

SCIENTIFIC SERIALS

THE *Quarterly Journal of Microscopical Science* contains several papers of importance. The first is by Dr. Klein, entitled "Observations on the Early Development of the Common Trout (*Salmo fario*)," in which the condition of the blastoderm between the third and thirteenth day is described. The subject is minutely treated, and the bibliography is very complete.—Mr. John Priestley gives a *résumé* of recent researches on the nuclei of animal and vegetable cells, and especially of ova, and afterwards collates the various statements, indicating their points of divergence.—The investigations of Prof. E. Auerbach and Strasburger, of Dr. Oscar Hertwig and Van Beneden, are those discussed.—M. Edouard Van Beneden's valuable "Contributions to the History of the Germinal Vesicle, and of the first Embryonic Nucleus" contains much of special interest with reference to the relation of the germinal vesicle and the first cleavage nucleus of the egg, especially with reference to the different results arrived at by the author in his study of the ovum of the rabbit, and M. Hertwig's investigations on the echinoderm *Toxopneustes lividus*.—Mr. H. R. Octavius Sankey gives a new method for examining the structure of the brain, and reviews some points in the histology of the cerebellum. The dye employed for the staining is aniline blue-black, in which sections of fresh brain should remain twelve hours or so, and afterwards be dried.—Dr. James Foulis gives a lengthy memoir on the development of the ova and structure of the ovary in man and other mammalia. Three plates accompany his paper. The author mainly devotes himself in this communication to the description of the appearances in the ovaries of young kittens, and of the human fetus, with the object of demonstrating, in particular, that whereas the eggs are derived from the germ epithelium, the nutrient cells of the ovum, or the follicular epithelial cells, are derived from the cells of the stroma of the ovary.—Dr. Carpenter, in a paper on the genus *Astrorhiza* of Sandahl, lately described as *Haeckelina*, by Dr. Bessels, reintroduces the earlier account of the genus, and figures it.

Journal of Botany.—Among the more important articles on descriptive and systematic botany in this periodical since the commencement of the current year are a description of *Rumex rupestris*, Le Gall, as a British plant, by Dr. Trimen, with a plate; a description of four new species of *Fuchsia* from South America, by Mr. Hemsley, and a conspectus of the genus *Glycosmis*, by Mr. Kurz, with two plates. Mr. Sorby contributes a paper on the colouring matter associated with chlorophyll, in which he combats some of the conclusions of Pringsheim, and Prof. Church some further notes on plant-chemistry, with analyses of *Lactuca salivra*, *Chondrus crispus*, in which the ash reaches the very large amount of 14.15 per cent. of the air-dry plant, and *Nasturtium officinale*, and of the ash of the bud-scales of the beech, and of the female flowers of the elm. In the April number is the commencement of Prof. De Bary's very important report of researches into the nature of the potato-fungus, *Phytophthora infestans*.

Although the articles in the *Scottish Naturalist* are mainly of local interest, two notable exceptions are furnished by those on "Animal Psychosis," by the Rev. J. Wardrop, and "Illustrations of Animal Reason," by Dr. Lauder Lindsay, portions of which occur in the numbers for January and April, both of which we hope to see reprinted in a form to reach a larger public. There are a large number of notes on the zoology of Scotland, and Mr. A. Sturrock records an addition to the flora of that country in the discovery, in Loch Cluny, Perthshire, of *Najas flexilis*, hitherto confined to Ireland as far as the British Islands are concerned. Dr. Buchanan White and Dr. Sharp continue their lists of the Lepidoptera and Coleoptera of Scotland respectively.

Poggendorff's Annalen der Physik und Chemie, No. 1, 1876.—In Regnault's experiments on the specific heat of gases, it was necessary that the spiral through which the gas streamed should have considerable length, so that the gas might fully take the temperature of the heating vessel, and fully yield up its heat in the calorimeter. A correspondingly large size of vessel and a large quantity of gas were required. In a new investigation by M. Wiedemann, here described, the chief object was to diminish the calorimeter, and yet not compromise the yield of heat of the gas, that is, to afford the heated gas as great a surface in as small a space as possible. His heating vessel was a copper cylinder stuffed with copper turnings and enclosed in another

copper vessel containing water or paraffin to be heated. In the calorimeter the gas passed successively through three vertical and connected silver pipes filled with silver turnings, and gave its heat to the surrounding liquid. The author shows that his method is not behind that of Regnault in accuracy, and as the quantity of water was only a tenth of that which Regnault used, only a tenth part of the gas was required, to obtain as great elevation of temperature. Thus extensive results could be had in shorter time. The tabulated numbers for the seven gases examined do not materially differ from those of Regnault.—A paper by Dr. Dvorak follows, describing many interesting experiments on acoustic attraction and repulsion. He studies the case of rods in transverse vibration; also the action of a screen in a sound wave; acoustic attraction and repulsion of resonance; also that in liquids and the phenomena in air columns thrown into continuous vibrations.—The observations of M. Plateau on liquid films are extended by Dr. Sondhaus, who endeavoured to determine the extent to which different liquids could be stretched in films in wire rings, observed such lamellæ in closed vessels excluding external disturbances, measured with a balance their tension, and, with a manometer, the pressure of bubbles on the enclosed air; he also measured the weight of such lamellæ and bubbles, whence their thickness might be inferred. With a simple contrivance, consisting of a thin wire bent horizontally to an angle and a straight wire placed across and drawn gradually away from the angle, it may be shown that all liquids can be stretched in lamellæ, and different liquids may be compared in this respect. But Dr. Sondhaus prefers the circular wire rings. He compares (as to size) the films got from forty-six different liquids. Among some facts relating to durability of films, we note that one film from a guillaja decoction, to which a little glycerine had been added, was produced in a vessel on 1st Sept., 1872, and lasted till 11th March, 1873, or over half a year.—M. Groth communicates the results of a study of the elasticity of rock salt by observation of the velocity of sound in different directions in it, a method more easily carried out than that of M. Voigt, who measured the elastic bending of rods of the substance. The researches of both leave no doubt that in regular crystals the coefficient of elasticity, and therewith the velocity of sound, is a function of the direction; and in accordance with Neumann's theory, they vary symmetrically with reference to the planes of symmetry of the crystal. A geometrical plane of symmetry of a crystal is at the same time a physical plane of symmetry. A crystal may be defined as a homogeneous solid body whose elasticity varies with the direction.—We further note the first part of a valuable paper by M. Grotian, on the constants of friction of some salt solutions and their relations to galvanic conductivity; and some observations of M. Edlund on the connection of galvanic induction with electro-dynamic phenomena; also, extracted papers on the occurrence of nitrogenous iron among the fumarole products of Mount Etna, and on the thermo-electric properties of some calcareous spar, beryll, idocrase, and apophyllite.

Revue des Sciences Naturelles, December, 1875.—The most interesting original observations recorded in this number are contained in a short paper by D. A. Godron, on fertilisation of flowers by Hymenoptera. Near Nancy it is found that the hybrid produced by the fertilisation of *Primula grandiflora* with pollen of *P. officinalis* results from the intervention of bees, but the converse hybrid does not occur. M. Godron published an account of this in 1844. The reason for the non-occurrence of the second hybrid is that *P. grandiflora* flowers earlier in this locality than *P. officinalis*. M. Godron was able to produce the hybrid *P. grandiflora-officinalis* artificially, but never saw it as a natural product till March, 1874, when it was brought to him from a locality two kilometres distant from the first. On investigation it was found that only *P. officinalis* grew at this spot, and that owing to situation and surroundings it flowered much earlier than in the other locality; but the hybridisation could only be effected by the carrying of the pollen of *P. grandiflora* two kilometres by bees.—The summaries of French memoirs on science are full and valuable; foreign summaries of moderate extent are likewise given.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, May 4.—"On the Absorption-Spectra of Bromine and Iodine Monochloride," by H. E. Roscoe, F.R.S., and T. E. Thorpe.