

SCIENTIFIC SERIAL.

American Journal of Science, August.—Rowland's new method for measuring electric absorption and losses of energy due to hysteresis and Foucault currents, and on the detection of short circuits in coils, by L. M. Potts. Rowland's method, in which the condenser is placed in one arm of a Wheatstone bridge, together with the fixed coils of an electro-dynamometer, while the movable coil is mounted in the cross connection, is practically useful. The electric absorption always acts as a resistance in series with a capacity. The resistance is independent of the current, but the temperature has a decided effect on both.—Some new Jurassic vertebrates, by W. C. Knight. The author describes two new species, called *Plesiosaurus shirleyensis* and *Cimoliosaurus laramiensis* respectively. They are in the collection of the University of Wyoming.—Carnotite and associated vanadiferous minerals in Western Colorado, by W. F. Hillebrand and F. Leslie Ransome. Carnotite is probably a mixture of minerals of which analysis fails to reveal the exact nature. Instead of being the pure uranyl-potassium vanadate, it is to a large extent made up of calcium and barium compounds. Near Placerville, Colorado, certain sandstones show a green colouring and cementing material which contains nearly 13 per cent. of V_2O_5 . It is intended to work this sandstone for vanadium.—Restoration of *Stylonurus Lacoanus*, a giant arthropod from the Upper Devonian of the United States, by C. E. Beecher. The arthropod described takes equal rank with the Giant Spider Crab of Japan and the great "Seraphim" (*Pterygotus anglicus*). The animal has a length of nearly 5 feet, and with the legs extended it would measure about 8 feet.—Iodometric estimation of arsenic acid, by F. A. Gooch and Julia C. Morris.—Further notes on pre-glacial drainage in Michigan, by E. H. Mudge. The author discusses the present and former levels in the vicinity of the village of Saranac.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 20.—M. Maurice Lévy in the chair.—New observations on the high valley of Dordogne, by M. A. Michel-Lévy. Owing to the cuttings recently made for the railway between Queuille and Mont-Dore, some new facts on the geology of this valley have been discovered. On the left flank of the valley the deposit of labradorite can be traced up to the Capucin. More to the south an outcrop of trachyte, rich in black mica and amphibole, can be followed up to near the ravines of Riveaugrand. The right flank of the Mont-Dore valley shows clearly the prolongation of the lower andesite of the Grand Cascade. A trachytic dyke has also been recently discovered by M. Paul Gautier in the first ravine west of Compiassade, which is rich in granitic inclusions.—On the existence of *Ceratitis capitata*, var. *hispanica*, in the neighbourhood of Paris, by M. Alfred Giard. During the present spring a large proportion of the apricots at Courbevoie, near Paris, fell off the trees in a green state, and the remainder, although apparently exceptionally fine when ripe, were found to be honey-combed with larvæ. This larvæ were found, on development, to give rise to *Ceratitis capitata*, a species that has already been found to be very destructive to many kinds of fruit in the Azores, at Madeira, the Cape of Good Hope, Algeria and Malta. This is its first appearance near Paris, possibly owing to an exceptionally favourable spring. Means for combating this scourge are suggested, as it is of the first importance that it should not become acclimatised in Paris.—Observations on shooting stars made from August 11 to August 14 at the Observatory of Paris, by Mlle. D. Klumpke. About thirty meteors were observed during four nights, of which some came from Perseus and others from the polar region. The former were white, short and very rapid, the latter luminous and coloured.—Observations of the sun made at the Observatory of Lyons with the Brunner equatorial during the first quarter of 1900, by M. J. Guillaume. The results are given in three tables showing the number of spots, their distribution in latitude, and the distribution of faculæ in latitude.—On the composition of the air in a vertical section, and on the composition of the upper layers of the terrestrial atmosphere, by M. G. Hinrichs. By applying a formula of Laplace, the composition of the air is deduced at different levels. From these calculations, carbon dioxide would disappear at 30,000 metres, argon at 60,000 metres. At 100,000

metres the air would consist of oxygen 0.3, nitrogen 4.6 and hydrogen 95.1 per cent.—On the dielectric cohesion of gases, by M. Bouty. When a gas contained in an insulating vessel is placed in a constant electric field, there is a certain critical pressure above which the gas acts as a dielectric, and below which the discharge passes. The relation between this critical pressure (p) and the field (γ volts per centimetre) has been studied for three gases—hydrogen, air and carbon dioxide. For low pressures the relation found is $\gamma = a + \frac{c^2}{p^2}$. For higher pressures the curve is practically coincident with the asymptote, $\gamma = a + b(p + \pi)$.—On the extraction of oxygen from the air by solution at a low temperature, by M. Georges Claude. Various solvents for air have been tried at low temperatures in the hope of discovering a liquid in which the difference of solubility of the two gases would be very marked. The experiments, however, were unsuccessful, as it was found that at low temperatures the solubility of the nitrogen increased, so that starting with a mixture containing 65 per cent. of oxygen, after solution and boiling out, the amount of oxygen was practically unchanged, amounting in no case to more than 70 per cent.—On the pyrogallol-sulphonic acids, by M. Marcel Delage.—On the dextrins of saccharification, by M. P. Petit. The results obtained by the action of diastase upon starch were very divergent, depending upon the age of the diastase and the conditions under which it had been preserved.—On the use of sodium peroxide for making wholesome wells containing carbonic acid, by M. E. Derennes. The use of milk of lime for the absorption of dangerous amounts of carbonic acid contained at the bottom of a well has the disadvantage that the residual gas may consist almost entirely of nitrogen. The substitution of sodium peroxide for lime would ensure as much oxygen being given off as carbon dioxide absorbed.

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