form, in which the whole lymphatic apparatus appears to be diseased in a peculiar manner; a septico-pyæmic form, with metastases to internal organs; and primary plague-pneumonia, a lobular pneumonia with quite characteristic appearances. The mode of entrance of the infection seems mostly to be the skin, more rarely the lungs and the tonsils, never the intestinal canal. The Yersin-Kitasato bacillus is certainly the exciting cause of the disease; it can be obtained pure from the organs as well as from the blood. The Commissioners were unable to satisfy themselves that Haffkine's serum injections had any effect. They considered it improbable that the plague could find a footing in Europe.

THE commission on the plague under the direction of Professor Koch has also issued its report. It states, according to the London *Times*, that the plague bacillus outside the human body or certain animals has very brief vitality. Pure cultures with which experiments were made were killed by sublimates at boiling temperature immediately, by mineral acids in five minutes, by a solution of 1 per cent. of carbolic acid in ten minutes, and by milk of lime exposed to sunlight in one hour. The duration of the life of the bacillus was found to be from eight to ten days at the most. Rats were found to be in the highest degree susceptible and to be spreading the plague germs and communicating them to human beings. For experiments on immunity Yersin serum was used with apes. Its protective power in the case of brown apes did not exceed eight days. Strong injections of serum proved to be of unquestionable curative efficacy. Haffkine's system of inoculation, which was applied to 1,400 patients, is said, contrary to the report of the Austrian Commission quoted above, to have showed undoubted protective results, although a number of the patients were taken ill in consequence of the inoculation.

REGULATIONS have been issued by the German government for the sale of Professor Koch's new tuberculin, under which name the new specific will be sold by chemists in phials containing one millilitre at Marks 8.50 and in phials containing five millilitres at Marks 42.50. The tuberculin will only be given to certified medical men or to those provided with an authorization from such.

A RESOLUTION has been submitted to the municipal council of Paris requiring families to furnish every two months a medical certificate stating that infants under one year have been cared for in accordance with hygienic rules.

UNIVERSITY AND EDUCATIONAL NEWS.

THE full text of the government bill with respect to the University of London is published in the issue of the *Times* for July 24th. The Commissioners are Lord Davey, Dr. Mandell, Lord Bishop of London, Lord Lister, Sir William Roberts, M.D., Sir Owen Roberts, Professor Jebb and Mr. E. H. Busk. The Commissioners are required to make statutes and regulations for the University of London in general accordance with the recommendations of the Cowper Commission. The Commissioners are to be superseded at the end of 1898 by a Senate of the University consisting of the Chancellor and other representative members. The Senate has entire conduct of the University, it only being provided that:

(*a*) No religious test shall be adopted, and no applicant for a University appointment shall be at any disadvantage on the ground of religious opinions;

(*b*) No procedure to a higher degree shall be allowed without examination or other adequate test, nor shall any honorary or *ad eundem* degree be conferred unless the Senate, in exceptional cases, think fit to confer such a degree on a teacher of the University;

(*c*) No disability shall be imposed on the ground of sex.

A LAW passed by the last Legislature of the State of Illinois appropriated to the State University the sum of $456,000, lost to the University by the defalcation of the former Treasurer.

THE faculty of sciences of the University of Paris has been authorized to give a certificate for higher studies in physical geography.

A NEW technical school at Northwich, built by Sir Joseph Verdin at a cost of £12,000, was formerly opened on July 24th.

IT is proposed to establish at Shanghai a university for the education of the Chinese in Western art, science and literature.

DR. R. S. CURTIS, of the University of Chicago, has been elected professor of chemistry in Hobart College.

MR. JOHN P. HYLAN has been appointed instructor in experimental psychology in the University of Illinois.

DR. HOPE, lecturer on hygiene at University College, Liverpool, has been made professor.

DR. TRAUBE, Privatdocent at Berlin, has been appointed to the newly established professorship in the Technological Institute at Charlottenburg, and Dr. Adalbert Kolb, Privatdocent in chemistry in the Technological Institute at Darmstadt, has been promoted to a professorship.

DISCUSSION AND CORRESPONDENCE.

CEREBRAL LIGHT.

IN SCIENCE for July 23d, p. 138, I find a letter from Dr. Scripture in which he makes some very acute observations on the the origin of the figures, usually irregular and obscure, but sometimes quite definite, which are seen in the dark field of the closed eyes. In past years I have spent many hours in studying these figures and they are briefly described in my little volume on Sight, pp. 66 and 67 of last edition. They are usually considered as of retinal origin and sometimes spoken of as 'retinal light;' but Dr. Scripture gives what he thinks conclusive reasons for thinking that they are of cerebral origin, and therefore proposes the name 'cerebral light.' Now, as to the question of origin, I am not prepared to say anything. I wish now only to show that his supposed tests are not valid.

1. He says that with the eyes closed there is but *one* dark field, instead of two, as there ought to be if its origin is retinal; for there are two retinæ. Now, if he means the simple field without reference to the figures in it, I would ask: How could there be more than one? Even with the eyes open, there seems to be but one field. Only by close observation can we see that there are really two partly overlapping fields forming a common field bounded on the two sides by the faint images of the nose. But in the dark field there are no images of the nose. But if, on the other hand, he means that the two retinæ could not be expected to be similarly affected in all parts, and therefore there ought to be different figures for the two retinæ in the same dark field, then I would ask again: How are we to distinguish the figures belonging to each retina in the one dark field?

2. But, in further proof, he says: These figures do *not move* with the movements of the eye; while after-images, which are admittedly retinal affections, do thus move. Now, I find, on the contrary, that these figures behave exactly as the after-images do. I find that, in looking in a different direction in the dark field, they may indeed disappear, but only to reappear at the new point of sight. After-images do the same. Unless they are very strong, they also, on changing the point of sight, disappear to reappear at the new point.

It is possible, however, that we are talking about different things. It is possible that there are two different kinds of figures in the dark field, one retinal and the other cerebral.

3. But, again, he says that these figures do not change place when the axis of the eye is displaced by pressure in the corner, whereas after-images do change place under these conditions. Now, on the contrary, I find that after-images under these conditions do *not* change place. It is true that with the eyes open they may *seem* to move, but this is only an illusion, the result of the contrary motion of all objects in the field of view. Real objects move because their images change their places on the retina while we look in the same direction, but the retinal brands which cause after-images cannot change their places on the retina. But now shut the eyes, so that there are no objects to plague us; then we find that after-images do not move by displacement of the axis of the eyes. There is only one case (that of the previous head) in which after-images follow the motions of the eye, although it is the commonest case. It is that in which the two eyes move together in the same direction. In other words, they follow the direction of looking, not the direction of the individual eye. But in displacement of the eye-axis by pressure we do not change the direction of the *looking* of the observer.