of degeneration found to go together with multiplicity of homologous parts, and is illustrated by corresponding gradati n in the animal kingdom, where the myriapod is classed below the hexapod insect.—On the repeated application of Bernouilli's theorem, by M. Jules Andrade.—On problems of dynamics reducible to quadratures, by M. Paul Staeckel.—Sketch of a new theory of electrostatics, by M. Vaschy.—On some phenomena exhibited by Natterer's tubes, by M. Gouy.—Absorption of seleniuretted hydrogen by liquid selenium at high temperatures, by M. H. Pélabon. If selenium be melted in a tube containing hydrogen and then cooled, it is found to contain a large number of bubbles with a brilliant internal surface, which are absent in selenium fused in air. On reducing the mass to powder the characteristic smell of seleniuretted hydrogen is observed, and if the mass is broken up under water the latter is coloured red by the finely divided selenium liberated from the seleniuretted hydrogen by the oxygen of the air.—Organometallic combinations belonging to the aromatic series, by M. G. Perrier.—On the coccidia of the birds, by M. Alphonse Labbé.—On the Plankton of the Polar Sea, by M. G. Pouchet.—On pseudo-fecundation in the Uredinei and accompanying phenomena, by M. Sappin-Trouffy.—On two cases of parasitic castration observed in *Knautia arvensis*, Coulter, by M. Molliard.—On the sedimentary strata of Servia, by M. J. M. Lugovic.—On the eclogites of Mont Blanc, by MM. L. Duparc and L. Mrazec.—On the employment of vine leaves for feeding cattle, by M. A. Muntz. In the south of France sheep are often let into the vineyards after the vintage and allowed to strip the vines of their leaves. The vines do not appear to suffer thereby in the least. Fresh vine-leaves contain 67·0 per cent. water, 18·5 extractive matter, 3 8 nitrogenous matter, and 2·3 per cent. fatty matter. When dried, the proportions are: extractive matter, 51 per cent.; water, 15; nitrogenous matter, 11; cellulose, 8·5; and fatty matter, 5·5 per cent. In the various vineyards of southern France the amount of leaves per hectare (2·47 acres) varies from 2500 to 9500 kgr., or about the average yield of hay for the same area. Moreover, the leaves, instead of getting blown away by the wind and lost, are converted into manure by the cattle, and, in addition, the vine is much less sensitive to drought than the ordinary fodder crops.—On the effects of inoculation of human cancer or cancerous products upon animals; positive result in one case, by M. Mayet.—On the amplitude and mean duration of the extreme oscillations of the barometer at Paris, by M. Léon Descroix.—On the density and alkalinity of the waters of the Atlantic and the Mediterranean, by M. J. Y. Buchanan. Along the entire south coast of Spain the water was of the same density as the Atlantic. Eastwards of Cape Gata, where the eastward current is no longer active, the denser water of the Mediterranean set in. The mean ratio of salinity and alkalinity was 0·50 for the Atlantic, and 0·4875 for the Mediterranean, the difference being probably due to the abundance of calcareous rocks on the latter.

AMSTERDAM.

Royal Academy of Sciences, May 27.—Prof. van de Sande Bakhuysen in the chair.—Mr. Hubrecht gave a description of phagocytic and vasifactive processes by which the trophoblast of *Tupaja javanica* attacks the maternal uterine epithelium and prepares congested surfaces against which the area vasculosa and afterwards the allantois are applied. The placenta of Tupaja is double, and situated right and left of the fœtus. The trophoblast of Tupaja was furthermore compared to that of Sorex and of Erinaceus, in all of which it displays a considerable degree of activity. It was more rigorously defined as being the epiblast of the mammalian blastocyst, after deduction of what is intended for the formation of the embryo and for the internal coating of the amnion. In conclusion, certain phylogenetic speculations concerning the trophoblast were brought forward.—Mr. Schoute exhibited three new thread-models of developables related to higher algebraical equations. The first is the discriminant of the general cubic $u^3 + 3xu^2 + 3yu + z = 0$. It divides space into two parts, corresponding to points with 3 or 1 real roots. The ordinary twisted cubic forms its cuspidal edge. The discussion of the number of real roots situated between two given limits is facilitated by means of a certain tetrahedron. The second surface corresponds to the quartic $u^4 + 6xu^2 + 4yu + z = 0$. It divides space into three parts, containing points with 4, 2, or 0 real roots. By planes perpendicular to the x-axis it is cut in rational quartics with two cusps and one node. It possesses a parabolic nodal curve. And the third model realises the surface corresponding to the sextic $u^6 - 15u^4 + 15xu^2 + 6yu + z = 0$. It divides space into four parts, with points admitting 6, 4, 2, or 0 real roots. Any plane perpendicular to the x-axis meets it in a rational sextic curve with four cusps and six nodes. The cusps of the cuspidal edge are very remarkable points on this surface. In general the developable corresponding to a likewise mutilated equation of the nth order with three coefficients x, y, z, will show rational sections of the nth order with the planes perpendicular to the x axis, admitting $n - 2$ cusps and $\frac{1}{2}(n - 2)(n - 3)$ nodes, &c.—Mr. van der Waals gave a formula for the law of molecular force. By putting

$$-f\frac{e^{-\frac{r}{\lambda}}}{r}$$

for the potential of two material points, all the known laws of molecular action may be deduced. In this formula λ is a line equal to the quotient of La Place's H and K. This law may be explained by supposing (1) that the action of the point itself varies inversely as the square of the distance, (2) that the universal medium gradually does absorb the lines of force.

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CONTENTS.