

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 LAUCLAN 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

and Commerce, published by Professor Tommasi-Crudeli in the spring of last year. In the *Morgagni* for March of this year, Dr. Dominico Arzillo gives some details of cases in which he had used the lemon-decoction with excellent effects, and, with the zeal of a convert, writes in enthusiastic terms of the simplicity of the cure and of its superiority to quinine. As far as is known to me, these few notices comprise the whole literature of the subject.

Shortly after reading Professor Tommasi-Crudeli's letter, I made a trial of the lemon-decoction, prepared as directed by Dr. Maglieri, in two cases: one a simple quotidian ague, the other a case of enteric fever, complicated with obstinate intermittent attacks, which retarded recovery; and in both instances much benefit was derived, and the quinine could be given up: this was a considerable gain in itself, as the two patients seemed to suffer more than usual from the unpleasant effects of large doses of that drug. During the past winter, I had no occasion to give it in any genuine agues, as very few such cases come under observation, a simple intermittent fever of any type being of the rarest occurrence amongst visitors to Rome in that season of the year. But in several cases of gastric and enteric fever, complicated with malarial manifestations in their later stages, and in several others which might be looked on as typho-malarial throughout, the lemon-decoction has seemed to be markedly beneficial, and to act so well as an antipyretic, that more security was felt in giving up the large doses of quinine which were formerly deemed indispensable. That this may be of great importance in such cases is clear, as we frequently find complications appearing which contraindicate such doses of quinine as are truly antipyretic—from 25 to 40 grains daily, for instance. In almost all the cases treated by me this season, jaundice occurred, showing the existence of very considerable congestion of the liver and biliary passages, and not improving, to say the least of it, with the use of quinine. The lemon-decoction, on the other hand, could scarcely aggravate such a condition, and, as it is not disagreeable to the taste, the nausea resulting from the jaundice was not increased. It was always prepared as directed by Dr. Maglieri; a freshly gathered and unpeeled lemon being taken, cut into thin slices, put in three teacupfuls of water, and boiled down to one teacupful in a clean earthenware jar. This quantity of the decoction was then allowed to stand overnight in the open air, and given the first thing in the morning, after the liquid had been separated from the rind, pulp, and seeds, by careful filtration and compression just before it was drunk. A few notes of some of the cases will show the effects.

CASE I.—Miss E. J., English, aged 23, had enteric fever, of average severity, terminating about the twenty-fourth day. She was free from fever for six days, when it was discovered that her nurse had contracted the disease. The mental shock was very great, and was probably the cause of a relapse, which began the next day, and in which the temperature, taken every four hours day and night, ran very high, in spite of large doses of quinine, sponging with cold water, ice-cold compresses, and much ice to suck, until the tenth day of the relapse, when all medicine was given up and the lemon-decoction substituted. On the eleventh day, the temperature was, on the average, 1.5° Fahr. lower throughout the day than it had been for six days previously; and it never again rose to more than 102.5° Fahr., even in the evening; and she was apyretic on the nineteenth day of the relapse, and made a good recovery without the use of any other drugs.

CASE II.—Miss H., English, aged 28, had a severe attack of enteric fever, complicated by malaria, the temperature very rarely falling below 102° Fahr., even in the early morning hours after the fourth day, and generally reaching 104° or 104.5° Fahr. in the afternoon and evening, until the fourteenth day, in spite of very large doses of quinine (as much as three grammes in the twenty-four hours), iced compresses, packing in cold wet sheets, and very free sponging with iced-water. On the morning of the fifteenth day, the quinine was given up, and the lemon-decoction substituted. The highest temperature attained that day was 102° Fahr. at 4 P.M.; and, on the seventeenth day, 103.4° Fahr. was noted at 6 P.M., the highest after the use of the lemon-decoction was begun. The fall in temperature was gradual, and the patient was apyretic on the twenty-sixth day, no other means of reducing the heat having been required after the fifteenth day.

In two other cases—one an English lady, aged 35, the other an American, aged 28—typho-malarial in type, the lemon-decoction was begun earlier, with similar effects in both, the temperature not rising to the same height in either as it had done before the remedy was begun. In both, the decoction was used from about the end of the first week; and, though it had no appreciable influence in shortening the course of the attack, which it could only have by modifying the diseased process in the bowels, it certainly seemed to keep the temperature within safer limits than I am accustomed to see when large doses of quinine are used throughout.

It has also been given by me in several other cases of mild enteric fevers, with malarial manifestations; and in a few cases of uncomplicated intermittent fevers, occurring as late as May and June; and the effects observed have been as good as those of large doses of quinine. In these cases, about a dozen altogether, the temperature was taken every three or four hours; and the charts, before and after the use of the remedy, are most instructive. It has never seemed necessary to give the decoction prepared from more than one lemon daily; but there can be no reason why more than one draught should not be taken in the three hours, if required. It was noticed that freshly plucked lemons had more apparent effect than those not quite recently gathered, a serious drawback, in the meantime, to the use of the decoction in countries where there are no lemon-trees. But the active principle contained in the decoction will no doubt soon be extracted, and come into general use. What that is, is, as yet, quite uncertain, although it is obvious that it is not the citric acid. The alkaloidal principles, hesperidine and limonine, said to be obtained from lemons, are quite unknown to medicine; and no experiments have been made to ascertain their physiological properties. From the results of the use of the decoction, it seems legitimate to hope that the remedy will prove a potent, safe, and cheap antipyretic.

A NEW OPERATION FOR THE REMOVAL OF VESICAL CALCULUS IN THE FEMALE.

By SURGEON-MAJOR T. BEAUMONT, M.D., F.R.C.S.,
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A LECTURE in the *Medical Times and Gazette* of April 12th, by Mr. T. P. Pick, on the treatment of calculus in the female, in which he says the best operation for the removal of calculus too large for lithectomy is vaginal lithotomy, reminded me of an operation I devised and practised for the removal of a calculus in a girl. The following are the notes of the case.

Nundibhai, a girl aged 9 years, was admitted into the Indore Charitable Hospital on March 6th, 1875, suffering from vesical calculus. As the calculus was too large for its removal by lithectomy in a child of this age, and not liking to try vaginal lithotomy in so young a patient, it occurred to me that it would be practicable to remove the stone by a modification of the ordinary operation of lateral lithotomy in the male. Accordingly, on March 9th, I placed the girl in the position of lateral lithotomy, introduced a curved staff, and made an incision in the left labium, parallel with, and close to, the ramus of the pubis. This incision I deepened by dissecting inwards and upwards in the direction of the neck of the bladder, carefully avoiding wounding the vagina, till, at the membranous portion of the urethra, I felt the groove on the staff. On this, I divided the neck of the bladder, introduced the forceps, and removed, without any difficulty, a stone three-quarters of an inch in diameter. The after-progress of the case was most satisfactory. For some days, all the urine was discharged through the wound, which rapidly contracted, and healed within three weeks. The girl was discharged cured on April 1st.

THERAPEUTIC MEMORANDA.

A FURTHER NOTE ON CASCARA SAGRADA.

In the *JOURNAL* of March 10th, 1883, I published a short notice of the use of cascara sagrada in constipation, showing its use in almost all cases of constipation, particularly those dependent on defective perverted, or excessive action of the liver, combined with indigestion, Eighteen months further use, in several hundred cases, has fully satisfied me of the value of this therapeutic agent, and its right to a prominent position as a peculiarly suitable remedy in most cases of constipation. I have also been much pleased with its efficacy in the treatment of hæmorrhoids. By its action upon the portal system, its use often relieves the pain and congestion in those patients who decline surgical treatment. In several cases of hæmorrhoids, following delivery, the use of cascara sagrada for a few days rapidly produced a cure. Combined with glycerine, I find children take it readily; and, as it produces full easy stools, without nausea, tormina, or tenesmus, it excels castor-oil, senna, and other allied laxatives, as, after its use, the constipation is cured, and not increased.

I use the fluid extract, prepared by Parke, Davis and Co. of Detroit, in doses, for adults, of from twenty to thirty minims three times a day in sweetened water; and my further observations lead me to think that the best time for administration is half an hour before meals. I feel confident that, after a trial of its virtues, cascara sagrada will find many new friends in the profession,

J. FLETCHER HORNE, F.R.C.S. Ed.