

SCIENTIFIC SERIALS

*American Journal of Science and Arts*, August.—Discovery of oxygen in the sun by photography, and a new theory of the solar spectrum (with plate), by H. Draper.—Action of certain organic substances in increasing the sensitiveness of silver haloids, by M. C. Lea.—Critical periods in the history of the earth and their relation to evolution, by J. Le Conte.—Notes on the internal and external structure of palæozoic crinoids, by C. Wachsmuth.—Chemical composition of Hatchettolite and Samarskite, by O. D. Allen.—Relations of the geology of Vermont to that of Berkshire, by J. D. Dana.—A proposed new method in solar spectrum analysis, by S. P. Langley.—Note on the exactitude of the French normal fork, by R. König.

*Annalen der Physik und Chemie*, No. 7, 1877.—The polarisation of refracted light, by M. Fröhlich.—Note on the dispersion-curve of certain media with more than one absorption-band, by M. Ketteler.—On a new photometer, by M. Glan.—On electric induction on non-conducting solid bodies, by M. Willner.—On the electric behaviour of metals immersed in water or salt solutions in radiation from sun or lamplight, by M. Hankel.—Note on a change in the direction of the polarisation-current after passage of alternately opposite galvanic currents, by M. Hankel.—On vapour tensions of homologous series and Kopp's law of constant differences of boiling-point, by M. Winkelmann.—On the absorption of gases by salt solutions, by Mr. Mackenzie.—On the theory of the action of cylinder spirals with variable number of windings, by M. Wallentin.—On diamonds, by M. von Baumhauer.—On the history of the invention of the telescope, by M. Wolf.—Note relating to natural science among the Arabs, by M. Wiedemann.

No. 8.—Experimental investigation of weakly magnetic bodies, by M. Silow.—On a general proposition with reference to electric induction, by M. Clausius.—On the electric conductivity of electrolytes, by M. Berggren.—Determination of the electric conductivity of liquids with constant current, by M. Tollinger.—On the so-called unipolarity of flame conduction, and on truly unipolar electric phenomena, by M. Herwig.—Further remarks on the action of cylinder-spirals with variable number of windings, by M. Wallentin.—Contributions to an adequate determination of the plane of vibration of polarised light, by M. Ketteler.—On the specific heat of water according to experiments of M. von Münchhausen, by M. Willner.—On the physical nature of articulate sounds, by Mr. Grassmann.—On a convenient form of the mercury-pump on Sprengel's principle, by M. Hüfner.—Bunsen in a tellurium mineral, by M. Krenner.

*Journal de Physique*, August.—Researches on photography, by M. Angot.—On attractive and repulsive forces, and the action of the medium, by M. Jannery.—New electric lamp with oblique circular rheophores, by M. Reynier.—Polarising microscope, by M. Nodot.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, September 3.—M. Peligot in the chair.—M. Villarceau gave an outline of his and M. De Magnac's new work, entitled "Nouvelle navigation astronomique."—The following papers were also read:—On the combinations of chlorhydrate of ammonia with the chlorides of potassium and of sodium (extract from memoir), by M. Chevreul. He was led to study these from having found in guano cubical crystals formed of chloride of sodium and chlorhydrate of ammonia; also a similar compound in a piece of sealskin taken from this guano. Some peculiarities in crystallisation are mentioned.—Considerations on the interpretation which should be given to the conditions of maxima relative to calculations of electro-magnetic forces, by M. Du Moncel (a reply to M. Raynaud).—On the discovery of a terrestrial plant in the middle part of the Silurian system, by M. De Saporta. He was shown at Caen a plate from the slaty schists of Angers, presenting evident traces of a large fern. The vegetable substance had been replaced by sulphide of iron, and much of the contour was interrupted and lacerated as if the plant had been long under water. The fern appears to rank among the Neuropteridæ; it recalls *Cyclopteris* and *Taleopteris*, observed in the Upper Devonian. The Silurian system in Europe having only furnished, hitherto (of plants) alge, and of somewhat problematic nature, this fern may be regarded as the oldest terrestrial plant yet found on our continent; and it indicates a floral

already comparatively rich and complex, therefore distant probably from the first origin of plants. M. Lesquereux has also, quite lately, found terrestrial plants in the Silurian system in America (at the base), and M. De Saporta assigns priority in this discovery to him.—Researches on the phosphoric acid of arable lands (extract from memoir), by MM. Corenwinder and Contamine. In forty-eight hours a saturated solution of carbonic acid sufficed to render assimilable a quantity of phosphoric acid greater than that furnished to the soil by introducing 1,000 kilogrammes of super-phosphate. The phosphates disseminated in arable land are not in the same degree soluble in water charged with carbonic acid. Their capacity depends on their molecular state and the source whence they come. The phosphates pre-existing in liquid manures are probably more attackable than others.—On the invariability of the great axes of planetary orbits, by M. Haretu. This invariability, which several geometers, and Poisson himself, believed to be quite general, exists only for the first and second powers of the masses.—On an insect destructive to phylloxera, by M. Laliman. This larva, or worm, which (the author says) might be called the *cannibal* of phylloxera, devours the latter most voraciously; in ten minutes he saw ninety-five disappear. He found it in the interstices or tissue of galls on the leaves of the vine.—Remarks on M. Laliman's communication, by M. Balbiani. The observation is not wholly new; the larva is that of a dipterous insect belonging to the genus *Syrphus*, or an allied one. All the larvæ of Syrphi are aphidiphagous; their habits have been fully studied by M. Reaumur, who remarked their voracity and the indifference of taste they showed for all kinds of pucerons. M. Balbiani recommends a continuation of these researches, and cultivation of the insect.—Invasion by phylloxera of the vineyards in the environs of Vendome, by M. Prillieux.—Satellite of Mars observed at the observatory of Paris, by MM. Paul and Prosper Henry.—New stellar system in rapid proper motion, by M. Flammarion. This is perhaps still more important than the former; for it consists of two couples of stars carried along in space by the same movement of translation, and with a velocity much above the average of ordinary proper motions. The two couples are those of 17  $\chi$  Cygnus and 2576  $\Sigma$ . The motion is almost perpendicular to the direction of that of the sun in space.—On the wind system in the region of the Algerian chotts, by M. Angot.—Study of some derivatives of ethylvinyle, by M. Nevolé.—On a mode of transmission of the disease ergot, by M. Duplessis. The ergot appeared in a part only of a field of winter wheat. The previous crop having been a weeded crop and the field having borne, before that, trefoil and vetch (plants in which ergot has not hitherto been observed), M. Duplessis infers that the ergot must have been imported by a natural vehicle; probably the waters of the Loire, which overflowed this spring, brought it from some fields further up, which were affected by the disease last year.

CONTENTS

PAGE

STAR OR NEBULA? By J. NORMAN LOCKYER, F.R.S. . . . .	413
THE GLACIAL GEOLOGY OF ORKNEY AND SHETLAND. By Prof. ARCH. GEIKIE, F.R.S. . . . .	414
PENNINGTON'S "BARROWS OF DERBYSHIRE" . . . . .	416
OUR BOOK SHELF:—	
Miller's "Mathematical Questions, with their Solutions, from the <i>Educational Times</i> " . . . . .	417
Huetlin's "Cronicon Cientifico Popular" . . . . .	418
Mayr's "Naturkräfte."—A. G. B. . . . .	418
LETTERS TO THE EDITOR:—	
Glacial Geology of Orkney and Shetland.—S. LAING, M.P. . . . .	418
Meteorological Effects of Eclipses.—Dr. J. J. WILD . . . . .	419
The Development of Batrachians.—P. L. S. . . . .	420
Notes on the North-East Australian Monotremata.—W. E. A. . . . .	420
On Time.—Prof. V. A. JULIUS . . . . .	420
A NEW REGISTERING THERMOMETER. By M. GASTON TISSANDIER (With Illustration) . . . . .	421
NEW ELECTRIC LIGHTS. By J. MUNRO (With Illustrations) . . . . .	422
REDUCTION OF THE HEIGHT OF WAVES BY LATERAL DEFLECTION UNDER LEE OF BREAKWATERS. By THOMAS STEVENSON, F.R.S.E. (With Illustration) . . . . .	423
A RUSSIAN ACCOUNT OF SCIENTIFIC PROGRESS IN INDIA . . . . .	425
METEOROLOGY AND THE INDIAN FAMINE. By ALEXANDER BUCHAN . . . . .	425
THE IRON AND STEEL INSTITUTE . . . . .	426
OUR ASTRONOMICAL COLUMN:—	
The Outer Satellite of Mars . . . . .	427
Variable Stars . . . . .	428
Minor Planets . . . . .	428
NOTES . . . . .	428
THERMOMETRIC OBSERVATIONS MADE AT RAMA ON THE COAST OF LABRADOR . . . . .	431
UNIVERSITY AND EDUCATIONAL INTELLIGENCE . . . . .	431
SCIENTIFIC SERIALS . . . . .	432
SOCIETIES AND ACADEMIES . . . . .	432