

amount of closed magnetic shells and solenoids. It will thus be seen that even if we take the internal and external sources to be detached, the plain proposition given by Prof. Schuster would appear to require a modifying clause in order to be exact.

A. TANAKADATE.

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August.

#### A Polarisation Pattern.

THE following may be of interest to some of your readers.

A cylindrical mica chimney of an Auer gas-light is placed vertically on a varnished table. If we look through it at the diffused daylight from a window reflected by the table, faint coloured bands are seen running parallel to the length of the cylinder near both edges. If observed through a Nicol's prism, the band appears very beautiful.

T. TERADA.

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University, Tokyo, September 8.

#### A Focusing Screen for Use in Photographing Ultra-violet Spectra.

THE sensitive surface upon which Stokes projected the ultra-violet rays when observing metallic lines and absorption spectra consisted of a plate of plaster of Paris moistened with a paste of uranium phosphate acidified with phosphoric acid (*Journ. Chem. Soc.*, vol. xvii., 1864). Soret used uranium glass and solutions of fluorescent substances such as æsculine in liquid cells. I have found that the most convenient and effective screen for examining spectra with a quartz spectrograph is one such as is used for the X-rays. It may be made as follows:—a photographic plate is first cleared of silver bromide by fixing and washing, and when the film is partly dry, but the gelatin still soft, it is dusted over with a powder of barium platinocyanide crystals, so as to be somewhat thickly coated with the salt. This is fixed in the dark slide of the camera. To focus a spectrum, the slide is tilted to the necessary angle, and a somewhat powerful focusing glass with a flat field is applied to the uncoated surface of the plate, when both the visible and ultra-violet spark spectra may be plainly seen by transmission, the latter by reason of the fluorescence excited. The focusing glass should be first carefully adjusted for any visible object on the other side of a plain glass plate, such as a fine hair fastened upon it, and the position of the eyepiece is then fixed. Suitable focusing glasses are those made by Dallmeyer and by Taylor, Taylor, and Hobson. When the spectrograph has been adjusted by means of the screen, the ultra-violet lines appear quite as sharp as those in the red and yellow, even the details in the group of cadmium lines between wave-lengths 2100 and 2400 are well defined, and a very fair photograph may be obtained; but for the most accurate focusing photography must be resorted to.

W. N. HARTLEY.

Royal College of Science, Dublin, October 2.

#### The Omission of Titles of Addresses on Scientific Subjects.

THE published reports of the British Association make an omission of an equal and opposite character to that about which your correspondent complains. Perhaps these are intended to cancel out. I refer to the publication of titles only, without any text. On receiving the last report (1904, Cambridge) I analysed this matter so far as it relates to Sections A and G, in which I am most interested. In Section A there were 83 communications, 29 of which appear by title only, and of these publication elsewhere is referred to in foot-notes in 4 cases, leaving 25 to the recollection of the audiences who heard them. Section G was better. There were 25 communications, and 13 appeared by title only; but of these 9 may be traced by those who take the trouble to consult the other publications referred to in the foot-notes.

A. P. TROTTER.

Westminster, October 3.

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#### THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

THE International Congress on Tuberculosis, held in Paris on October 2-7, has undoubtedly served as a medium for a most fruitful interchange of views by those interested in the struggle against tuberculosis. The congress was held in the Grand Palais, which from its extent enabled the members to be collected under one roof. The first day was devoted to the formal opening, when the delegates were welcomed by the President of the French Republic, who also after the close of the congress gave a reception at the Palais de l'Elysée. The chief social functions, which were characterised by complete success, comprised a reception at the Hôtel de Ville by the Municipality of Paris, an "at home" by the *Figaro*, at which performances were given by well known artistes, a soirée at the Hôtel Continental given by the president of the congress, Dr. Hérard, another at the Châtelet Theatre by the *Matin*, and a visit to Vaux de Cernay on the invitation of Dr. Henry de Rothschild.

The British Government was represented by Dr. Theodore Williams and Dr. Bulstrode, the National Association for the Prevention of Consumption by Sir William Broadbent and Dr. Perkins, while the foreign Governments and all the leading medical societies and institutions had their special official representatives.

The chief feature of the congress was reserved for the closing *séance*, when Prof. v. Behring announced that he had every reason to hope he had discovered a method of treating tuberculosis which would be as efficacious as the anti-toxin treatment of diphtheria he had first proposed in 1890.

His statement, received with great enthusiasm, was to the effect that, although he had made a great step, the value of his proposed procedure must be tested on animals in other laboratories than his own, and clinically by physicians with an intimate knowledge of the varieties of pulmonary tuberculosis, before it could be said that an actual curative medium had been found.

Prof. Behring, as had been anticipated, gave no exact details as to the method of obtaining or administering his latest therapeutic discovery, but the earlier stages of his work are to be explained in a forthcoming book entitled "Modern Problems of Phthisiogenetic and Phthisiotherapeutic Physiology illuminated by History."

His experiments have led him definitely to abandon the idea of introducing living tubercle bacilli into the human body with a therapeutic object. He has discovered a substance, to which he has given the name T.C., which represents the vital principles of the tubercle bacillus of Koch. To the presence of this substance, which possesses extraordinary fermentative and catalytic properties, is due both the hypersensibility of living organisms to Koch's tuberculin and the protective reaction against tuberculosis. This T.C. impregnates and becomes an integral part of the cells of any organism with which it comes in contact, undergoing a metamorphosis into another substance to which the name T.X. has been given.

This elaboration of T.C. in the organism is a long and perilous process. Prof. v. Behring claims to have succeeded in producing this change *in vitro* by freeing the T.C. from certain substances which impair its therapeutic action. Of these he distinguishes three groups:—(1) a substance (T.V.) only soluble in pure water, and possessing a fermentative and catalytic action. To the presence of this substance are due the toxic effects of Koch's tuberculin. One gram of this in the dry state is more toxic than a litre of the old