as one suggesting a new line of investigation in cases of the sort, and as likely to lead to a clearer explanation of the origin of some of these cases. The rarity of such cases, which the antiseptic system of surgery has done so much to produce, must be my excuse for having brought so short a record before the Association; but I do so in the belief that, if observations in the direction indicated be made on the isolated cases which do occur, much of interest may be found out, and valuable indications may be established on which to base a system of treatment.

ON THE DESIRABILITY OF ESTABLISHING BACTERIOLOGICAL LABORATORIES IN CONNECTION WITH HOSPITAL WARDS.

Read in the Section of Physiology and Pathology.

By JOHN CHIENE, F.R.C.S.E.,
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THE present paper must be looked on as the direct outcome of that read before the Association, at its meeting last year in Liverpool, by Dr. Dreschfeld. To any one who heard that paper, which treated in so thorough a manner of the relations of micro-organisms to disease, three facts became at once apparent; that,

1. Much work has been, and is being, done as regards this question.
2. Much more remains to be done.
3. A great deal of this work is being done abroad.

In these researches, the United Kingdom is not taking the position which its high standing in other departments of science would warrant one in anticipating. We know much already about anthrax, tuberculosis, ague, pneumonia, relapsing fever, erysipelas, and glanders; and here we must pay a tribute to the work of Dr. Greenfield, the President of this Section, whose researches on anthrax may be pointed to as one of the achievements of this country in the domain of micro-organismal pathology.

There remains, however, a whole series of diseases of which we at present know but little, and which are now being investigated; such are pyæmia, septicæmia, syphilis, typhoid, typhus and scarlet fevers, diphtheria, and others. On inquiring how this country can take a greater share in these investigations, one is at once met by the assertion that it is largely handicapped by the repressive action of the Vivisection Act; and thus has arisen a form of paralysis, or at least paresis, amongst our scientific workers. This form of paralysis is, however, quite an unnecessary result; for, notwithstanding these restrictions, some useful work may be accomplished.

Dr. Dreschfeld clearly points out some directions in which this may be done, and, amongst others, directs our attention to such subjects as the possibility of altering micro-organisms by repeated cultivation in nutrient media, either as regards their form or their function; the question where their spores lie dormant, in the air, in water, in the soil, or in food, thus opening the whole question of infection and contagion; and how long they retain vitality, how they enter the body, and how they can be most easily destroyed.

As regards these most important questions, much can undoubtedly be done without the aid of vivisection, and there are two ways in which these investigations may receive valuable assistance, namely:

- A. The institution of bacteriological laboratories; rooms set apart for the study of these lower forms of plant-life.
- B. The transmission to such laboratories of morbid materials, collected from cases in which micro-organisms may play a causative part; and their thorough examination.

The laboratories, to be most efficient, should be placed where the micro-organisms occur—namely, in hospitals; and in connection with each hospital a small room fitted with the few necessities for this class of study could be easily established, and placed under the superintendence of the medical staff. In the great centres of medical education, this is already accomplished; but in the numerous provincial hospitals a vast amount of most valuable material is being constantly wasted; where, if such laboratories existed, and were conducted by the resident surgeons or junior practitioners of the neighbourhood, much valuable material would be gained.

The cost of such a room is trifling. If gas and water be laid on, it merely remains to fit up a set of sterilising and incubating apparatus, such as that devised by Koch; and to provide the necessary glassware. This can be done for £10.

Much can be accomplished in the cultivation and study of micro-organisms with an ordinary microscope. The interesting and valuable work of botanical classification may thus be advanced, and the general physiological tendencies of various organisms observed. If, however,

delicate and absolutely reliable results are to be attained, a powerful instrument must be added to the fittings of the laboratory. The most desirable is the microscope of Zeiss of Jena, which, fitted with Abbé's condenser and a one-twelfth inch oil immersion-lens, costs about £30. So powerful a microscope is, however, by no means essential.

Could the hospital authorities be persuaded of the importance of such a step, the withdrawal of a single bed for a year would more than cover the primary cost of a most useful adjunct to hospital efficiency, and the subsequent cost would be very small indeed. If such laboratories could be founded, more attention would be paid to giving the requisite instruction to students in the medical schools; and they would thus pass out with the requisite knowledge for undertaking the work.

Turning now to the second aspect of this question, we shall find that many medical men, who have neither time nor opportunity to carry out such studies themselves, are yet quite prepared to act as collectors of material from any interesting cases which occur in their practice. The method I have devised is to make use of capillary lymph-tubes to collect blood and morbid fluids, which are at once sealed up hermetically, having been previously sterilised by soaking in absolute alcohol. These are transmitted by post in small wooden cases, securely fastened, and with a label attached for the address. These can be supplied in any quantity, containing six tubes, and with a label attached, at a cost of less than three farthings each. In the case, there is room for a small scroll of paper, which prevents the tubes from shaking about, and supplies room for a few short notes of the case from which the morbid products are collected. The whole goes through the post without any risk, and, as experience has proved, with results which leave nothing to be desired.

If it be thought desirable to send tissues, they must be removed with antiseptic precautions, and dropped immediately into molten paraffin; and thus they can be transmitted without fear of contamination. In conclusion, I believe this question to be one of vital importance at the present juncture; and I would propose that this Section should approach the Association with a plea for the importance of encouraging this sort of work. I would suggest that a committee be appointed, on the basis of the Collective Investigation Committee, with powers to grant funds for setting up a certain number of centres for carrying on the work, and for supplying tubes to medical men all over the country who are willing to transmit material to the various centres, where it can be thoroughly investigated—in many cases, it may be, with the aid of a vivisection-licence. I may mention, in this connection, that Mr. Hallam, the head of the Veterinary Department in India, and a Fellow of our Edinburgh College, proposes making arrangements for carrying out such a plan in the districts of that country, in connection with diseases of the lower animals; and it would be well if, in this country, a subject which is the great question of the day in medical science might obtain that amount of attention which it deserves, and which will supply fields for labour of no less scientific interest than of practical utility, the magnitude of which is as yet beyond computation.

A NEW AND SIMPLE ANTIPYRETIC.

By LAUCHLAN AITKEN, M.D., ROME.

A LITTLE more than a year ago, the attention of physicians in Italy was drawn to a new and simple cure for ague by Dr. Maglieri, in a short article which appeared in one of the Italian medical journals (*Il Morgagni*, 1882, p. 751). The remedy was merely a decoction of lemon; and Dr. Maglieri heard of it originally from his uncle, a farmer, who had frequently used it to the benefit of some of his farm-labourers, the victims of malarial affections, which had resisted better known means of cure. In his notice of its effects, Dr. Maglieri pointed out that it was probably the method alone of preparing the lemon decoction which gave it the value it apparently possessed, as, in this land of malaria and of lemon-trees, the ordinary juice of the fruit must have been employed many millions of times in different forms of ague, without any great effect having ever been ascribed to it by patients or physicians. Dr. Maglieri had himself used it successfully, not only in cases of chronic malarial cachexy, but also in pernicious malarial fevers; and it was the happy issue of some of his experiments, in such dangerous illnesses, that induced him to publish the article mentioned. The remedy was adopted soon afterwards, at the request of Professor Tommasi-Crudeli, who had read Dr. Maglieri's notice, by a large landed proprietor near Rome; and the results obtained by him, too, in severe cases of malarial infection, were very surprising, and were mentioned in a letter to the Minister of Agriculture