upper part of a tree opening later than those below ; and in any case the influence of age on foliation is nil, or small, compared with the influences of climate.—M. Ebray contributes a paper on the impossibility of establishing the limits of geological formations, and discusses some other geological principles.—The July number is mainly occupied with a *coup d'œil* over the principal publications on vegetable physiology in 1875, by M. Micheli.—M. Wiedemann communicates two short notes on the specific heat of gases, and on the changes of the co-efficients of friction of gases with the temperature.—M. Hagenbach, in the August number, studies the equilibrium of a sphere on a jet of water. There are two cases of the phenomena. In one of these, the jet, divided into drops, strikes the sphere laterally at about 50° from the lowest point, and makes it turn rapidly about a horizontal axis. The sphere also often moves round the jet, sometimes in one direction, sometimes in the other. The water follows the sphere in its movement, flies off in a series of tangents, some of it, however, returning to the point of initial impact. The other case is that in which the sphere receives a homogeneous jet at the same point, and does not rotate about it, but passes to-and-fro across the jet between the two corresponding positions. It turns about the horizontal axis, now in one direction, now in the other. M. Hagenbach gives an explanation of these results.—M. Schmankewitsch replies to some criticism of his researches on the changes of *Artemia salina* in water of varying saltness.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, September 18.—Vice-Admiral Paris in the chair.—The following papers were read :—Examination of observations presented at various epochs regarding the transit of an intra-mercurial planet over the disc of the sun, by M. Leverrier. He cites eleven of these, comprised between 1761 and 1820 (the paper to be continued).—Theorems relating to systems of three segments having a constant product, by M. Chasles.—Note on the period of the exponential e^z, by M. Yvon Villarceau.—Lighting by means of products extracted from resinous trees, by M. Guillemare. Distillation of oil of turpentine resting on an equal volume of slightly alkaline water, removal of it by steam, and direct and prolonged action of concentrated solutions of alkaline carbonates on oils of resin, produces complete separation of the colophony and naphthaline these liquids contain ; this effect is proved if ammonia no longer affects their limpidity. To utilise the large percentage of carbon for light, two lamelliform currents are arranged round the wick ; the exterior, by means of a cone 8 centimetres in height, the other, interior, with a movable conical nipple. The draught is effected with a glass chimney, which has to be ground at the base, so intense is the light. This light is recommended for ships' lanterns and photo-telegraphic apparatus.—On a mode of treatment of phylloxerised vines with lime, by M. Pignede.—M. Lucan presented an instrument employed by the negroes in Congo for capturing serpents. This is a tube, the walls of which are made of pieces of reed interlaced ; when the serpent enters they contract through the very efforts which he makes to escape.—On the capture of rattlesnakes, and the supposed association of these serpents with a small owl and a small dormouse, by M. Trécul. Travelling, in 1848, in the region west of Arkansas, he caught snakes by passing over them, when erect, a loop with running knot attached to his ramrod ; they remained quite straight and were easily killed. The "villages of little dogs," or dormice, are sometimes pretty large, *e.g.*, half a kilometre in diameter. One was in a fertile district covered with high herbs, but the ground of the village was entirely denuded by the animals, and little earthworks thrown up, with holes in them, and communicating together. The dormouse takes a survey from the top of these eminences, with only his head thrust out. In coming out, which they do most cautiously, they give a small sharp bark. In another village the author saw a little owl issue from one of the burrows, which was also evidently frequented by dormice ; and in another burrow was a rattlesnake, but this burrow had evidently been long deserted by the other animals.—Symbolic formula giving the degree of the position of points, the distances of which from given algebraic curves verify a given relation, by M. Fouret.—On the physical properties of gallium, by M. Lecoq de Boisbaudran. This subject is noted elsewhere in connection with the *Journal de Physique*. We here note that the density the author formerly obtained (4·7 at 15°) was different from that to which M. Mendeleef's theoretical views pointed (5·9), for a body between indium and aluminium to which gallium otherwise closely corresponded. Having lately, however, treated some gallium by keeping it half an hour at 60°–70° in nitric acid, diluted with its volume of water, washed, heated strongly, then solidified it in dry air, he obtained the number 5·956, which agrees with that of M. Mendeleef.—Anatomical and morphological researches on the nervous system of hymenopterous insects, by M. Brandt. He studies the metamorphoses which occur in the ganglionic chain in passage from the larval to the adult state.—Experiments and observations on vitreous rocks, by M. Meunier. He concludes (1) That vitreous rocks do not represent the product of a vitrification of crystalline rocks, but the latter are derived from the former by way of devitrification. (2) The direct devitrification of obsidian, gallinace, retinite, &c., cannot be produced, and the presence of gases and vapours in the vitreous rocks seems to be the opposing obstacle. (3) This devitrification becomes possible when the rocks, by fusion, are freed from their volatile elements.

ROME

R. Accademia dei Lincei, June 4.—On the specific rotatory power of asparagine, by M. Cossa. He extended the researches of Pasteur on this subject, varying the proportion of asparagine to the solvent and experimenting with other acid solutions. He refers the specific rotatory power (which, for most of the liquids experimented with, might be considered as a constant) to the yellow rays of the spectrum.—On the rotatory power of santonic, metasantonic, and hydrosantonic acid in various solvents, by M. Cannizzaro.—On the electrical state of bodies, by M. Volpicelli. The electricity manifested in bodies through the condenser is to be attributed to the electricity of the atmosphere, since it follows in quantity and quality the phases of that.—M. Volpicelli replied to memoir of M. Pisati, entitled "Defence of the Old Theory of Electrostatic Induction ;" also to a note by M. Cantoni on a pretended reform of the theory of electrostatic induction : also to a letter of Maxwell's in NATURE (vol. xiv. p. 27).—Studies on microscopic images of medullary nerve-fibres, by M. Boll. He studies the alterations produced by a variety of chemical agents—sodic chloride, osmic acid, glycerine, ether, chloroform, &c. He finds that the myaline does not form a continuous sheath within the axis cylinder. The medullary sheath is composed of a series of segments placed one above another (in the sciatic nerve of a frog he counted twenty to twenty-five of these segments).—Duration of vitality of the *macula germinativa*, by M. Colasanti. Experimenting with hen's eggs, he found that in the first twenty days after the egg is deposited, development of a chicken may take place, but after that epoch development is not the rule but the exception. But the germinal spots which did not produce chickens always showed some development, though incomplete. This shows that the evolution is not the result of a force which exists or does not exist in a germ, but rather of a force subjected to quantitative modification, and which expires gradually.

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