

I have thought it best to report the case exactly as it presented itself to me. A brief outline, therefore, of the patient's story has been given and a few of the more interesting points discussed.

The explanation of the case presents greater difficulties. Since I can claim no special psychological training or experience, I have avoided as far as possible the use of many psychological terms. If, therefore, in an attempt to analyse the case I display my ignorance of correct psychological terminology I must crave the indulgence of the reader.

The case is obviously one of more than a mere ordinary amnesia, and yet it seems to me that the title of double personality is hardly justified. For the second personality (really in point of time the first) was only called out by hypnosis, and unless this or some other similar means had been employed would probably have never been brought to light. A true double personality can pass from one to the other state without the intervention of any outside influence. Again, in many cases of double personality, No. 1 is conscious of the existence of No. 2, and *vice versa*. In the present case there appeared to be absolutely no connexion between the two, if we except the common ability to play the euphonium. I have said that it is more than a mere amnesia, but the difference appears to be one of degree rather than of kind. Any profound psychic trauma is frequently able to produce an amnesia more or less extensive. There is no particular reason why this should not be so complete as to constitute a loss of personality. And it is that explanation of the present case which I would venture to suggest. Hence I have entitled it "A Lost Personality," rather than a double personality.

APPENDIX.

In order to simplify the general account of the case I have omitted in the text any detailed reports of the conversations held during hypnosis. In this appendix I will try to embody a few of the patient's experiences. The accounts are not, of course, strictly verbatim, and are also, I fear, very disconnected. But from notes made at the time it has been possible to reconstruct briefly some of his stories. The following is, roughly, his account of what happened to him after he had been buried in the trench.

I was dug out at night and taken to a dressing station; it was cold and dark. Then I went on to a hospital at Ypres; it was really a convent, and there were a lot of nuns about, dressed in dark robes with white hats; some of them spoke English. I stopped there for a night and a day. There were a lot of wounded there. Then I was sent on by train; I lay down all the way on a seat in the carriage; we took the whole day to get to —, and kept on stopping at stations. I was at — about ten days; I don't know what hospital it was, but there were English doctors and nurses. It was near the harbour. We came over to England in a hospital ship, the *Arethusa*; I went straight on to Manchester by train. The hospital there was really a school turned into a hospital.

Here is a brief account of a scrap with some Uhlans.

Q. Did you see any Uhlans?—Yes.

Q. What are they like?—They've got no guts. One time 30 of them were against 8 of us infantry, and they "done a bunk." Their horses were not bad. They wore helmets with a double eagle on the front.

He was asked to describe the country round the trenches and to give some account of the fighting there.

It's agricultural land, ploughed fields. There were two farms in front of us. One day we saw an old cow between

our trenches and the Germans, and we all had pot shots at it. Once the Germans rushed our trenches; we killed hundreds, bayoneted them mostly, and hit them over the heads with the butts of our rifles. It was hellish. The British were all shouting. I saw a German officer behind with a sword and a revolver. I saw a lot of French soldiers, too; they wore long coats with the corners turned back; some had blue and some had red trousers. The French Dragoons are like Life Guards, with big steel breastplates and brass helmets with a long plume; they carried swords and rifles and a few had lances.

He was asked to mention some of his impressions in Belgium and what he thought of the manners and customs of the French and Belgians.

We cut off all our buttons and gave them to the French girls. The French cigarettes are muck; you buy them in little blue packets; the tobacco is rather dark and strong. When we bivouacked on the march at night we were not allowed any lights, but you could smoke by digging a hole in the ground with your bayonet and smoking into that.

The following are some of his remarks about his stay at Gibraltar.

Gibraltar's like a great big rock; the steep side looks towards Spain. I was in barracks there, and used to spend a lot of time in the band-room practising. Sometimes we bathed in the sea. I went to Spain two or three times, and saw some bull-fights; they were very exciting, but rather too cruel for my taste. They used to kill six or seven bulls a day. The horses got fearfully cut about.

Devonshire-street, W.

THE RISKS FROM TUBERCULOUS INFECTION RETAINED IN BOOKS.

By HENRY KENWOOD, M.B. EDIN., D.P.H., F.R.S.E.,
CHADWICK PROFESSOR OF HYGIENE, UNIVERSITY OF LONDON, ETC.;

AND

EMILY L. DOVE, M.B. LOND.,
PUBLIC HEALTH RESEARCH STUDENT, UNIVERSITY COLLEGE, LONDON.

RECENTLY our advice was sought upon the policy of a large public library in reference to the books returned from houses in which cases of consumption had been recently notified, and so a few experiments were undertaken as a guide to the form which that advice ought to take. These experiments were designed to test the risks of transmission of the disease by books.

The most essential requirements of such experiments are that all the conditions of actual practice are reproduced as faithfully as possible, save that the probable dosage of infectious organisms should be exaggerated, so that our conclusions should cover "a margin of safety." No artificial conditions must be introduced and no actual condition insufficiently allowed for. Therefore, as artificially cultivated organisms generally differ in their resistance from corresponding organisms taken direct from human media, it is necessary that in such experiments the books should be infected directly from a human sufferer. Fortunately, in the tubercle bacillus we have an organism the virulence of which at any time can be demonstrated by inoculation into lower animals, since it is certain that some strains of organisms under saprophytic circumstances become harmless to humans through much attenuation or loss of virulence. The tubercle bacillus is a facultative anaerobe, capable of surviving in the closed pages of a book as well as upon the cover.

There does not appear to be on record any case of tuberculosis which was held to have been transmitted by means of books; but this circumstance does not exclude the possibility of such infection,

and several scientific inquirers into this subject have concluded that books may possibly be the means of conveying the disease.

In 1899 Flügge sought to show that consumptive patients spread infection by means of the minute droplets of tuberculous sputum discharged ("sprayed") in the act of coughing, sneezing, and speaking. Although this theory has not met with general acceptance, as one which satisfactorily explains the source of much human infection, and while it is seriously discounted by the more recent experiments of Chausée and others, it is possible that some infection may thus be transmitted. If this is a fact, there would be danger in a re-issue of public library books which had recently been read (and therefore sprayed) by consumptive readers, and the danger in this case would arise from the inhalation of dried tubercle bacilli.

Although it is rare to find tubercle bacilli in the saliva of the consumptive patient, the habit of wetting the thumb to facilitate the turning of pages is very likely to convey infection to books, for the patient's hands become infected from the handling of handkerchiefs, &c. Subsequent readers indulging in the same practice, and mostly touching the pages in about the same place, may possibly convey infection to their mouths.

There is experimental evidence that if tubercle bacilli survive at all, their virulence is lost in a few days after drying and exposure to light; and, speaking generally, infective organisms (however introduced) which survive in books must be few in number and of reduced vitality, owing to drying, exclusion of air, or a saprophytic existence at unfavourable temperatures. Therefore, it would seem that the small dosage and low virulence of infected material, introduced mostly by the mouth, would not be likely to infect a human being, even though in some cases of tuberculous infection the material collected from the soiled page might lead to the infection of a guinea-pig. The results of our experiments tend to bear out this assumption; but if the facts were otherwise the failure of public libraries and schools to disinfect books recently read by consumptives could scarcely be expected to furnish evidence of the harm where such a disease as consumption is concerned.

The working details of the following experiments were carried out, almost entirely, by Dr. Dove. In the first experiment small clean sheets of paper were issued to patients who were suffering from advanced pulmonary tuberculosis with numerous tubercle bacilli in the sputa; and the patients were asked to hold these in front of the face, and distant about 1 foot, when they coughed. After 24 hours the sheets were collected, folded so that the surface coughed upon was the internal surface, and brought to the laboratories. The papers were kept for two days under a large bell jar, when the infected surfaces were thoroughly washed (under suitable precautions) with sterilised water, and the washings (about 10 c.c.) of each paper were inoculated into the peritoneal cavity of a guinea-pig. In all, 15 pieces of paper were so exposed to the infection of 15 different sufferers, and as many guinea-pigs were inoculated from the washings obtained. Within from six weeks to two months after inoculation the guinea-pigs were submitted to a careful post-mortem examination.

The results of this experiment were as follows: One guinea pig died four days after inoculation, and, of course, the post-mortem examination furnished no evidence of tuberculosis. Eliminating

this guinea-pig, eight were found to be definitely infected with tuberculosis and six to be quite free from the infection.

This experiment was a very severe test by reason of the exceptionally large amount of recent infection collected upon a small surface, the whole of which infection was removed and inoculated. For a period of 24 hours a patient when coughing mostly coughed on to this small surface, and yet 6 (43 per cent.) of 14 guinea-pigs escaped infection.

The next experiment aimed at discovering whether such paper surfaces, similarly infected, would retain active infection after a period of one month. Therefore 12 more small sheets of paper were issued to patients suffering from advanced pulmonary tuberculosis with numerous tubercle bacilli in the sputa, and these patients were also asked to hold the papers in front of their faces, and distant about 1 foot, as often as possible when they coughed, for a period of 24 hours. The collected sheets were folded so that the surfaces coughed upon became the internal surfaces and were brought to the laboratory, where they were kept under a large bell jar for 31 days. At the end of that period the infected surfaces were separately washed in sterilised water, and the washings (or a part of them) were inoculated into guinea-pigs. Of the 12 guinea-pigs inoculated, 6 were inoculated into the peritoneal cavity and 6 received 4 c.c. of the 10 c.c. of washings into the left thigh.

The results of this experiment were as follows: One guinea-pig died a week after inoculation and another about five weeks afterwards. In neither case was there any post-mortem evidence of tuberculosis, and it was not possible to discover any tubercle bacilli in the glands. The other 10 guinea-pigs remained quite healthy two months after inoculation.

It therefore looks as if the above experiments warrant the conclusion that although a library book may be grossly infected by the cough of a tuberculous patient, and while that infection may remain active for at least a few days, the infection does not survive a period of one month.

With these results before us, it was judged desirable to ascertain whether books issued to phthisical sufferers from public libraries retained infection *in actual practice*, and, if so, to what extent. With this object in view eight books returned to the Stoke Newington Public Library, after having been recently read by notified cases of phthisis with tubercle bacilli in sputa, were examined. Guided by the previous experimental work of others, it was concluded that the parts of a book most likely to retain infection are dirty (especially thumb-marked) pages and the cover. Therefore the most dirty pages of each book and portions of the covers were carefully washed in normal saline solution, the washings centrifuged, and after the clear supernatant was decanted the residue was inoculated peritoneally into a guinea-pig. A similar practice was adopted with eight books in circulation among the patients of two sanatoriums. (These latter books were generally clean in appearance.)

As the result of this experiment two guinea-pigs early died from septicæmia, but not one of the remaining 14 guinea-pigs developed tuberculosis. These experiments confirm the results obtained by certain other workers; but they are in conflict with those obtained from some of the soiled books of the Berlin Municipal Library similarly tested a few years ago.

Next an endeavour was made to measure the risk when a consumptive patient wets the thumb and turns over the pages of a book. In the first place, instead of getting the phthisical patient himself to carry out the first stage of the experiment, we obtained some thin tuberculous sputum (rich in tubercle bacilli), mixed this with much saliva, and lightly applied this mixture to the surface of clean paper with the thumb. After two days the washings were filtered and inoculated peritoneally into guinea-pigs, with the following results: Of five guinea-pigs inoculated four became infected with tuberculosis; and a fifth guinea-pig inoculated from the washings of a piece of paper thus infected four weeks previously, and meanwhile kept folded with its infected surface inwards, also developed tuberculosis. It is certain that the infection tested in this experiment was far grosser than that which could actually occur from any patient, whatever the stage of the disease, who had moistened his thumb from his lips in order to turn over pages; but the results of these experiments suggested the desirability of an extension in the direction of ascertaining whether such *naturally* infected surfaces of paper would retain infection after the lapse of one month. Therefore 12 small sheets of paper were given to 12 patients suffering from advanced tuberculosis with many tubercle bacilli in sputa, and in each case after moistening from the mouth the thumb was smeared across the sheet. This smearing was repeated 12 times. Six of these sheets were washed after two days and the washings (4 c.c.) inoculated into the left thigh of six guinea-pigs. The other six sheets were folded with their contaminated surfaces inwards, and kept under a large bell jar for a month. After a month these papers were washed and six more guinea-pigs were inoculated with the washings.

The results of this experiment were as follows: Of the six guinea-pigs early inoculated one died after a week from acute septicæmia; and at the end of six weeks post-mortem examinations showed four to be infected with tuberculosis and one quite healthy. When the six guinea-pigs inoculated one month later were also killed six weeks after their inoculation, only one showed signs of tuberculosis, and this was limited to a single enlarged and caseated inguinal gland on the side of the inoculation.

In the next experiment, three pages of a book were smeared with tuberculous sputum teeming with tubercle bacilli, the book was closed and the material was allowed to dry for 24 hours. One of the pages was used as a control and the washings were inoculated peritoneally into a guinea-pig. After the water in the jacket of the hot-water oven had commenced to boil (when the temperature of the oven was found to be 95° C.) the other two infected pages and a shallow basin of water were placed in the oven for 30 minutes. The control guinea-pig became infected, but the washings from the two pages removed from the water-oven proved incapable of infecting guinea-pigs. Therefore it seems that the lighter infection of library books may certainly be destroyed by the suitable application of moist hot air.

To test the value of hot water in practical disinfection further, one surface of a handkerchief was smeared thickly with tuberculous sputum teeming with tubercle bacilli, and this was allowed to dry at the laboratory temperature. The handkerchief was then cut into eight small squares, and four of these squares were reserved for control purposes. In one experiment four such squares were

immersed for 15 minutes in water after it had been raised to the boiling-point and the source of heat removed. After 15 minutes the pieces of handkerchief so treated were removed, covered, and dried at the laboratory temperature; they were then washed in sterile distilled water, the washings filtered, and the filtrate inoculated peritoneally into guinea-pigs. The results of this experiment were that all the control pieces led to the infection of the guinea-pigs inoculated, while not one of the other pieces exposed to hot water for 15 minutes gave rise to infection.

The following conclusions appear to be warranted.

1. There is probably no material risk involved in the re-issue of books recently read by consumptives, unless the books are obviously soiled. Even then the risks are very slight.

2. Nevertheless, it is desirable to provide against a possible risk, however slight. This will be secured if dirty books recently received from houses in which there is a consumptive reader are not re-issued until such books have been either disinfected or placed "in quarantine" in a separate room for the period of a month. It will be desirable to disinfect such a room from time to time. When such books are very dirty they should be withdrawn from circulation. The loss involved would be much reduced in time if the borrower could be temporarily deprived of his right to borrow when a book is brought back in a badly soiled condition.

3. It would be well to demand (upon a printed and gummed slip) the following precautions of all readers: (a) Not to cough into a book; always to cough into a handkerchief. (b) Not to moisten the fingers when reading; the hands should always be dry and clean. (c) Always to keep the book closed when it is not being read.

4. Moist heat is a simple means of destroying the infection of tuberculosis on those library books which are not likely to be injured by such a method. For this purpose it is not necessary that the temperature should reach 100° C., although it should approximate to that; nor that the exposure should exceed 30 minutes.

It is proposed to extend these experiments with the object of learning if hot moist air can be efficiently employed for disinfecting purposes without causing injury to well-bound books.

A NOTE ON A CASE OF PRIMARY HEPATIC CARCINOMA OF THE "CIRRHO-SIS CARCINOMATOSA" TYPE.

By F. PARKES WEBER, M.D. CANTAB., F.R.C.P. LOND.

THE patient, a male, aged 63 years, was admitted to hospital on Sept. 10th, 1914, suffering from jaundice and ascites. He was a corpulent, coarsely built man, who in his occupation of restaurant keeper had been accustomed to indulge freely in alcoholic drinks. The history was that he became jaundiced for the first time six weeks before admission. During the last fortnight he had been troubled with loss of appetite and inclination to vomit. Before the present illness he was not supposed to have had anything serious the matter with him.

In the hospital.—The patient was much jaundiced, but his fæces were not "acholic." Evidently bile was passing into the intestine. On admission the hepatic dullness extended slightly below the costal margin and there was some ascites. The heart