treatment of the dead body," (3) M. Panas for his treatise on "affections of the eyes." Mentions and minor awards went to MM. Legendre, Broca, Vacquez, Vaudremer, Marcel Baudouin, Ferreira, Ernest Martin, Pietra Santa, Voisin, and Petit. The Barbier prize was awarded to Prof. Henri Leloir for his work on scrofulo-tuberculosis, Drs. Artault and Tscherning receiving honourable mention. The Bréant prize was adjudged to M. Arloing for his work on the bacillus of peripneumonia in cattle; the Godard prize was accorded to MM. Melville-Wassermann and Noël Hallé; the Parkin prize to MM. Behal and Choay; the Bellion prize between Dr. Lardier and MM. Beni-Barde and Materne, Dr. Renon receiving honourable mention; the Mége prize to M. Faure; the Lallemand prize to M. Gley, honourable mention to MM. Nabias and P. Janet.—In Physiology, the Montyon was divided between MM. Phisalix and Bertrand and M. Raphaël Dubois, honourable mention being given to MM. Morot, Blanc, and Philippon; the Pourat prize fell to M. Haufmann, a mention being accorded to M. Thiroloix. In Physical Geography, the Gay prize was awarded to M. Martel. General prizes—The Montyon prize (unhealthy industries) was divided between MM. Balland and Lavet; the Cuvier prize was awarded to Mr. John Murray, of the *Challenger* expedition; the Trémont prize was accorded to M. Émile Rivière; the Gegner prize to M. Paul Serret; the Delalande-Guérineau prize to the Marquis de Folin; the Jérome Ponti prize to Commandant Defforges; the Tchihatchef prize to M. Pavie; the Houllevigue prize to M. Bigourdan; the Cahours prize (1) to M. Varet and (2) M. Freundler; the Saintour prize to MM. L Deburaux and M. Dibos; the Laplace prize to M. Édouard Glasser; and the Rivot prize to MM. Glasser, Leprince-Ringuet, Henri Parent, and Le Gavrian. The programme of prizes for 1895, 1896, 1897, and 1898 is given in detail so far as yet decided.

BERLIN.

Physiological Society, November 23.—Prof. du Bois Reymond, President, in the chair.—Prof. Zuntz gave an account of his researches on the measurement of the amount of blood in circulation and the work done by the heart. For the horse he found 71 to 72 c.c. of blood per kilo body-weight per second; for the dog, as based on the consumption of oxygen, 78 c.c. These values do not correspond to the marked difference in size of the animals, but may be explained as due to the fact that the dog was experimented upon while fasting and at rest, whereas the horse was not. For a horse in complete rest the value obtained was 50 c.c. For man he estimated the value at 60 c.c. Blood-pressure falls but slightly along the arterial system, and was found to be nearly the same in the carotid and in a small branch of the facial artery. The work done by the human heart he calculated as amounting to about 20,000 kilogram-metres in the twenty-four hours. When the body is working the work done by the heart increases also, so that in the case of the horse the blood pumped out now amounted to 600 c.c. per kilo per second, or twelve times as much as during rest. The frequency of the pulse could by work be increased four-fold, and the work done by the heart to thrice its normal amount.—Dr. Cohnstein had carried out further experiments on the transudation of solutions of salts into distilled water, and using mixtures of salts as well as mixtures of colloids and crystalloids, he had observed that an increased transudation of the solids follows upon an increase of external pressure. He applied these results to explain the mode of formation of lymph, which he attributed to transudation as well as to filtration, thus opposing Heidenhain's view that it is due to a distinct secretion. He explained the action of lymphagogues, on the basis of his own experiments, as due to the power these substances possess, when mixed with an albuminous fluid, of confining the diffusion of the external fluid entirely towards the interior of the tube which contains them in solution.

AMSTERDAM.

Academy of Sciences, November 24.—Prof. Van de Sande Bakhuyzen in the chair.—Prof. J. A. C. Oudemans communicated the results obtained in solving two problems, an astronomical and a geodetical one, namely:—(1) In how long a period do stars, the velocities of which in the line of vision are known, lose or gain 0·1 magnitude? (See "Our Astronomical Column," December 13, p. 160).—Dr. Van Romburgh (Buitenzorg) has examined the essential oils of *Polygala variabilis*, H. B. K., *B. albiflora*, *Polygala oleifera*, Heckel, and *Polygala Javana*, and found them to be nearly all methylsalicylate.—Mr. Jan de Vries: on a group of plane curves. This paper contains some theorems on plane curves ϕ of the $(n + m)^{th}$ order, with m^2 double points, (Δ), forming the base of a pencil of curves of the m^t degree.

DIARY OF SOCIETIES.

LONDON.

THURSDAY, DECEMBER 27.

ROYAL INSTITUTION, at 3.—The Manufacture of an Electric Current: Prof. J. A. Fleming, F.R.S.

FRIDAY, DECEMBER 28.

ROYAL GEOGRAPHICAL SOCIETY, at 4.—Holiday Geography: Dr. H. R. Mill.

SATURDAY, DECEMBER 29.

ROYAL INSTITUTION, at 3.—The Current Working of a Chemist: Prof. J. A. Fleming, F.R.S.

SUNDAY, DECEMBER 30.

SUNDAY LECTURE SOCIETY, at 4.—The Action of Light on Bacteria and Fungi: Prof. Marshall Ward, F.R.S.

TUESDAY, JANUARY 1, 1895.

ROYAL INSTITUTION, at 3.—The Working of an Electric Current: Prof. J. A. Fleming, F.R.S.

THURSDAY, JANUARY 3.

ROYAL INSTITUTION, at 3.—The Working of an Electric Current: Prof. J. A. Fleming, F.R.S.

SATURDAY, JANUARY 5.

ROYAL INSTITUTION, at 3.—The Working of an Electric Current: Prof. J. A. Fleming, F.R.S.

CONTENTS.