the house healthy, rearing of infants, prevention of the spread of infectious diseases, preparation of food and kindred subjects, knowledge of which is so much needed in our crowded neighbourhoods. The questions of poisonous dyes in domestic fabrics, of smoke abatement, of dust collection, and the prevention of cholera have been investigated and reported upon by special committees appointed for the purpose. The Health Exhibition held by the Society last June was commented upon, and the Secretary stated that more than 100 members had joined the Society during the past year.

THE great interest manifested in the International Health Exhibition is shown by the fact that application has been made, by British exhibitors alone, for space five times as great as that actually at the disposal of the Executive Council. Information has recently been received that the French Government has appointed a Commission; and Italy—owing in a great measure to the individual exertions of a member of the Executive Council—will, it is hoped, take an active part. A portion of the Educational Section of the Exhibition will be located in the Central Institute of the City of London Technical Guilds, the handsome building in course of erection in the Exhibition Road, which has been kindly placed at the disposal of the Executive Council. The Royal Albert Hall with its musical attractions will now form an integral part of the Exhibition; and the Aquarium, a popular feature of the late Fisheries Exhibition, will continue as an important part of the Health Exhibition. In the Dress Section the most popular exhibit will probably prove to be a series which is being prepared illustrative of English dress of all ranks of life, from the time of the Conquest to George IV. An International Congress on Education will be held, and conferences and lectures will conduce to the elucidation of the subjects of the Exhibition. It is also proposed to have a library and reading-room in connection with the Exhibition, which will be open to all visitors, under proper regulations, while the Exhibition is open. The library will consist of books on various subjects comprised in the classification of the Exhibition, both English and foreign. Application has been addressed to foreign and colonial Governments, asking them for copies of reports and statistics on sanitary and educational matters, and a circular is being sent out to authors and publishers requesting them to contribute works of a similar character.

AT a meeting of the Society of Telegraph Engineers held on the 13th inst., a short paper, "Notes on a Train Lighting Experiment," was read by Mr. W. H. Massey of Twyford, who strongly advocated the use of a small engine and dynamo-machine placed on each locomotive for working incandescent lamps, by means of which railway carriages would be much better lighted than at present for less than is paid for gas. An interesting discussion took place, and the meeting was adjourned to the 27th inst., when Mr. Massey is expected to reply.

THE March number of *Petermann's Mittheilungen* contains a letter from Dr. Junker dated Sami, 6½° N. lat., 25° E. long., December 8, 1882, in which he gives a brief statement of the results of his journeys in the Upper Welle and Bomokandi, with notes on the various tribes that inhabit the region. Dr. Junker did some further exploring work to the south-west of his station in 1883; but his numerous cases of collections have been lost in a fire which consumed the building where they were stored.

THE additions to the Zoological Society's Gardens during the past week include a Squirrel Monkey (*Chrysothrix sciurea*) from Guiana, presented by Mrs. Dundas; a Leopard (*Felis pardus*) from Africa, presented by Mr. S. Cresswell; a West Indian Rail (*Aramides cayennensis*) from South America, presented by Mrs. Edward Hairby; a Kestrel (*Tinnunculus alaudarius*), British, presented by Mr. F. E. Baum; a Common Viper (*Vipera berus*), British, presented by Mr. W. H. B. Pain; two Mute Swans (*Cygnus olor*), European, four Redshanks (*Totanus calidris*), British, purchased.

PHYSICAL NOTES

PROF. J. H. POYNTING has published in the *Proceedings of the Birmingham Philosophical Society* a note on a method of calculating the velocity of propagation of waves of longitudinal and transverse disturbances by the rate of transfer of energy. The paper discusses the two cases by the method originally propounded by Lord Rayleigh.

WE have received from Madame Plateau copies of three posthumous memoirs by her late husband, the lamented Prof. J. Plateau. Their titles are: "Quelques Expériences sur les lames liquides minces (deuxième note)"; "Sur l'Observations des Mouvements très rapides"; and "Bibliographie analytique des Principaux Phénomènes subjectifs de la Vision." The first of these *brochures* relates to the preservation of the glyceric fluid, to certain appearances in very thin films, and on the constitution of foam. In the second the writer contrasts four methods: the rotating mirror, the stroboscopic method, the intermittent illumination by electric sparks, and the process of multiple instantaneous photography. The third is a supplement for the years 1880–1882 to the well-known bibliography compiled by the deceased *savant*.

WE have also received the first instalment of vol. i. of the *Bulletin de la Société Internationale des Électriciens* (January 1, 1884), containing the laws of the new society, a list of founders, and one of the members already enrolled, now numbering about 1200, of whom only a few are Englishmen.

PROF. QUINCKE has lately read before the Berlin Academy a paper on the measurement of magnetic forces by hydrostatic pressure. He has examined the magnetic inductive capacity, or, as he calls it, the "di-magnetic constant" of a number of liquids, by observing their rise in an open-air manometer when subjected to a field of powerful, but known, intensity, the observed change of pressure being proportional to the square of the intensity of the field and to the difference between the magnetic inductive capacity of the substance and that of the air. A number of tables are given, with copious numerical data. The di-magnetic constant of such liquids as ether, alcohol, turpentine, nitric acid, bisulphide of carbon, glycerine, water, &c., showed small negative values; whilst the values were positive, and in many cases much more considerable for solutions of chloride of iron, chloride of manganese, sulphate of nickel, and of cobalt, and for solutions of magnetic salts in general.

A SLIGHT mistake occurred in a note on p. 276, in which Bunsen's estimation that in three years 5·135 cubic centimetres of carbonic dioxide was absorbed by a square metre of glass was stated as the absorption of one square centimetre.

THE CHEMICAL WORK OF WÖHLER[1]

IT seems fitting that these walls, which have vibrated in sympathy with that brilliant eulogy of Liebig which Prof. Hofmann pronounced some nine years ago should hear something of him whose life-long association with Liebig has exercised an undying influence on the development of scientific thought. The names of Frederick Wöhler and Justus Liebig will be linked together throughout all time. The work which they did in common makes an epoch in the history of chemistry. No truer indication of the singular strength and beauty of their relations could be given than is contained in a letter from Liebig to Wöhler, written on the last day of the year 1871. "I cannot let the year pass away," writes Liebig to Wöhler, "without giving thee one more sign of my existence, and again expressing my heartfelt wishes for thy welfare and the welfare of those that are dear to thee. We shall not for long be able to send each other New-Years' greetings, yet, when we are dead and moulder-ing, the ties which have united us in life will still hold us together in the memory of men as a not too frequent example of faithful workers who, without envy or jealousy, have zealously laboured in the same field, linked together in the closest friendship."

[1] A lecture delivered at the Royal Institution on Friday evening, February 15, 1884, by Prof. Thorpe, F.R.S.