

ammonia to sulphate of magnesia, &c.?"—The President gave several experimental illustrations of the time required for double decomposition. He showed that ferric chloride and sulphocyanide of potassium react instantly, that citrate of iron and meconic acid, chloride of platinum and iodide of potassium, react gradually. The rate of change really depends on the degree of rapidity of the inter-diffusion of the salts. It is also affected to a very great extent by temperature. The following numbers illustrate the rate at which sulphate of strontium is deposited on the addition of sulphate of calcium to a solution of nitrate of strontium. :—

Cloud	in	4 minutes
0.071 grms.	20	20
0.130	60	60
0.303	110	110
0.497	170	170
0.659	1270	1270

The total amount of salt which could be formed being 1.5 grms.

Astronomical Society, June 11.—Prof. Adams, president, in the chair.—Mr. Lecky explained the use of two ancient instruments he had given to the Society. The smaller one was known as a night dial; it was used about the end of the sixteenth century for finding the time at night by the position of the pointers of the Great Bear. The observer stood with his face to the north, and the instrument was held in one hand, so that a line upon it was by estimation vertical to the horizon; and with the other a moveable arm like a clock hand was turned until it was parallel to the direction of the pointers. The time was then read upon the circumference of a boxwood circle, which had to be set afresh for every night of the year. The other instrument was a Backstaff, which was used at sea until the invention of the sextant for determining the sun's altitude. The observer in using it stood with his back to the sun (whence its name), and he measured the arc between the sun's place and the opposite horizon through the zenith. The instrument which was in use before this was a very simple contrivance, being merely a pole along which a moveable bar at right-angles was shifted, until the cross-bar subtended the same angle when looked at by the observer with his eye at the end of the pole as the sun's altitude. Such contrivances were called Forestaffs, and were in use at sea until 1591, when Capt. Davis invented the Backstaff.—Mr. Marth exhibited a drawing of the orbits of the satellites of Saturn as they will be seen from the earth about the middle of August next, when there will be a conjunction of the satellite Iapetus with the ring and ball of Saturn. Mr. Marth was anxious that observations of this conjunction should be made by the possessors of large telescopes, in order to afford data for the improvement of the theory of the satellites of Saturn.—A paper was read by Mr. Knobel on an instrument for determining the magnitudes of stars.—Mr. Christie said that the probable error in determining the magnitude of a star with his photometer amounted to only the twentieth of a magnitude, but that the probable error varied for stars of different colours, owing to the effect of contrast with the light of the sky, which caused a red star to be more easily distinguished when its light was diminished than a star with a blue tinge.

Anthropological Institute, June 8.—Col. A. Lane-Fox, president, in the chair.—Capt. Richard F. Burton, H.M. Consul at Trieste, read two papers on Ancient Remains in Dalmatia, viz., "The Long Wall of Salona" and "The ruined cities of Pharia and Gelsa di Lesina." Salona was the Roman metropolis of Dalmatia, of which southernmost province of Austria, Spalato was at present the natural, and Zara the artificial and political capital. The "long wall" was of doubtful and debated origin, and a reference to numerous ancient and a few modern writers on it was made to show the obscurity in which it still remains. The author gave an account of his explorations, with detailed measurements of the ancient structure, called by some "Cyclopean," and especially pointed out the great variety of stone dressing it presented, which would afford valuable evidence in determining the style and perhaps the date of the work. His conviction that the long wall of Salona was Greek and pre-Roman rested very much upon the fact that similar constructions exist in the neighbourhood. In the island of Lesina the two ruins visited and described by Capt. Burton presented a remarkable resemblance, amounting almost to identity, to the long wall of Salona, and suggested that they were all the work of a single people, and that people not the barbarous Illyrians, but the comparatively civilised Greeks. Only two flint implements had been found, and those

were discovered at Salona, near Spalato. The exploration of the Dalmatian Islands was attended with much difficulty; the scarcity of water was an evil to be met, and a Slavic guide was necessary unless the traveller could himself speak Slavic, for the inhabitants all belong to that race. The islands never having been previously explored (as far as the author was aware) by Englishmen, there was a large field of research for the antiquarian as well as the more general anthropologist.

PARIS

Academy of Sciences, June 7.—M. Frémy in the chair.—The following papers were read :—On the different effects produced by the same temperature upon the same species of plants, in the north and in the south, by M. A. de Candolle.—Researches on magnetic rotatory polarisation, by M. Henri Becquerel.—On a new method and a new instrument for telemetry (quick measurement of distances), by M. Giraud Teulon.—On the transformation of the camphor of *Laurinae* into camphene, and reciprocally of the camphenes into camphor, by M. J. Riban.—A note, by M. J. Ponomareff, on thiammeline, a new derivative of persulphocyanogen.—On the dissociation of sulphocarbonate of potassium in the presence of ammonia salts, by M. Rommier.—On the theory of revolution surfaces which, by way of deformation, can be superposed on one another, and each on itself in all its parts, by M. F. Reech.—Communications on Phylloxera, by several gentlemen.—Several papers of minor interest, competing for the prize of Medicine and Surgery.—On the geographical position of the island of St. Paul, by M. Mouchez; he finds the latitude to be $38^{\circ} 42' 50'' 796$ S. (with a probable error of $0'' 03$), and the longitude, $5^{\text{h.}} 0^{\text{m.}} 49^{\text{s.}}$ (probable error, $4^{\text{s.}}$).—On fluorene and the alcohol derived from the same, by M. Ph. Barbier.—Researches on taurine, by M. R. Engel.—On the bibromide of angelic acid, by M. E. Demarcay.—On three observations of accidents from lightning, by M. Passot.—Analysis of the mineral coal of the Suderoe Island (one of the Faroes), by MM. Bechin and Ch. Mène.—Remarks by M. Tresca, on a projected atmospheric post between Paris and Versailles.—A note by M. Emm. Liais, on the parallax of the sun.—M. Vibraye then drew the Academy's attention to the apparition of a destructive hemipterous insect in the vineyards of the Loir et Cher Department. The insect is very similar to *Phytocoris gothicus*.—Remarks by M. J. de Cossigny, on waterspouts.—On a new propeller of steamships, by M. E. Lehman.

BOOKS AND PAMPHLETS RECEIVED

BRITISH.—Encyclopædia Britannica, 9th edit., vol. ii. (A. and C. Black).—On the Principles and Management of the Marine Aquarium: Wm. R. Hughes, F.L.S. (John Van Voorst).—The Life and Growth of Language. International Series: W. Dwight Whitney (Henry S. King and Co.).—First Annual Report of the Yorkshire College of Science, Leeds.—The Positive Philosophy of Auguste Comte: freely translated and condensed by Harriet Martineau. 2 vols. (Trübner).—The Geological Evidences of the Antiquity of Man reconsidered.—An Essay by Thos. Karr Callard, F.G.S. (Elliot Stock).—Corals and Coral Islands: Jas. D. Dana (Sampson Low and Co.).—An Introduction to the use of the Mouth-Blowpipe: Scheerer and Blandford (Frederic Norgate).

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