the attraction would increase, as it should do, in the ratio of their masses. But here transmission could not exceed the velocity of light, and moreover there would have to be an impossible wastage of electro-magnetic energy. Again, an "undulatory theory" of gravity has been proposed. But this too hopelessly breaks down under rigorous analysis. Lastly, there is the "electro-dynamical" explanation of the nature of gravity. This is, however, hardly more than a verbal theory, for we do not know what electricity is any more than we know what gravity is. It is an explanation "per ignotiora." All we can safely say is, that the deeper science penetrates into the mystery of things, the more clear it becomes, that the universe is under the government of the forces of electricity, displayed in an infinite variety of operations.

Note on the Elements of the Orbit of the IX Satellite of Jupiter.

BY REV. A. C. RIDSDALE, M.A., F.R.A.S., F.R.MET.S., M. LOND. MATH. S., F.PH.S., A.L.C.M., FOREIGN MEMBER SOCIETE ASTRONOMIQUE DE FRANCE.

THE IXth satellite of Jupiter, which was discovered by Nicholson at the Lick Observatory last year, has like the VIIIth satellite a retrograde motion. It is only of the 19th magnitude, so small that it never could have been detected visually, no matter how large the telescope. Nicholson discovered it on one of his photographs, as a little thin line, betraying its existence and the direction of its stately motion around its mighty primary. The elements of its orbit are as follows :—

Epoch and osculation, 1914, July 27, 8817.

Mean anomaly of epoch $M°$ 49° 28' ⎫

Perihelion distance of Node ϖ71   ⎬   A.D. 1914·9

Longitude of Node Ω 309° 23'   ⎭

Inclination i 157° 51'

Excentricity e 0·163.

Mean motion μ 0°·315.

Period P 3·125 years.