

he holds proves that the so-called 'retinal light' is really 'cerebral light.' The experiment which he considers conclusive consisted in looking at a dimly lighted window in a dark room, the window being so dimly lighted that both the retinal figures and the window could be seen. He then moves the eyeballs with the fingers and notices that the retinal figures are stationary, while the image of the window moves. Dr. Scripture apparently confuses movement of the retina and movement on the retina. What he calls movement in the case of the image of the window is evidently movement of the image on the retina as shown by the 'local signs' of the retina. But the retinal figures, being impressed on the retina, move with it and not on it, and therefore the local signs of the retina give no evidence of its movement.

In repeating the experiment I gazed fixedly at the window for some time. In closing my eyes I had impressed on the retina, in addition to the retinal figures, a faint after-image of the window. If the eyes were now moved, as Dr. Scripture directs, no movement was noticeable in the after-image. It did not separate into two moving images, for this would necessitate a change in position of the two images in relation to corresponding points of the two retinas. If two dissimilar after-images are impressed, one on each retina, and the eyeballs pressed, they, for the same reason, will show no relative motion. Why, then, should we not expect the retinal figures to remain single and immovable, as Dr. Scripture found them to be?

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NOTES ON INORGANIC CHEMISTRY.

Two reports have recently been presented to the Home Office in Great Britain which are of considerable general interest, one on the use of yellow phosphorus in matches, and the other on the use of lead in pottery glazes. The first of these reports is by a commission consisting of Professors T. E. Thorpe, S. Oliver and Dr. Cunningham, and the other by Professors Thorpe and Oliver, and both have been reviewed at some length in *Nature*. Only two kinds of matches seem to be considered, the

'strike anywhere,' which is tipped with yellow phosphorus, and the 'safety,' in which red phosphorus is used, and is not on the match, but on the striking surface of the container. According to the report no danger seems to attend the manufacture where red phosphorus is used. In the case of yellow phosphorus, the dangerous processes are mixing the paste, dipping the matches, drying and boxing, this last involving the most handling. Already existing rules in Great Britain require efficient ventilation, non-employment of laborers who have suffered with necrosis or have lost a tooth, immediate medical examination of persons suffering with toothache, notification of cases of necrosis, and proper washing conveniences. The immediate question before the commission was as to whether they should recommend the prohibition of yellow phosphorus. In view of the competition of other countries, notably Belgium, Sweden and Japan, for export trade, and, as it has been shown that proper precautions can prevent danger in manufacture, it was felt wise not to prohibit the use of yellow phosphorus, unless an international agreement could be reached. They suggest, however, more precautions, and point to the Diamond Company, of Liverpool, where no cases of phosphorus necrosis have ever occurred. Unless we are mistaken, not a few of the American manufacturers have solved successfully the problem of tipping the match itself with a paste of amorphous phosphorus, while the use of the 'safety matches' is, happily, rapidly increasing.

The report on lead glazes is more far-reaching in its recommendations, but, according to W. Burton, in *Nature*, is hardly practical. The recommendations are as follows: (1) Prohibition of lead glazes in seven-tenths of the wares produced in the potteries; (2) That in the other three-tenths lead should be used only in the form of a lead silicate frit; (3) The use of lead white in glazes or colors absolutely prohibited; (4) Prohibition of women and children in all processes where they would come in contact with the lead work. Mr. Burton would agree to the second and third recommendations, but considers the first and last impracticable, on account of the difficulty of replacing lead glazes by leadless glazes for many wares, and on ac-

count of foreign competition. He points out the vast difference between laboratory experiments and practical pottery, especially with reference to leadless glazes. He believes that the adoption of the second and third recommendations, together with monthly medical inspection of all workers, would put an end to the evils of plumbism.

THE *Zeitschrift für angewandte Chemie* gives an account of a recent explosion in a Swiss school in connection with experimentation on oxygen. The oxygen was contained in a glass gasometer, which had been previously completely filled with water, and had been generated from potassium chlorate. Unknown to the teacher, the gasometer had earlier been used for acetylene and the water had not been renewed. It seems probable that sufficient acetylene had been dissolved by the water to give an explosive mixture with the oxygen.

In the *Philosophical Magazine* for June, Gerald Stoney gives an interesting comparison of the amount of oxygen in the atmosphere and in the exterior of the earth. Above a square centimeter of the earth's surface are 234.5 grams oxygen. The same amount would be contained in a column of water of the same section and 264 centimeters deep, and in a still shallower column of the earth. Considering the earth's 'crust' to be of approximately constant composition to a depth of seventeen miles, the amount of oxygen in it would be more than ten thousand times as great as that in the atmosphere.

At the recent Royal Society's *Conversazione*, Sir Wm. Crookes exhibited photographs of lines high in the ultra violet region, characteristic of a new element associated with yttrium and separated from it by long fractionation. The element has an atomic weight, probably near 117, and its oxid in the purest state yet prepared is of a pale brown color. The name of *victorium* has been given to the element.

NOTE was recently made of the investigations of Parmentier, tending to show that fluorin is not present in certain mineral waters, as had been previously held. In a succeeding number of the *Comptes Rendus* Charles Lepierre maintains that minute traces of fluorin have been

detected in many mineral waters, and no less than ten or twelve milligrams per litre are present in the Gerez water (north Portugal). This water is considered very efficacious in liver diseases.

A PAPER was recently read before the Royal Society by David Gill on the presence of oxygen in the atmosphere of certain fixed stars. A study of the spectrum of δ Crucis reveals the presence of all the stronger oxygen lines as well as all the known helium lines. On the other hand, no trace of true nitrogen lines are found in the spectrum. Hydrogen is present, and probably carbon and magnesium. The spectra of δ and ϵ Canis Majoris and probably δ Centauri are practically identical with that of Crucis.

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CANNIBALISM IN QUEENSLAND.

EUGENE F. RUDDER contributes to a recent number of *Science of Man* (Vol. 2, No. 3, Sydney, April 21, 1899) interesting personal observations on the Blackfellows of Queensland. Accidentally he stumbled on a silent but apparently ceremonial feast on the flesh of 'a very powerful, well-conditioned black,' who had been shot in an attempt to escape from capture for some offense the day before. The skin had been removed entire and was drying before the fire on five spears set in the ground; and, on detection, the group of blacks deserted their work and did not reappear. Inquiry among other blacks yielded little connected information concerning the case, except that 'It make 'im blackfellow strong fellow'; but more general inquiries elicited the information that the anthropophagy was commonly limited to the bodies of those killed in battle or by accident, and that the feast was ceremonial and usually limited to the kinfolk of the deceased. In one case a girl was speared and eaten by two rivals for her hand; the body was cooked on a sort of platform of green poles, laid above the glowing coals of a large fire when nearly burned down. Another case was the killing and eating of a female child by the mother; this is said to be an established custom in case of excess of female children, or in case of deformity, the custom being enforced by capital punishment, and the