

bottle containing compressed hydrogen. The hydrogen, when turned on, becomes kindled by the lamp flame, which is then extinguished by drawing down the wick. The hydrogen flame is next adjusted to a standard height and the amount of inflammable gas or vapour is estimated by the dimensions and appearance of the luminous "cap" which is seen over the flame. Percentages of fire-damp varying from 0.25 to 3 could thus be detected and estimated, while the luminous flame of the lamp alone, when sufficiently reduced, serves to detect percentages above 3. The action of the lamp may be thus explained. The hydrogen flame being practically non-luminous shows with greater delicacy the impingement upon it of inflammable gas, which imparts to it a more or less degree of luminosity. So long as the mining of coal lasts, so will those engaged in the operations involved be exposed to the terrible risk of explosion; and the adoption of precautionary measures such as Professor Clowes' simple and compact invention would ensure is imperative, if the awful disasters, which unhappily do not appear to be on the decline, are to be averted.

THE COST OF MAINTENANCE OF PATIENTS IN SMALL-POX HOSPITALS.

WELL-TO-DO people suffering from infectious diseases do not seem so fortunate in the provinces as they are in London. If removed to an isolation hospital, for example, and they cannot show that they are without proper lodging and accommodation and that they are unwilling to be sent to the hospital, they can be sued by the sanitary authorities to recover expenses of maintenance. Such an action has just been tried at Blackburn before his honour Judge Coventry of the county court, the guardians of the sanitary rural authority being the plaintiffs in the case. The plaintiffs failed because the defendant showed that he was not without proper lodging and accommodation. He also satisfied the magistrate that he was not a consenting party to the removal and that this was carried out in pursuance of the wishes of the borough medical officer of health whilst he (the defendant) was suffering from small-pox and therefore presumably unable to protest against removal.

THE ACTION OF COLD AND WARMTH ON MUSCULAR FATIGUE.

FOLLOWING up Professor Mosso's researches on the "pathology of fatigue," Dr. Patrizi contributes to the journal of the Royal Academy of Medicine of Turin the results of a series of experiments by way of determining the action exerted by cold and warmth on the fatigue of the human muscle. The experiments were made by means of the "ergograph" (Professor Mosso's instrument), and consisted in the execution of a given piece of work—the lifting of a weight by the middle finger of the right hand, either by successive voluntary contractions or by contractions induced by electric irritation. The experiments, moreover, were conducted always at the same hours of the day, and comparison was made of the several tracings which were obtained while the forearm was kept in a bath of hot or of cold water. The range of temperature within which the muscles act in executing a piece of work presents no appreciable alteration and is very wide—from 46° to 15° C. This fact Dr. Patrizi recognises as "providential," seeing the different temperatures at which the muscles of the arm have to undergo fatigue in the ordinary conditions of life. The net result of the experiments goes to prove that with cold the work of the muscle rapidly diminishes—so much so as to become one-fourth of the normal at 15° C. and fifteen times less than the normal at 10° C. On the other hand, above 46° C.—that is, between 46° and 47° C., the maximum limit of supportable heat—work undergoes a slight but constant diminution in all individuals. To explain this fact, confirmed as it is by other observations—a

fact, moreover, not to be attributed to the dilatation of the vessels effected by heat and to consequent circulatory disturbance, because otherwise it would be manifested even at temperatures below 46° C.—Dr. Patrizi contends that the blood in the heated muscle is no longer capable of histological exchange and that the toxic products of fatigue act more energetically on the muscle at high temperatures.

THE JUDGES AND VACCINATION.

IT is said by a contemporary that one of the judges has been prevented from attending the High Court of Justice by having been revaccinated prior to going on a circuit where the dreaded disease is rife and that one of the ushers has had a similar experience. We are glad that the judges are showing so much good sense and setting so excellent an example. Successful revaccination is apt to disable a person for work for a day or two, but this is a slight disadvantage when compared with the weeks of disablement caused by even a light attack of small-pox.

RECEPTION OF PROFESSOR VIRCHOW.

WE are informed that it is intended to entertain Professor Virchow at a complimentary dinner on the evening of Thursday, March 16th, the occasion of his delivery of the Croonian lecture at the Royal Society. The invitation, in which the Presidents of the Royal Society and of the Royal Colleges of Physicians and Surgeons have joined, has been accepted by Professor Virchow. We are asked to announce that a preliminary meeting in reference to the preparations for the occasion is to be held at the residence of Mr. Hutchinson, 15, Cavendish-square, this (Saturday) afternoon at 5 P.M. Mr. Hutchinson will be glad to receive communications from those desirous of taking part in the welcome to be accorded to the foremost representative of pathological science.

MICRO-ORGANISMS IN BERI-BERI.

VARIOUS observers have described micro-organisms in beri-beri, but they have hitherto failed to prove that any of them are pathogenic. Drs. Musso and Morelli have made some careful investigations in regard to this disease which are worthy of note.¹ They examined the blood of eleven patients suffering from beri-beri, with uniform results. When rabbits and guinea-pigs were inoculated with the cultures the following symptoms were produced: The animal appeared drowsy and there was paresis of the posterior extremities; the abdomen was somewhat distended. Death occurred at periods varying between forty days and four months, differences depending probably upon variations in the doses and the virulence of the cultures. After death three prominent conditions were found—ascites, hydro-pericardium and nephritis. The liquid found in the abdomen and pericardium was strongly albuminous and contained salts—corresponding, therefore, in general characteristics with the fluids found in the bodies of human beings suffering from the disease.

PREVALENCE OF ZYMOTIC DISEASES.

MORE than 1200 cases of scarlet fever were notified in the large towns of the kingdom during the week ended Feb. 11th, London contributing rather more than a third of them. The chief other contributory places were Sheffield, Bradford, Liverpool, Manchester, Salford, Swansea, West-Ham and Birmingham. During the same period some 300 cases of diphtheria were notified, London furnishing more than half. Manchester, Cardiff and Birmingham furnished more than any other place, except the metropolis. Liverpool had most cases of enteric fever next to the capital. In London it is pleasing to learn that fewer cases of scarlet fever were under

¹ Gazette Médicale de Paris, Jan. 21st, 1893.