

lens have invariably been costly and heavy, and the Kodak Company have made quite a new departure in cameras in designing one that is light and cheap, and rapid enough in action to serve as a hand camera. The sample shown is called the "No 1 Panoram Kodak," from which we suppose that larger cameras of the same pattern will be issued in due course. It gives a picture seven inches long with a lens of about three and a half inches focal length. Film is used, and the drawing of it over the curved guides, to bring a new piece into position, is no more difficult than changing the film in any of the other kodaks. It has no shutter as usually understood, but the lens with its cone behind it swings beyond the sensitive surface and past a little flap, so that in its position of rest light cannot pass through the lens to the film. The apparatus is very ingeniously constructed, simple and effective.

There are many other exhibits of technical interest that might be noticed in detail, particularly, perhaps, photographs of living creatures of all kinds; but to enumerate them would be to reproduce a considerable portion of the catalogue. Many are evidence of the great skill and perseverance of the exhibitors. Some fine examples of photogravure show this process at its best. Some photogravures in colour, by Messrs. Ignatz Herbst and Theodore Reichs, show what can be done by a single printing after the various colours have been applied to the plate by the hand of one or more artists.

The exhibition is open daily until November 3.

THE INTERNATIONAL GEOLOGICAL CONGRESS.

THE eighth International Geological Congress was held this year in France. The work of the Congress consisted of papers read at the meetings at Paris, which were followed by discussions, and by excursions into different parts of the country, conducted by French geologists.

The meetings of the Congress took place from August 10-27 at the Palais des Congrès, within the enclosure of the International Exhibition.

The inauguration was held on Friday, August 16, under the presidency of M. Leygues, Minister of Public Instruction and the Fine Arts. M. Karpinsky, president of the last session of the Congress at St. Petersburg, gave an address; he then read the following list of the members of the Committee, proposed by the Council:—Ex-presidents, MM. Capellini and Karpinsky. President, M. Albert Gaudry. General secretary, M. Charles Barrois. Vice-presidents—Germany: MM. H. Credner, Lepsius, Schmeisser, Zirkel, von Zittel. Austria and Hungary: MM. Böckh, Mojsisovics of Mojsvar, Tietze. Belgium: MM. Moulton, Renard. Bulgaria: M. Zlatarski. Canada: Dr. Frank Adams. United States: Messrs. Hague, Osborn, Stevenson. France: MM. Michel-Lévy, Marcel Bertrand. Great Britain: Sir Archibald Geikie, Sir John Evans. India: Dr. Blanford. Italy: MM. Cocchi, Mattiolo. Japan: M. Kochibe. Mexico: M. Aguilera. Norway: Dr. Brøgger. The Netherlands: M. Martin. Portugal: MM. Choffat, Mendés-Guerreiro. Roumania: M. G. Stéfanescu. Russia: MM. Loewinson-Lessing, A. P. Pavlov, Sederholm, Tschernyschew. Sweden: M. Högbom. Switzerland: MM. Baltzer, C. Schmidt. Secretaries: MM. Zimmermann, W. Pavlow, von Arthaber, Gäbert, Crema, Cayeux, Thévenin, Thomas. Treasurer: M. Léon Carez. This list was voted with applause.

M. Albert Gaudry, the new president, then read the inaugural address. In the warmest terms the eminent geologist welcomed the assembly of scientific men who had come from all parts of the world, and then proposed that they should rise to show honour to the memory of the learned geologists who had passed away since the last Congress. The president referred to the principal propositions submitted during the preceding sessions, and enumerated the four sections of the present Congress:—

- I. Section of general and tectonic geology.
- II. Section of stratigraphy and palæontology.
- III. Section of mineralogy and petrography.
- IV. Section of applied geology and hydrology.

M. Charles Barrois, general secretary, read his report on the work of the Committee of Organisation. M. Leygues, Minister of Public Instruction and the Fine Arts, welcomed the foreign members of the Congress in the name of the Government.

Section I. (General and Tectonic Geology). President: Sir Archibald Geikie.

Papers:—Presidential Address on international co-operation in geological investigation; Chamberlin, the assistance of the Congress in the fundamental investigations of geology; J. Joly, the geological age of the earth fixed by the amount of sodium in the sea; on the experiments relative to erosion in fresh water and salt water; order of the formation of silicates in igneous rocks; mechanical structure of marine sedimentation; A. de Lapparent, definition for each of the periods of the history of the globe, of the regions where by preference arguments should be sought on which the precise delimitation of the geological strata and substrata could be founded; Munier-Chalmas, Parisian Tertiary strata, delimitation of the Secondary and Tertiary formations; Stanislas-Meunier, phenomena of subterranean sedimentation; Bleicher, denudation of the Lorraine plateau and its results; Richter, reading of the report of the Commission on Glaciers; H. F. Reid, on the movements of glaciers; Arctowski, remarks relating to the former extent of glaciers in the land regions discovered by the Belgian Antarctic expedition; Popovici-Hatzeg, presentation of the new geological map of Roumania on the scale of 1/300,000; Voræeg, proposition tending to simplify the observation of the inclination and strike of the strata; l'Abbé Parat, geological observations in the caves of La Cure (Morvan).

Section II. (Stratigraphy and Palæontology). President: Dr. von Zittel. Discussion on the report of the International Commission on Stratigraphic Classification.

Papers:—Scott, fauna of Patagonia; Raulin, Tertiary districts of Aquitania; C. Eg Bertrand, charbons gélosiques et charbons humiques; Grand'Eury, formation of coal-seams in the coal basins of Central France; Lemière, transformation of vegetables into fossil fuel; Osborn, progress of the methods of palæontology; relations between the mammal fauna and the Tertiary horizons of Europe and America; E. Fichet, presentation of the third edition of the geological map of Algeria on the scale of 1/800,000; Flamand, on the geology of the south of Algeria and the regions of the Sahara; Douville, on the Jurassic formation of Madagascar; on the results of the exploration of M. de Morgan in Persia; Zeiller, fossil plants of Tonquin; Malaise, the Cambrian and Silurian of Belgium; Dr. P. Ehlert, on the reproduction of fossil types; W. F. Hume, the rift valleys of Sinai; T. Barrow and W. F. Hume, on the geology of the eastern desert of Egypt.

Section III. (Mineralogy and Petrography). President: Dr. Zirkel. Honorary Presidents: MM. Rosenbusch and Fouque.

M. Lacroix announced the views adopted by the International Commission of Petrography in its meetings of October 25 and 26, 1899.

The following proposals were adopted by the Assembly:—

(1) The names of the authors should always be given after the names of the rocks, as is the custom in zoology and botany.

(2) It is proposed to the Congress of 1900 to appoint an International Commission charged to publish the names of all new rocks with their descriptions as concisely as possible, with also their chemical analysis and, if necessary, a drawing representing their structure. This publication is to appear in the volume of the reports of the International Congresses.

(3) It is, above all, desirable to regulate the nomenclature of the eruptive rocks, where the want of unity is particularly felt. Different authors attribute a different sense and signification to one and the same name, while different terms are employed to designate the same rock, the same group of rocks, or the same structure. All the inconveniences of the present nomenclature can, and should be, avoided, at least for the large groups.

(4) The characteristics of the large groups, for example, of the families should be founded on the mineralogical composition, supported by the chemical composition and the structure.

(5) The large groups ought to be fixed from the present without disturbing the subsequent development of the classification, and the separation of these groups into subdivisions.

(6) It is desirable to designate the principal types of structure by special names.

(7) It is necessary to avoid the employment of the same term in different senses.

(8) One should avoid as much as possible the employment and introduction of different terms to designate the same notion, the same rock, or the same group of rocks.

(9) It is necessary to avoid as much as possible for new types of rocks the employment of pre-existing names, and assigning to them a new sense, or restricting or enlarging their meaning.

Dr. Zirkel was elected president of the Committee of Petrography.

Papers:—*Sacco*, attempt at a general classification of rocks; *Salomon*, attempts at a nomenclature of the metamorphic rocks; *Weinschenk*, on dynamo-metamorphism and piézo-crystallisation; on the formation of graphite; *Hague*, on the Tertiary volcanoes of the Absaroka Range; *Sabatini*, the present state of our knowledge of the volcanoes of Central Italy.

Section IV. (Applied Geology and Hydrology). President: M. Schmeisser.

Papers:—*Mourlon*, the new methods of Belgian geology; *Gosselet*, mineralisation of deep-seated waters; *Van der Veur*, on the enlargement of the kingdom of the Netherlands by the draining of the Zuyder Zee; *L. Fabre*, the plateaux of the Hautes-Pyrenees and the dunes of Gascony; *Van den Broeck*, the applications of geology; *Kunz*, progress of the production of precious stones in the United States; *Léon Janet*, utilisation and protection of sources of drinking water; *De Launay*, the teaching of practical geology; *A. de Richard*, origin of petroleum.

General meetings. Presentation of works:—*E. de Margerie* and *L. Raveneau*, cartography at the Universal Exhibition of 1900; *Louis Raveneau*, ninth annual geographical bibliography of the annals of geography, 1899. Presentation of the reports and proposals of general interest adopted by the Council; the Assembly adopted successively:—

(1) Report of the Committee of Geological Nomenclature, presented by M. Tschernyschew, with the benefit of the remarks made at the meeting of the Section.

(2) Report of the Committee of the Geological Map of Europe, by M. Capellini.

(3) Report of the Committee of Petrography, by Dr. Zirkel.

(4) Report of the Glacier Committee, by M. Richter.

(5) Proposal by Sir A. Geikie on international co-operation in geological investigations.

(6) Proposition by M. Ehlert on the reproduction of types.

M. Tietze proposed to the meeting, on the part of the Austro-Hungarian Government, to organise in three years a new Session of the International Geological Congress at Vienna. He informed them of the advanced state of the preparatory work for such a congress, and enumerated the many excursions which would be arranged for the members of the Congress.

The invitation of the Austro-Hungarian Government was unanimously accepted, and M. Tietze thanked the Congress for the warm reception given to his proposal.

Papers:—*Matthew*, on the most ancient Palæozoic fauna; *Walcott*, the pre-Cambrian fossiliferous formations; *Cayeux*, on the radiolaria and sponges of the pre-Cambrian rocks of Brittany; *Pavlow*, the Portlandian rocks of Russia compared with those of the Boulonnais; on some means which would contribute to the determination of the genetic classification of fossils; *Van den Broeck*, on the age of the deposits of the Iguanodons of Bernissart; *Gubbar*, disturbances and fractures of the folds in the Alps of France; *Stanislas-Meunier*, structure of the diluvium of the Seine; *Hull*, sub-oceanic terraces and valleys of the rivers of the western coast of Europe; *Hudleston*, the eastern shores of the Atlantic; *E. Martel*, on the recent discovery of large caverns and fissures.

During the Congress receptions were offered to its members, first by the Geological Society of France, at their new rooms in the Hôtel des Sociétés Savantes. The president of this society, M. A. de Lapparent, of the Institute, inaugurated this reception by an address, which was warmly applauded. M. and Mme. Albert Gaudry invited the members of the Congress to their house to a most brilliant soirée. Prince Roland Bonaparte received at his hotel the united members of the Geological and Anthropological Congresses, who were also received together by the Municipal Council at the Hôtel de Ville of Paris.

The Committee of Organisation offered a most brilliant banquet at the Hôtel du Palais d'Orsay; the addresses of M. Albert Gaudry, Sir Archibald Geikie, and MM. Tietze, Credner and de Lapparent were warmly applauded. Finally, cards for a reception at the Elysée, and tickets for the National Theatre, were placed at the disposal of the president by the Minister of Public Instruction and the Fine Arts, for distribution among the foreign members. Visits were arranged by the aid of the Committee, to the International Exhibition, the National collections of geology and mineralogy, to the Museum of Natural History, to the Sorbonne, and to the School of Mines.

The excursions of the Congress were well attended. The programme submitted to the geologists of the whole world was of the most tempting description. A pocket-guide, prepared by the united efforts of the French geologists, gave in several numbers a complete account of the geology of France.

In order to allow every one to take part in the greatest number of excursions, they were divided into three periods: before, during, and after the Congress.

(1) Excursions before the Congress: Ardennes, conducted by M. Gosselet; Gironde, by M. Fallot; Touraine, by M. G. Dollfus; Pyrenees (crystalline rocks), by M. Lacroix; Aquitania (Charente et Dordogne), by M. Glangeaud; Turonian of Touraine and Cenomanian of Le Mans, by M. de Grossouvre; Mayenne, by M. D. P. Ehlert; Brittany, by M. Barrois.

(2) Excursions during the Congress: Tertiary basin of Paris, MM. Munier-Chalmas, Léon Janet, Stanislas-Meunier and G. Dollfus.

(3) Excursions after the Congress: Boulonnais and Normandy, MM. Gosselet, Munier-Chalmas, Pellat, Rigaux, Bigot, Cayeux; Central Rocks, MM. Michel-Lévy, Marcellin Boule, Fabre; Coal-basin of Central France, MM. Fayol, Grand'Eury; Tertiary basins of the Rhone; Secondary and Tertiary rocks of the Lower Alps, MM. Deperet, Haug; Alps of Dauphiny, MM. Marcel Bertrand, Kilian, Lory, Paquier, Sayn, Léonhardt, Termier; Picardy, MM. Gosselet, Cayeux, Ladrière; Range of the Black Mountains, M. Bergeron; Pyrenees (sedimentary deposits), M. L. Carez; Lower Provence, MM. Marcel Bertrand, Vasseur, Zürcher.

These excursions, beginning on August 3, ended on October 2, and have had therefore a duration of three months.

The next meeting of the International Geological Congress will be held at Vienna in 1903. L. GENTIL.

FORTHCOMING BOOKS OF SCIENCE.

MR. F. ALCAN (Paris) announces:—"De l'Infection en chirurgie d'armée. Evolution des Blessures de Guerre," by Dr. Niemier; and a new edition of volume i. of "Manuel d'Histologie Pathologique," by Profs. Cornil and Ranvier.

The Australian Book Company (of West Smithfield) announce:—"The Geology of Sydney and the Blue Mountains; A Popular Introduction to the Study of Australian Geology," by Rev. J. Milne Curran.

The announcements of Messrs. Baillière, Tindall and Cox include:—"The Hair in Health and Disease," by Dr. David Walsh; "Infantile Syphilis," by Dr. G. Carpenter; "Microscopy of the Starches," by Prof. Hugh Galt; "Standards of Foods and Drugs," by C. G. Moor; and new editions of Rose and Carless's "Manual of Surgery," Stewart's "Manual of Physiology," Walsh's "Röntgen Rays in Medical Work," Himes's "Guide to Public Health Acts," Hutchinson's "Aids to Ophthalmic Surgery and Medicine," Sparke's "Artistic Anatomy of Man," Dennis's "Second-Grade Perspective."

Mr. Batsford promises:—"Waterworks Distribution," by J. A. McPherson, and "Sanitary Engineering," by Colonel Moore.

Messrs. Bemrose and Sons, Ltd., call attention to:—"Decimal Calculator and Multiplier," by C. Barker; and a new edition of "The Scientific Angler," by D. Foster.

Messrs. A. and C. Black will publish:—"The Human Ear: its Identification and Physiognomy," by Miriam A. Ellis; "Introduction to the Study of Physics," by A. F. Walden and J. J. Manley; vol. i. "General Physical Measurements—a Text-book of Zoology," by Dr. Otto Schmeil, translated R. Rosenstock; part iii. "Invertebrates."

Messrs. W. Blackwood and Son's list includes:—"Khurasan and Sistan," by Lieut.-Colonel C. E. Yate, illustrated; "The Sovereignty of the Sea," by Dr. T. Wemyss Fulton, illustrated; "A Manual of Classical Geography," by John L. Myres; "Physical Maps for the Use of History Students, (Greece, British Isles)" by Bernhard V. Darbishire; "Exercises in Geometry," by J. A. Third.

In the Cambridge University Press's list we notice:—"Scientific Papers," by Lord Rayleigh, F.R.S., vol. ii.; "Scientific Papers," by the late Dr. John Hopkinson, F.R.S., 2 vols.; "Scientific Papers," by Prof. Osborne Reynolds, F.R.S., vol. ii.; "The Scientific Papers of John Couch Adams," vol. ii., edited by Prof. W. G. Adams and R. A.