

“RETURN CASES OF INFECTIOUS DISEASE. *

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THE subject of return cases is a very old one with Medical Officers of Health, and my excuse for reverting to so well worn a subject is the occurrence in my district of a series of secondary cases of diphtheria in houses in which a previous case had occurred and from which the primary cases as well as the secondary cases had been removed to an isolation hospital. One of the most interesting points in the series is the fact that more of the secondary cases occurred either just before the return of the primary from hospital, or a very long time after such return, than occurred soon after the return of the primary case from hospital.

The question as to the connection between two cases occurring at intervals in the same house is a very important one, because the hospital is so often blamed after what are called “return” cases.

When more than one case occurs in a house the second and following cases may occur—

1. At practically the same time as the first case.
2. Within the length of the incubation period following exposure to contact with the first case before its diagnosis and removal.
3. After the end of the incubation period and before the return of the first case from hospital.
4. During the period shortly following the return of the first case from hospital or from isolation:
 - (i.) Within the incubation period of the disease;
 - (ii.) Beyond the time of the usual incubation period.
5. Many months afterwards.

Groups 1, 2, and 5 may be dismissed at present as being accidental and impossible of prevention or independent as far as the first case is concerned.

Group 4 forms the group of so-called “return” cases.

Group 3 is important, and represents infection not from the first case direct but possibly from the same source as the first case,

or from infection left in fomites, etc., from the first case, etc.

If the time during which cases occur in this group extends beyond the time the first case is in hospital, then they pass into Group 4, and the hospital gets the credit, or discredit, of sending out a case still infective.

The circumstantial evidence against the hospital for cases in Group 4 is of course strong, and borne out by certain corroborative circumstantial scientific facts.

The series of diphtheria cases of 1908 with the history of diphtheria in Eastbourne in previous years, however, shows that it is unwise to jump to such a conclusion without consideration, and that many so-called “return” cases have nothing to do with the return of the patient in cases of diphtheria.

Certain scientific facts show that genuine return cases occur. In the case of enteric fever, for instance, recent events have resuscitated what has been known for a very long time: viz., that the infection of enteric fever will lie for a very long time dormant in a recovered patient, and that that patient may give enteric fever to others with whom he or she is brought into contact, as many as twenty or more years later. Such patients are known as “carrier” cases.

No such case has been traced in Eastbourne; but fortunately native cases are practically non-existent, and the imported ones are very few, so that there is not much opportunity to trace such cases.

In the case of scarlet fever it is usual to expect in England about 2 per cent. of return cases, but in Eastbourne as many as four years have passed without a single “return” case, and then we have had a series of such cases. When such a case is authentic and undoubted, it is invariably found, on examining the discharged patient, that there is some otorrhœa or rhinorrhœa, which has developed soon after leaving the institution.

It is frequently the fact that if a common cold occurs to a patient within a few days of convalescing from scarlet fever, the nasal discharge contains infection. It is advisable, if possible, to give the final disinfecting bath the day before discharge from hospital, so that the patient shall not be sent into the open air soon after a hot bath; convalescent wards are also advisable. Many of these so-called “return” cases, however, may be accidental and not connected with discharge from hospital, in the same way as the diphtheria

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cases I mention below must have been accidental and due to some other cause than than the discharged case.

In the case of diphtheria, with which I am here chiefly concerned, return cases are more rare. Until 1908 only one such case had occurred in Eastbourne in fourteen years, although there had been, in the aggregate, a large number of cases. In the case of diphtheria where the specific germ is known to exist on the throat, etc., it is surprising, perhaps, that in these fourteen years there had not been any return cases, for until recently it has not been the rule to examine the patients bacteriologically before being discharged, but to discharge them on clinical grounds alone.

In 1908 there were four instances where patients were sent to the hospital with diphtheria, from houses to each of which a cured diphtheria patient had been sent a few days previously. The intervals were ten, ten, twelve and twelve days. These may be called "return" cases, but the intervals are long for the incubation period of diphtheria, and there are circumstances which show that one cannot necessarily include them as "return" cases. In one case (Holloway), on receipt of the notification of the second patient, bacteriological examination of the discharged patient was at once made, and there were no diphtheria bacteria present. Moreover, later on a third patient came from the same house.

In another cases (Joyce) of these four, there was an intermediate case, beyond the incubation period of the first, showing that the infection was still lingering in the neighbourhood, and that intermediate case was taken away five days before the discharge of the first patient, so that this was probably not an instance of a "return" case. If investigation had been made in the other two instances, I have no doubt it is quite probable that these also would have been shown to have been coincidences, quite as likely as "return cases."

There were in all eleven instances where patients came from the same house as a first case, the first having returned. The intervals were in three instances as long as 110, 195 and 210 days, and in one case the same patient returned after being home seventy-five days. This shows abundantly that coincidences do occur and that it is as likely that the second patient is infected in the same way as the first patient, as that they obtain the disease afresh on the return of the first patient from hospital.

The following five instances where the second

case developed immediately *before* the return home of the first patient show even more clearly how mistaken it is to attribute the second case always to the return home of the first case:—

| | Discharged. | | Admitted. |
|-----------------|-------------|------------|-----------|
| (1.) I. Jones | Dec. 31st | W. Jones | Dec. 30th |
| (2.) S. Coomber | Nov. 17th | B. Coomber | Nov. 10th |
| (3.) W. Bontoft | Nov. 3rd | J. Bontoft | Oct. 19th |
| (4.) N. Joyce | Nov. 26th | T. Joyce | Nov. 21st |
| (5.) B. Parker | Dec. 7th | C. Parker | Dec. 1st |

These cases are striking instances which show that so-called "return" cases are frequently mere coincidences, particularly when they occur in a district from which a number of cases are being removed to the hospital at about the same time.

It is worth while, I think, to record in connection with hospitals and return cases that when for the first time in my experience a sufficiently large number of cases occurred to get a fair estimate, there were actually more instances of the secondary case occurring just immediately before the return of the patient from hospital than there were of the secondary case occurring just after the discharge of a patient from hospital.

Just a week or two ago in the hospital I attend, E. A. was discharged on February 19th, after a negative bacteriological examination, and her brother, W. A., was admitted with diphtheria on February 26th.

In the case of scarlet fever, I have not such a striking list of coincidences to quote, but in one case a patient was discharged to a house on September 22nd, and a second case occurred and was removed to hospital on September 20th.

I note the agenda states that the discussion is to include the measures that should be taken to prevent return cases.

With regard to enteric fever, in the event of cases occurring whose cause cannot be traced, it is worth while examining the dejecta of any person with whom the patients have been in contact that has had enteric fever. It is not practicable to make any enteric fever patient take precautionary measures all the rest of his or her life because of an occasional "carrier" patient.

As regards scarlet fever, besides the use of convalescent wards and dealing with adenoids and enlarged tonsils in the patient, it is, I think, of importance in this respect that adenoids and large tonsils should be attended to in every child. I have noticed that children suffering in this way are most susceptible in

scarlet fever to ear mischief. Some such throat medicament as formalin—in form such as formamint—used in the early stage is useful to prevent ear mischief. It is practically invariably the nose or ear that is the cause of a true return case.

The final disinfecting bath before discharge should not be given just immediately before sending the patient out, especially in cold weather, for this often sets up a nasal discharge where one did not previously exist.

Irrigations before discharge are useful.

In the case of diphtheria, one can find by bacteriological examination that the throat and nose are free from infection, and in cases where the infection apparently lasts a very long time the virulence of the bacilli might be tested. I need not dwell on this point, but would refer you to the very complete paper read before the Society recently on diphtheria by Dr. Savage, of Colchester.

REVIEWS.

THE PRINCIPLES OF HYGIENE AS APPLIED TO TROPICAL AND SUB-TROPICAL CLIMATES. By Prof. W. J. R. Simpson. Published by John Bale, Sons & Danielsson. 1908. Price 15s. net.

The responsibilities of Empire send Britons forth unto the uttermost parts of the earth and bring them in contact with climatic conditions which, in the absence of proper precautions, are fraught with great danger to health. Hence it is a matter of much importance for all who intend to reside in tropical or sub-tropical climates to ascertain what those precautions are, and for this purpose there is no better preparation than a study of the present volume. Professor Simpson has done well to publish his lectures, for public interest in the subject has been steadily growing of recent years and there was much need of a book that should bring together the chief facts in a handy and accessible form. The general principles of hygiene are the same the whole world over, but, as Professor Simpson points out, the methods by which they are applied need to be adapted to particular circumstances. As an example, he mentions that "because water-sealed traps, properly ventilated, are excellent and successful appliances in English towns to keep gas from the sewers gaining access to the dwelling-house, it by no means follows that they are equally useful for the tropics, where such traps are almost certain to be unsealed by evaporation in summer, and by pressure through storms in the rainy season." Tropical hygiene, therefore, while following on the lines of general

hygiene and sanitation must be applied with adequate knowledge of the special conditions of tropical climates, and must include measures peculiar to those climates.

Professor Simpson treats his subject succinctly and comprehensively. His book surveys the whole field of tropical hygiene, and on all points it is thoroughly practical and helpful. One admirable feature is the importance that is attached to measures of personal hygiene—a matter that is too frequently neglected by Europeans living in hot countries. The book is written in a lucid and highly interesting way, and it may be strongly recommended not only to medical practitioners and officials, but also to all intelligent persons who live or are about to live in tropical or sub-tropical climates.

THE FOOD INSPECTOR'S HANDBOOK. By Dr. Francis Vacher. Fifth edition. The Sanitary Publishing Co., London. 1909. Price 7s. 6d. net.

Dr. Vacher is to be congratulated on the appearance of the fifth edition of his excellent handbook. Since the first edition was published some sixteen years ago other text-books have entered the field, but Dr. Vacher's volume still holds its own, and is likely to do so for a long time to come. The present edition has been carefully revised and brought thoroughly up to date and much new matter has been added. The recent statutes and regulations relating to food are explained, the list of diseases described has been extended, and twenty-seven new drawings have been included. The size of the book, however, has not appreciably increased; it still remains a handy volume full of practical information and destitute of padding. Its continued success is a proof of its usefulness, and we have no doubt that the present edition will be as warmly welcomed as its predecessors.

THE INFLUENCE OF HEREDITY ON DISEASE, WITH SPECIAL REFERENCE TO TUBERCULOSIS, CANCER AND DISEASES OF THE NERVOUS SYSTEM. Longmans, Green & Co. 1909. Price 4s. 6d. net.

The Council of the Royal Society of Medicine have published in the present volume the discussion on heredity and disease that took place in the Society's rooms on November 11th, 18th, 26th, and December 2nd, 1908. The discussion, which was opened by Sir Wm. Church, Sir Wm. Gowers, Dr. Arthur Latham, and Dr. E. F. Bashford, contains contributions by Prof. Bateson, Prof. Karl Pearson and other distinguished authorities, and it forms the most complete modern statement of this important subject. Recent discoveries and the advance of public