

own; he then investigates the action of hypobromite on oxamide—74·87 per cent. of its total nitrogen is given off—and endeavours to ascertain the precise condition of the suppressed nitrogen.—Action of the halogens at high temperatures on metallic oxides, by Messrs. C. F. Cross and S. Suguira. With lead oxides oxyiodides are formed, and with the oxides and carbonates of the alkaline earth metals in the presence of oxygen periodates are produced.—On manganese tetrachloride, by Mr. W. W. Fisher. The author has studied the action of strong hydrochloric acid on the black and red oxides of manganese; brown liquids are formed containing a highly chlorinated manganese compound, probably the tetrachloride, which is readily resolved into manganous chloride and free chlorine.—On salts of nitrous oxide, by Mr. A. E. Menke. The sodium salt was obtained by fusing nitrate of soda with iron filings; its properties and reactions were studied. Diver's silver salt was prepared, and its composition confirmed.—Notes on madder colouring matters, by Messrs. E. Schunck and H. Roemer. The authors have prepared some quantity of munjistin and examined its properties, also its reactions with acetic anhydride, bromine, potash, and nitric acid. In all respects munjistin resembles purpuroranthic acid.—On the occlusion of hydrogen by copper, by Mr. G. S. Johnson. The discrepancy between the results obtained by previous experimenters is explained (1) by the fact that hydrogenised copper retains nearly all its hydrogen in vacuo at a red heat. (2) That the same metal occludes varying quantities of hydrogen. The amount occluded is in most cases sufficient to introduce a serious error in organic analysis. At a red heat copper oxide occludes carbonic acid.—On the rôle played by carbon in reducing the sulphates of the alkalis, by Mr. J. Maclear. At a high temperature with excess of carbon, sodium sulphide and carbonic oxide are formed. At a dull red heat sodium carbonate and carbonic acid are produced in addition.—On the action of ethylchlorcarbonate on some oxygenated haloid compounds of the fatty series, by Mr. O'Neil F. Kelly. The compounds employed were allyl alcoholbromide glycerindichlorhydrin and epichlorhydrin.—The Society adjourned over the recess.

PARIS

Academy of Sciences, July 8.—M. Fizeau in the chair.—The following among other papers were read:—Action of heat on alddol, by M. Wurtz. He obtains, beside crotonic aldehyde, a little ordinary aldehyde, and, in certain circumstances, a new polymer of the aldehyde, which he describes.—On malignant pustule in fowls, by MM. Pasteur, Joubert, and Chamberland. Fowls when cooled contract it easily, and they may then be completely cured by reheating.—Influence of atmospheric electricity on the nutrition of plants, by M. Grandean. His mode of experiment was to place two plants of the same species (tobacco, maize, wheat) under the same conditions as to soil, aëration, isolation, &c., but the one withdrawn from the action of atmospheric electricity by means of a Faraday's cage. The plants thus withdrawn elaborated, in equal times, 50 to 60 per cent. less of living matters than the others. Plants of small elevation above the ground are also affected by atmospheric electricity. The centesimal amount of proteic matter formed appears not to depend sensibly on this action; it is proportional to the yield. The proportion of ash is higher in plants removed from the electricity; and the proportion of water is less.—On the curves of solubility of salicylic and benzoic acids, by M. Bourgoin. Taking the temperatures for abscissa, and the quantities dissolved for ordinates, the solubility of salicylic acid in water is represented by a parabolic curve, whose convexity is towards the axis of temperatures.—On the diffusion of fire-damp in mines, by M. Coquillion. The experiments show that it diffuses very slowly from above, but rapidly upwards.—On a disease of malignant pustule form, caused by a new aerobic vibriion, by M. Toussaint. He found this vibriion in a rabbit inoculated from the blood of a horse which had died rapidly with symptoms of malignant pustule.—On *Avenardia Priei*, a giant Nemertian of the west coast of France, by M. Giard. In the state of rest it measures 1 m. to 1·20 m. in length (in extension twice or thrice as long), the width being 2 to 3 cm. It is found in hundreds in an old canal from salt marshes at Pouliguen, now transformed into a reservoir, where the seawater is renewed each tide.—Observations and experiments on the migrations of *Filaria rtylptaurites*, a parasite of cockroaches and rats, by M. Galet. The eggs produced by the parasite in the alimentary canal of the rat are thrown out with

fecal matters, and swallowed by the cockroach. The embryos, when hatched, penetrate the walls of the alimentary canal of the latter, and are encysted in fatty matter, where they await the cockroach being devoured by the rat. In the rat they now complete their cycle.—Experimental researches on the variations of volume of the cranium, and on the applications of the graphic method to solution of various anthropological problems, by M. Le Bon. A superior race contains more of voluminous crania than an inferior. Among 100 modern Parisian heads there are about eleven with a cranium of 1,700 to 1,900 cubic centimetres; in the same number of negro heads not one is found of such size. The weight of 100 masculine Parisian brains of the present varies between 1,000 and 1,700 grammes, the volume between 1,300 and 1,900 cubic centimetres. The difference between the largest and smallest brains among modern Parisians is three times that observed in the negro, and it is greater than in the Parisians' ancestors of 600 years ago. Stature has only a very slight influence on the volume of the brain. With equal stature woman has a much less heavy brain than man. Rising in the scale of civilisation, the difference in weight of brain (and so volume of cranium) between man and woman is found constantly increasing; thus the average difference of crania of the present Parisian men and women is nearly double that between the crania of the ancient Egyptian men and women. Persons having the same circumference of crania may have differences in volume of over 200 cubic centimetres; but operating on series, 1 centimetre increase of circumference corresponds to an increase of about 100 cubic centimetres in volume. Certain relations are found to exist between circumference of cranium and head, and volume and weight of brain. The cranium is always unequally developed on the two sides, without apparent relation to race or intelligence.—Automatic imitation of mountain chains on a globe according to the theory of upheaval, by M. Chancourtois. This is by the method of a caoutchouc balloon covered with wax, then allowed to contract.—Determination of the orbit of the planet 103, Hera, by M. Leveau.—On the development of the cephalo-thoracic portion of the embryo of vertebrates, by M. Cadiat.

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ERRATA.—Vol. xviii, p. 294, 2nd column, line 22 from top, read for "insolvents" "resolvents;" line 31, for "2m" read "2m". In last week's "Paris," parenthesis near beginning, for "distillation (which discoloured the fatty acids)" read "distillation (which had been resorted to to purify the fatty acids)."