His vessel, the *Advance*, reached 78° 37′ N., and sledge parties penetrated to Cape Fraser in Ellesmere Island and to Cape Constitution in Greenland. A relief expedition under Hartstene found the party at Upernavik.

Societies and Academies

LONDON

Optical Society, June 9.—**R. A. Houstoun**: A new trichromatic colorimeter. The instrument is on a new principle, the intensity of the comparison field being altered by an iris diaphragm, and the colour by moving a magenta-yellow and a blue-magenta filter relatively to one another.—**T. Y. Baker**: The parallel plate micrometer. A plate of parallel glass placed in the convergent beam of a reading microscope is a useful means of obtaining the 'fine-reading' of a divided circle. The fine-reading scale is uniform if its length is proportional to the tangent of the angle through which the plate is tilted and if the refractive index of the glass is 1·60.—**J. Adamson**: A study of the cyclo-rotational powers of the eyes. An expression for the 'false torsion' of the eye is derived in terms of the direction of its line of fixation, and is used in calculating the extent of the compensatory cyclo-rotational powers of the eyes.—**T. Smith**: The hiding power of diffusing media. From theoretical considerations an expression is constructed as a numerical measure of the power of a sheet of a diffusing medium to hide the brightness contrasts of a surface on which it is laid. The dependence of this factor on the transmission and reflection factors of the sheet is exhibited and the effect of varying the thickness of the sheet is discussed. A comparison is made of these theoretical results with published experimental observations. The properties of all sheets may be expressed in terms of two constants, of which one is the reflection factor for an infinitely thick sheet, and the other is a factor for converting sheet thicknesses to the proper numerical scale.

Geological Society, June 22.—**Jane Longstaff** (née **Donald**): A revision of the British Carboniferous members of the family Loxonematidæ, with descriptions of new forms. Many Carboniferous species have been referred to the genus *Loxonema* (Phillips) which do not strictly belong to it. This is the case with Etheridge's Catalogue, where 25 species are given. Some of them, however, belong to the family Loxonematidæ as defined by Koken, and are referable to several of the genera into which it has since been divided. These are *Zygopleura* Koken, *Katosira* Koken, *Microptychis* Longstaff, and *Hemizyga* Girty. Three new genera are suggested for other species. The genus *Zygopleura* Koken contains by far the largest number of the species; one of these, *Z. rugifera* (Phillips), exhibits a considerable amount of variation both in size and ornamentation. The nuclear whorls, also, accord more with that genus than with *Pseudozygopleura* Knight. Twenty-six species and several varieties are described, 13 of the former being new. Six had been previously noted by de Koninck as common to Belgium, and another is now recorded: namely, *L. subconstricta* de Koninck.—**Archibald Allison**: The Dalradian succession in Islay and Jura. The author outlines results recently obtained by himself through the application of the criteria of current bedding and graded bedding, restricting his attention to the Dalradian rocks north and east of the Loch Skerrols thrust. Previously, this method of study has scarcely been used in Islay. The evidence of original order of succession is abundant, widely dispersed and consistent. Combined with the fact that the Maol an Fhithich Quartzite appears naturally to underlie the Mull of Oa Phyllites, it leads the author to conclude that the structure of Islay is an anticline, in part steeply overturned towards the north-west, in complete agreement with the views of Prof. E. B. Bailey as expounded in his paper on the Islay anticline.