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DISCUSSION.

Dr. S. Rideal, referring to the author's remarks regarding the stability of the solutions, said that this was an important factor when such solutions had to be kept for any length of time, but in the experiments that he had made the germicidal effect was required immediately after the solution was made. It was now well known that for effective sterilisation this reagent could only be employed when there was no readily oxidisable organic matter

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present—in fact, the amount of chlorine required for sterilisation could be determined from the oxygen consumed, as these two figures were proportional to one another.

Dr. H. Borns agreed with Dr. Hutton that the theory of the formation of hypochlorites had been settled elsewhere. Mr. Digby need not apologise for the details of his experiments, however. He would ask Mr. Digby how his hypochlorite had been prepared, and how transported, and how the metal couples were arranged. Could not the strong effect of the ebonite-metal couples be due to the action of the sulphur of the vulcanised rubber and of the alkali?

Mr. L. A. Smart stated that he was not surprised that Mr. Digby had met with difficulties when endeavouring to impregnate wood with bitumen merely by boiling. He had recently been called upon to examine a new process for impregnating wood with creosote, fire-proofing solutions, &c., and was surprised to find, on investigation, that with the ordinary processes of creosoting, the liquid seldom penetrated the wood more than three-eighths of an inch except at the ends of the log, but by the new process which he had examined, they were able to put creosote or fire-proofing solutions through a log of wood twelve inches square and nine feet long—in fact, when the log was split open, there was not the slightest indication of the creosote having failed to reach any part of the timber. This process utilised superheated steam by atmospheric pressure.

Mr. W. Pollard Digby (*communicated reply*): In reply to Dr. Rideal I am quite willing to concede that the temperature of the electrolyte is not the only factor governing hypochlorite stability. The quantity of alkali in excess is of considerable importance. But I have several records of very rapid depreciations occurring in solutions which had been treated with a definite excess but had been allowed to become heated, whereas other solutions with the same excess of alkali which had been kept cool were quite stable. In reply to Dr. Borns, the solutions used in my experiments were made by the electrozone process with a slightly modified form of the Crawford electrolyser. Transport was effected in glass bottles. The arrangement of the galvanic couples is described in the Paper, it being only necessary to add that they were suspended in open glazed earthenware jars. The suggestion as to the effect of the sulphur in the ebonite as the root cause of the exceptional depreciation seems a very helpful one. Mr. Smart's proposal that bitumenising should be effected by the new process he referred to was of great interest. But even given a perfect method of impregnating with bitumen, it seems that bitumenised wood should only be used for purely temporary work.