

melting of the snow must occur at very different times of the year. The Memel also possesses reservoirs in its marshes, and its region is perhaps better wooded than that of the other streams of Germany, but the long and hard winters cause an accumulation of large masses of ice and snow which melt suddenly and almost simultaneously in the whole region.

Herr Graeve takes up various other points, which have a practical bearing on navigation, but for these we must refer the reader to his memoir. He remarks in concluding on the desirability of comparing the conditions of outflow of German rivers with corresponding data for other European rivers, though at present the scanty and incomplete character of the data at hand render such inquiry scarcely practicable.

SCIENTIFIC SERIALS

THE *Journal of the Russian Physical and Chemical Society*, vol. xii. fascicules 5 and 6, contain, besides the minutes of meetings of the Society, the following papers:—In fascicule 5: On the dosage of chromium, by M. Th. Willm.—On the composition of the hydrate of peroxide of barium, by M. E. Schöne.—On the distribution of naphtha on the peninsula of Apsheron, by M. S. Goulichambaroff.—On the oxidation of ketones, by M. Goldstein.—On the products of oxidation of erythrite, by M. S. Przibytok.—A necrology of Prof. Nicolas Zinin, by MM. Borodin and Boutleroff.—On the magnetisation of liquids, by M. Ziloff.—On hail, by M. Schwedoff.—Notes by M. Latchinoff on specific heat, on a new dynamometer, and on electrical light.—In fascicule 6: On chloroamphoric oxide, by M. Latchinoff.—On the action of heat on phosphorites, by M. Beletzky.—On tetrollic acid, by M. Lagermark.—On the solidification and evaporation of drops of liquid, by M. Sloughinoff.—On the dosage of mercury and arsenic in corpses; and an analysis of the artesian wells of Staraya Rousia.

Revue internationale des Sciences biologiques, July, 1880.—J. L. de Lanessan, on the protozoa (a chapter with illustrations from the author's forthcoming "Manuel d'Histoire Naturelle médicale).—A. Hovelacque, on the inferior races of mankind.—M. Debierre, man before and on the threshold of history.—Proceedings of the Academies of Paris, Belgium, and Amsterdam.

August.—J. L. de Lanessan, the coloration and the colouring-matters in plants.—M. Moniez, on the cysticercs of *Tænia*.—M. Debierre, man before and on the threshold of history.—Proceedings of the Academies of Paris, Belgium, and Amsterdam.

September.—M. Vulpian, physiological study of poisons: curare.—M. J. L. de Lanessan, the saccharomycetes and the fermentations caused by them.—Prof. W. H. Flower, on the comparative anatomy of man (translated from NATURE).—M. R. Moniez, on cestoid worms and helminthologists.—Proceedings of the Academy of Paris.

SOCIETIES AND ACADEMIES

LONDON

Chemical Society, November 18.—Prof. H. E. Roscoe, president, in the chair.—It was announced that a ballot for the election of Fellows would take place at the next meeting (December 2).—The following papers were read:—Notes on the oxides of manganese, by Spencer Pickering. Various samples of oxides were procured and heated to various temperatures, until their weight was constant; in some cases they lost weight, in others they gained, whilst in some the weight remained constant.—On aluminium alcohols, by J. H. Gladstone and A. Tribe. When aluminium foil and iodine are heated with alcohol the latter is decomposed, two new organic aluminic compounds being formed, aluminic iodoethylate $(C_2H_5O)_2I_2Al_3$, and aluminic ethylate $Al_2(C_2H_5O)_6$. The authors have applied this reaction to other alcohols, and have thus prepared aluminic methylate, ethylate, propylate (isopropylate could not be obtained), isobutylate, amylate, cetyl, phenylate, cresylate, and thymolate.—Mr. W. H. Perkin then gave an account of the artificial production of indigo by A. Baeyer, and prepared some before the Society. The steps in the process are: toluene C_7H_8O , dichloride of benzyl $C_6H_5CHCl_2$, cinnamic acid $C_9H_8O_2$, ortho-nitrocinnamic acid $C_9H_7(NO_2)O_2$, ortho-nitrodibromohydrocinnamic acid $C_9H_7Br_2O_2(NO_2)$; by the action of caustic potash ortho-nitrophenylpropionic acid $C_9H_5(NO_2)O_2$ is formed, which on reduction in alkaline solution with grape sugar furnishes indigo $C_{16}H_{10}N_2O_2$.—On the synthetical production of new acids of the pyruvic series, by E. Moritz.—On the old alum well at Harrogate, by R. H. Davis. The author gives an analysis of the mineral constituents in the residue.—On the

absorption spectrum of ozone, by W. N. Hartley.—On the probable absorption of the solar rays by atmospheric ozone, by W. N. Hartley. The author has photographed and measured the absorption spectrum of ozone; he suggests that the shortening of the solar spectrum at the violet end is due to the presence of ozone in the atmosphere, also that the blue colour of the sky may be ascribed to the same cause.—On peppermint camphor, by M. Moriya of Tokiô. The author has studied carefully the physical characters of this substance; he has also investigated the action of chromic acid, nitric acid, and bromine thereon.

Zoological Society, November 16.—Prof. Huxley, F.R.S., vice-president, in the chair.—Mr. W. K. Parker, F.R.S., read a paper on the development of the skull in the Urodele Batrachians. Mr. Parker described the skull of the adult Gigantic Salamander (*Sieboldia maxima*), the Siren and the Menopoma, and compared their structure with that of the various stages of the skull of the common newt.—Mr. G. E. Dobson, C.M.Z.S., exhibited and made remarks on the head of a partridge (*Perdix cinerea*) with an extraordinary prolongation of the intermaxillary bones.—Mr. W. A. Forbes, F.Z.S., made some remarks on the shedding of the horns of the Prong-buck (*Antilocapra americana*), as recently observed in the specimen living in the Society's Gardens.—Mr. Harting, F.Z.S., exhibited a specimen of Bartram's Sandpiper, recently killed in Lincolnshire.—Mr. Sclater exhibited the skin of the Guinea Fowl, lately described in the Society's *Proceedings* as *Numida Elliotti*. Further investigation had induced him to believe that this bird was the same as *Numida pucherani* of Hartlaub, the inaccurate colouring of the head in Mr. Elliot's figure of that species having prevented its identification.—Mr. G. A. Boulenger read a paper on the Palearctic and Ethiopian species of *Bufo*, of which he recognised ten species: four in the Palearctic, five in the Ethiopian region, and one found in both regions.—A communication was read from Dr. Otto Finsch, C.M.Z.S., in which he gave a list of the birds of the Island of Ruk, in the Central Carolines.—A second communication from Dr. Finsch contained the descriptions of some new or little-known species of pigeons from the Caroline Islands.—A communication was read from Mr. Edgar A. Smith, containing an account of the shells of the genus *Myodora* of Gray.—A communication was read from Mr. Martin Jacoby, in which he gave the descriptions of a collection of Phytophagous Coleoptera made by Mr. Buckley at Eastern Ecuador. The collection contained a good many new and interesting species, of which a great part were not alone inhabitants of Ecuador, but had been found either in Peru or the Amazonian region.—A paper by Messrs. F. D. Godman and O. Salvin was read, in which they gave the descriptions of some supposed new species of butterflies collected by Mr. Andrew Goldie in the interior of the district of Port Moresby, New Guinea.

Physical Society, November 13.—Prof. W. G. Adams in the chair.—Mr. Bosanquet, of St. John's College Physical Laboratory, Cambridge, read a paper on the nature of the sounds which occur in the beats of consonance. From mistimed octaves and twelfths he found that when the beats of the harmonics are cleared away each beat consists entirely of variations in the intensity of the lower notes. He gave the mathematical theory of these beats, and likewise of the curves given by the harmonograph. He also described an ear-tube for using in connection with a resonator. It is difficult to get definite results with a resonator unless the passage from the latter to the ear is closed to sound. The ear tube consists of a copper pipe bent into a sickle shape to gird the face, so that the ends may enter the ears, into which they are screwed, plugging them close. The sound is led from the resonator to the middle of the bent pipe by a flexible india-rubber tube, and thence to the ears.—Mr. Brown read a paper on action at a distance. He drew attention to the fact that though Newton disbelieved in action at a distance, he did not pronounce whether the medium was material or immaterial. Mr. Brown showed that the hypothesis of a material medium was encumbered with difficulties, since, among other reasons, direct contact could not explain gravity, projection of small particles from one body to another could not explain attraction, and Lesage's theory of corpuscles (as modified by Mr. Tolver Preston) required an enormous degree of porosity in masses of matter. The nature of magnetism and vibrations was also discussed by the author.—Mr. J. Macfarlane Gray read a paper on the mechanical nature of the forces called attraction, and gave grounds for attributing them to the pressures of a universal material ether of a gaseous nature. The paper was long, and had to be in part left unread. The hypothesis held by Mr. Gray