WE learn from *Science* that a State Veterinary College has been established in New York. It is pointed out that the animal industry of the State is so important and extensive, and the relations of animal diseases so intimately interwoven with human health and well-being, that the financial and sanitary interests of the State will derive benefit from the knowledge and continued investigations of the body of experts which the College will bring together. The following have already been appointed upon the staff of the College:—Director and Professor of Veterinary Medicine, Principles and Practice, Zymotic Diseases, and State Medicine, Dr. James Law; Professor of Veterinary and Comparative Pathology and Bacteriology, Dr. V. A. Moore; Assistant Professor of Veterinary and Comparative Physiology, Materia Medica and Pharmacy, Dr. P. A. Fish; Assistant Professor of Veterinary Anatomy and Anatomical Methods, Dr. G. S. Hopkins; Professor of Microscopical Technology, Histology and Embryology, S. H. Gage; Instructor in Microscopy, Histology and Embryology, Dr. B. F. Kingsbury; Assistant in Veterinary Bacteriology, Dr. R. C. Reed.

SCIENTIFIC SERIALS.

Wiedemann's Annalen der Physik und Chemie, No. 7.—Polarised fluorescence, by L. Sohncke. The polarisation of fluorescent light is capable of giving hints concerning the manner in which the molecules of a solid substance vibrate, and its study may form the basis of the kinetic theory of solids. Theoretically, all doubly-refracting crystals should emit polarised fluorescence. This is found to be the case. Crystals of the regular system are the only crystals which do not. The author has investigated the fluorescence of a large number of substances in confirmation of this view.—Uniformities in the spectra of solid bodies, by F. Paschen. The author investigates the distribution of energy in the spectrum of glowing iron oxide at various temperatures. Of the formula hitherto proposed for its expression, that of Weber most closely approaches the reality. It gives a nearly parabolic curve in which the energy declines on both sides from a maximum which decreases in wave-length as the temperature rises. But the want of symmetry in Weber's curve is greater than in reality. The author finds a new formula, for which he claims that it covers all the observations.—The electrical behaviour of vapours from electrified liquids, by G. Schwalbe. The author finds that the vapours rising from electrified liquids are not capable of bearing away with them any portion of the electric charge, and that Exner's theory of atmospheric electricity must therefore be abandoned.—The damping action of magnetic fields upon rotating insulators, by William Duane. Cylinders and discs of glass, sulphur, paraffin, ebonite, or quartz, oscillating between the poles of a magnet with their axes vertical and at right angles to the lines of force, experience a damping action proportional to the field intensity and to the speed of rotation. This is not due to an action on the suspending threads, nor on the viscosity of the air, nor an electrostratic effect from the current in the coils, nor to induction currents in the substance, as was proved by test experiments and calculations. It must therefore be regarded as a hitherto unobserved magnetic effect upon the insulators in question.—Effect of magnetism upon electromotive force, by A. H. Bucherer. The author finds that in solutions of neutral ferrous salts no E.M.F. exceeding 0·00001 volt can be produced by the magnetisation of one of the two iron electrodes. The E.M.F.s observed by Gross and others must be attributed to changes of concentration produced by the magnetised electrode during its solution.—On the measurement of flame temperatures by thermo-elements, especially the temperature of the Bunsen burner, by W. J. Waggener. The temperatures were determined by various thermo-couples in different parts of the flame. The highest temperature, 1700° C., was indicated in the lower portion of the external mantle. But an infinitely thin thermo-element free from conduction would probably indicate over 1770°. A wire 0·05 mm. thick still suffers from conduction, and it is actually fused in the hottest portion. A more refractory metal is required for these measurements.

Bollettino della Società Sismologica Italiana, vol. ii., 1896, No. 1.—Velocity of propagation of the Paramythia (Epirus) earthquake of the night of May 13-14, 1895, by Dr. G. Agamennone. From time-observations obtained at several places near the epicentre, at six Italian observatories and at Nicolaiew, it appears that the early tremors travelled with a velocity of 1·94 km. per sec., and the oscillations constituting the maximum phase at the rate of 1·42 km. per sec. There is no evidence of any change in the velocity with the distance from the epicentre.—Vesuvian notes (July–December 1895), by Prof. G. Mercalli.

THE last number of the *Izvestia* of the Russian Geographical Society (1895, vi.) contains a new map of Lake Onega, in which last year's measurements of the depths of the lake are embodied. The greatest depths are in its western part, where they attain from 31 to 68 fathoms. This last depth is reached in the branch by which the lake protrudes towards the north-west. A narrow valley is thus formed at its bottom, and runs north-west to south-east, in the direction of the glacial striation in that region. Another great depth is found at the top of the other fjord-like bay in the northern portion of the lake, also directed to the north-west.

WE find in the last numbers of the *Izvestia* of the East-Siberian branch of the Russian Geographical Society (1895, Nos. 1 to 5) a very good sketch of the Yakutes of Verkhoyansk, by S. Kovalik; and an interesting note on the little-known customary hunting laws of the Buryates, by M. Croll; as also a full translation, from the Mongolian, of the renowned Buddhist "Mirror of Wisdom," which gives the "History of the Kingdom of Sukawadi."—M. Prein's preliminary article on the presence of the lime-tree in the neighbourhood of Krasnoyarsk is especially interesting. It is known that that tree does not appear to the east of the Urals, and only reappears in the Amur region on the very slopes of the high central plateau. But it was lately found in the Kuznetsk Alatau mountains, and has now been discovered further to the north-east, in the neighbourhood of Krasnoyarsk.

SOCIETIES AND ACADEMIES

LONDON.

Royal Society, June 18.—"Magnetisation of Liquids." By John S. Townsend.

The experiments on the coefficient of magnetisation of liquids were made with a sensitive induction balance. Both circuits were commuted about sixteen times a second, so that very small inductances could be detected by the galvanometer in the secondary circuit. The principle of the method consisted in balancing the increase of the mutual induction of the primary on the secondary of a solenoid arising from the presence of a liquid in the solenoid against known small inductances. Thus, if the sum of the inductances be reduced to zero, as shown by the galvanometer in the secondary giving no deflection, the balance will be disturbed to the extent $4\pi k$M, due to the insertion of a liquid into the solenoid whose coefficient of magnetisation is k, and the galvanometer in the secondary circuit will give a deflection when the commutator revolves. An adjustable inductance is then reduced by a known amount, m, till the deflection disappears; so that we get

$$4\pi k\mathrm{M} = m \qquad \therefore\ k = m/4\pi\mathrm{M},$$

where m and M are quantities easily calculated.

Since the formula does not contain either the rate of the rotation of the commutator or the value of the primary current, no particular precautions are necessary to keep these quantities constant.

In all the determinations the magnetising force was varied from 1 to 9 centigram units, and in no case was there any variation in k. The densities of the salts in solution were also varied over large ranges, and showed that the coefficient of magnetisation for ferric salts in solution depended only on the quantity of iron per c.c. that was present, giving the formula

$$10^7 k = 2660\,\mathrm{W} - 7{\cdot}7$$

for ferric salts, where W is the weight of iron per c.c., the quantity $-7{\cdot}7$ arising from the diamagnetism of the water of solution.

A similar result was obtained for ferrous salts, the corresponding formula being

$$10^7 k = 2060\,\mathrm{W} - 7{\cdot}7,$$

the temperature being 10° C.

Experiments were also performed to find the effect of heating,