lectureship founded in memory of one whom he could claim as one of his teachers, and for whom he always cherished the greatest regard. But he was especially glad of the opportunity of performing this function for two other reasons: first, as affording an opportunity of expressing the pleasure that all physicians had of forging the links between psychological medicine and general medicine, and it was clear, from the lecture which had just been delivered, that there were many such links, and that if preventive medicine and psychological medicine were to progress, the two must work hand in hand. He was also glad to have the opportunity he was now enjoying, as it was an occasion on which the President of the College of Physicians of London had the opportunity of welcoming a President of the sister College in Edinburgh. (Applause.)

Dr. J. G. SOUTAR, in seconding the vote of thanks, said he thought everything appropriate to the occasion had already been given expression to, and the applause which greeted the graceful tribute of the President of the College of Physicians of London was an index of the response which the vote would receive.

The vote was carried by acclamation.

Prof. ROBERTSON, in reply, said he had to thank all present for the very appreciative way in which they had received this vote of thanks, and for attention given to what had been, he feared, a rather long address.

THE ANNUAL DINNER.

The Annual Dinner, which this year also commemorated the granting of a Royal Charter, was held at the Victoria Hotel, Northumberland Avenue, in the King Edward VII Rooms, Thursday evening, July 15.

The Chair was occupied by the President, Lt.-Colonel J. R. LORD, *C.B.E.*

The company were received by the President and Miss Edith Lord, at 7.15 for 7.30 p.m., and the guests included: Sir George Hume, *J.P.*, *M.P.*, Chairman of the London County Council; the Hon. Eleanor Ritchie and Councillor Mrs. Dunn Gardner, *J.P.*, Members of the L.C.C. Mental Hospitals Committee; the Rt. Rev. the Lord Bishop of Southwark; the Rt. Hon. Hugh Macmillan, *K.C.*, Chairman of the Royal Commission on Lunacy, etc., and Mrs. Macmillan; A. Snell, Esq., *K.C.*, and Mrs. C. J. Matthews, Members of the Royal Commission; Sir Arthur Robinson, *K.C.B.*, Permanent Secretary, Ministry of Health; Vice-Admiral Sir R. Hill, *K.C.B.*, *K.C.M.G.*, Hon. Surgeon to H.M. the King; Sir StClair Thomson, President, Royal Society of Medicine; Sir Dawson Williams, *C.B.E.*, Editor of the *British Medical Journal*; Sir Squire Sprigg, Editor of the *Lancet*; Professor G. Elliott Smith, F.R.S.; Sir John Collie; Lt.-Col. S. P. James, Medical Officer to the Ministry of Health; Prof. C. S. Myers, F.R.S.; Montague H. Cox, Esq., Clerk to the London County Council; H. F. Keene, Esq., *O.B.E.*, Chief Officer, and J. Malcolm, Esq., Engineer, Mental Hospitals Department, L.C.C.; G. A. Powell, Esq., *C.B.E.*, Clerk to the Metropolitan Asylums Board.

Letters and telegrams of apology for absence were read from the Rt. Hon. Lord Riddell and Sir Arthur Newsholme, *K.C.B.*, Dr. F. C. Shrubsall and others, all of whom had accepted the Association's invitation to be present.

Among those invited to attend and who wrote expressing their regret at their inability for various reasons to do so were H.R.H. the Duke of York, the Lord Chancellor, the Minister of Health, the Lord Bishop of London, the President of the Royal College of Physicians, London, the President of the Royal College of Surgeons, England, and the Principal of the University of London, Lord Dawson of Penn, Lord Southborough, Lord Justice Atkins, Sir Walter Morley Fletcher, Sir Leslie Scott, Sir William Hale White, Sir Robert Phillips, Sir E. Cooper Perry, Prof. Starling, A. Taylor, Esq., *M.P.*, Lt.-Col. F. E. Freemantle, Major W. E. Elliott, and others.

There was a large attendance of honorary and ordinary members and their guests, and the gathering was thoroughly representative of those interested in psychological medicine and the care of the mentally afflicted, and among others included several Commissioners of the Boards of Control for England and Wales and for Scotland, and Lord Sandhurst, the Lord Chancellor's visitor.

The croupiers were Dr. R. Worth, Hon. Gen. Secretary, Dr. Douglas McRae, Co-Editor, *Journal of Mental Science*, the late Dr. R. H. Cole, and Dr. J. W. Geddes.

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Toasts.

"The King."

The President submitted the toast of "The King," and it was loyally pledged to the accompaniment of the National Anthem.

The President then said: My Lords, Ladies and Gentlemen,—Our Annual Dinners, the first to be held in London being at Morley's Hotel in 1843, have been ever distinguished for good fellowship, eloquence and wit. This year for the first time within my recollection song will be added,(1) which means that speeches will need to share with the newcomer the short time at our disposal. I am sure this will be welcome news to those whose duty it will be to propose and respond to toasts. We will commence with song.

"The London County Council."

Dr. J. Greig Soutar proposed the toast "The London County Council." He said that when he was asked to undertake this function he was taken aback, and he was somewhat appalled at the magnitude of the duty. London was, in all conscience, big enough as a toast, but to deal with the rulers of London was an infinitely bigger task, and there need be small wonder that he was staggered at what was expected of him. The functions and the activities of the London County Council were so numerous and so varied that they made an appeal to every special interest. He could imagine many ways in which this toast might be approached by different bodies. For instance, if this happened to be a meeting of historians he did not doubt there would be delivered a very interesting and learned account of the history and the government of London, and the speaker might point to the London County Council as a very advanced, but perhaps not a final stage in local government. If there were a meeting here of sanitary engineers, he did not doubt that the gathering would be told there were nearly 400 miles of sewers—possibly not a very delectable subject for post-prandial oratory. The spokesman on the subject of education would, no doubt, point to the wonderful ladder that the London County Council had provided by means of which the boys and girls of London might climb, through the elementary and secondary schools and technical schools, to the university itself. But he hoped the speaker for that body would not lay too much stress upon intellectuality as being the only purpose of education. (Hear, hear.) Or this might be a gathering of architects, and the spokesman for that profession would have to be both courteous and truthful. (Laughter.) No doubt he would "let himself go" on the glories and the beauties of the County Hall, and it was very likely that he would point to the influence of artistic environment in creating that extraordinarily harmonious atmosphere which, he understood, prevailed at all the meetings of the Council. The speaker might even suggest that the County Council might occasionally loan that hall to another body when they had one of their recurrent attacks of "nerves." But perhaps he would be a little more careful and more diffident when he spoke about the new Piccadilly Circus, and the Bridge, about which a good deal had been heard of late. Or this might be a gathering of horticulturists and gardeners, and they would be able to speak only in terms of high appreciation of the very fine parks which the County Council maintained, where the poorest citizens of the land could derive a pure and sheer joy from the flowers and the shrubs, such as only the richest could provide for themselves at great cost. And so it was throughout the whole range of the work of the London County Council; there would be something which would make a special appeal to those pursuing any particular sphere of work. But for this Association, as a medical organization, all these matters of drainage, education, school clinics, architecture, finance, were but incidents—important incidents, he admitted—in the pursuit of the one great underlying purpose in which they as medical men and the Council were united, that of providing for the community the highest standard of health attainable. (Hear, hear.) If any and every activity of the Council were scrutinized, it would be found that it was based upon, and inspired by a desire to give practical effect to, the teachings of medical science. That was the Association's approach to the Council, that was where and how they and we are linked together.

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(1) The "Westminster Quartette" and other glee singers have in the past sung at our Dinners.—Eds.

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There was one duty of the Council which could not be passed by at a meeting of this sort. They were the responsible authority for, he believed, ten mental hospitals. It was well known what excellent institutions they were, not only as homes of refuge—asylums in the real meaning of that word—homes of refuge for the storm-tossed, they were actively living centres of medical research and endeavour. (Hear, hear.) Incidentally, he might say that the pleasure felt by the members at having Colonel Lord as President redounded to the credit of the County Council, who, some years ago, saw in him the promise of those qualities of head and heart which, in their fulfilment, had won the appreciation and high regard of his colleagues. (Applause.)

But those present could not think of the County Council without having in their minds Colonel Lord's immediate predecessor in the chair; but this was not the time to strike a note of sorrow. Sir Frederick Mott was not with us now, yet he lived, and he would live for years beyond our time, in the fruitful work he did for the benefit of his fellow beings, work which was made possible for him by the fact that opportunities were offered him and he seized them; the opportunities came in the laboratories and the wards of the L.C.C. mental hospitals. His great work could not have been accomplished had it not been that such opportunities were placed in his way by the London County Council. And it was to some extent through Sir Frederick that the Maudsley Hospital was established on lines which enabled treatment to be obtained in the early stage of mental disorder, in which stage, as members of the Association knew, recovery could often be quickly obtained. So confident were alienists of this, that he believed the accumulated experience of the Maudsley Hospital had helped to pave the way for a beneficial change in legislation. (Applause.) That, too, redounded to the credit, not only of the late President, Sir Frederick Mott, but also to that of the London County Council, for whom he worked so long. For the part they had played in furthering the work of the late President of the Association, and for the enlightened way in which they had given effect to the teachings of medical science, members of that Association, and the whole profession, owed a debt of gratitude to the London County Council. It was gladly acknowledged. In the still firm conviction that they would continue to be fellow-workers in the long and strenuous struggle which still lay ahead for those now active, for their successors and the successors of members of the Association in further diminishing the far too heavy burden of suffering and disability, he commended the toast to the company, and he had the pleasure of associating with that toast the name of Sir George Hume, the Chairman of the London County Council. (Applause.)

The toast was cordially pledged.

Sir George Hume, J.P., M.P., Chairman, London County Council, in responding to the toast, said Dr. Soutar had referred to the London County Council in terms much more magnanimous and complete than any he had heard before, and he had to thank that gentleman for his eloquent words, and for the good wishes he had expressed. He had undoubtedly opened before the speaker many lines of advance in making the reply, and so he might have inflicted upon the gathering a very long speech, but since he had been occupying the chair of the London County Council he had found that it was often safer to listen than to speak. Meeting such a distinguished company of people who had been devoting their lives to this very difficult line of work as was now the case, it did not behove those who had to deal with the governing side of things to say too much; they had to listen, and to help in the work which had to be carried out in the future. Some reference had been made to the condition of affairs within the Council Chamber. He was glad to say that since the meetings had been held in the new County Hall, the members generally had completely altered their manners; the only rivalry between them now was as to the speed at which they travelled. He did not think they had any reactionaries among them. They realized that the world was not standing still, and that there was great need of improvement. He was happy to think that amongst those who were working for the London County Council were distinguished officers whose names were known throughout the world, one of them having been honoured by the Association as its President. (Applause.) All he could do was to modestly retire to the rear while those who were really carrying forward the work spoke to the gathering. But he did wish to heartily congratulate the Association on having secured its new Charter, and he hoped this Royal Charter would stimulate the Association to continue in its great work, a work

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which had been done so efficiently hitherto; and he wished the Association every success in the future. (Applause.)

"THE UNIVERSITIES AND THE ROYAL COLLEGES."

Dr. R. PERCY SMITH, in proposing this toast, said that it was necessary to mention our old great Universities in this country, those of Oxford and Cambridge. The University of Cambridge he could claim to have a small acquaintance with, because as far back as 1867 he passed the Junior Cambridge Local Examination. (Laughter.) Subsequently he went up for the Senior, and passed that too, which served him as an entrance examination when he became a medical student. He had not the opportunity of going to Oxford or Cambridge, but he entered the University of London, and it was very kind to him at the end of his time. Oxford, Cambridge, London and Durham were our old universities. In his list of other universities were also Birmingham, Leeds, Manchester, Liverpool, Bristol, Bradford, and Reading. The University of Leeds honoured him by appointing him one of its Examiners. In Scotland there were the old universities of Edinburgh, Glasgow, St. Andrews and Aberdeen. A friend on his left said they could flood England with graduates from Scotland, and there was no question that many graduates from Scotland came to study medicine in London and other English towns, and we were always delighted to see them. In Ireland was old Trinity College, Dublin, the National University, and the Queen's University, Belfast, and he understood there were universities, or university colleges, at Cork and Galway, so that in that country university education was spreading. In Wales were the Universities at Cardiff and Aberystwith. All those universities produced medical graduates, and large numbers of them were students in London hospitals for a time before graduation.

With regard to the Royal Colleges of Physicians in the three countries, all those bodies had recently taken more notice of the special work of the Association than they used to do. Diplomas in psychological medicine were granted now by many of these bodies. At present the Conjoint Board of England granted diplomas in psychological medicine, and it was very encouraging that this branch of medicine should not be considered as a kind of offshoot which could be neglected. It should be recognized how important a branch it was, and how closely it was connected with general medicine and surgery. The Association was in the delightful position of having present the President of the Royal College of Physicians of Edinburgh, a distinguished member of the Association and a former President. He had also been asked to include in the toast Dr. William Brown, who represented the University of Oxford; he was the Wilde Reader in Psychology there, and he was well known as a distinguished psychologist. He understood that during the war Dr. Brown was medical officer to the hospital for soldiers who had a mental breakdown. He understood Dr. Brown's work was now pure psychology, and not the practice of medicine. The other respondent to the toast was Prof. Robertson, of Edinburgh, the President of the Royal College of Physicians there, who was known intimately in the Association. When the speaker was Assistant Medical Officer at Bethlem Royal Hospital, Prof. Robertson for some months used to go round and listen to the teaching of the late Sir George Savage His friendship with Prof. Robertson began then, and he was happy to say it continued still. The position he had reached as President of the Royal College of Physicians of Edinburgh was one which not only reflected great honour on himself, but also on the Association. He had much pleasure in submitting the toast.

Prof. G. M. ROBERTSON, *P.R.C.P. Edinburgh*, in replying to the toast, said the presence of this toast on the list was an indication of the great interest that the Royal Medico-Psychological Association took in the subject of medical education. Its activities were first of all directed to the training, examination and registration. of mental nurses, and thirty years before what might be termed the senior branch of nursing—he referred to general hospital nursing—had the advantage of a uniform system of examination and registration provided by the State. The Cinderella of the nursing profession—that of mental nursing—enjoyed all the advantages of this under the ægis of the Royal Medico-Psychological Association. The sphere of influence of the latter was not limited to this country, it was imperial, and extended to the Dominions and Colonies, and, through its excellent Hand-book on mental nursing, it had an influence in the United States as well.

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The Association had also been instrumental in obtaining the establishment of diplomas in psychological medicine, which had been founded by the universities and the Royal Colleges in order to stimulate and improve the education of the medical officers in the mental hospitals in the special branch of medical work which they had taken up. Many members of the Association who enjoyed posts near the medical schools also gave lectures on mental diseases to undergraduates as part of their medical curriculum and clinical demonstrations at the mental hospitals to which they were attached.

The first person to give systematic lectures on mental diseases in this country, in the year 1823—that is, more than a hundred years ago—was Sir Alexander Morison, who was afterwards physician at Bethlem Hospital, an institution of which all members of the Association were very proud. He delivered courses of lectures every year in London, and also in Edinburgh. And, like the good Scotsman that he was, he delivered the first lecture in Edinburgh. Those were not the days when one could travel comfortably in the " Flying Scotsman " at 60 miles an hour —if there was no strike—nor when one could whizz along the Great North Road, if one was certain there was no " trap " along it, at even more than 60 miles an hour at certain places. Sir Alexander overcame all the difficulties and jogged along at 15 miles an hour, and he laboured for thirty years in Edinburgh, and was succeeded by Skae and Laycock and Clouston. In this way lectures on mental disease had been delivered in the University of Edinburgh for more than a hundred years continuously—a record which was not exceeded by any other medical school of the world, not even by that of Paris. It was interesting to know the source of inspiration of Sir Alexander Morison. It appeared that Esquirol—in the speaker's opinion the greatest psychiatrist who had ever lived—began to deliver lectures in Paris in 1817, *i.e.*, two years after the Battle of Waterloo was fought. He did not expect that Englishmen were in great favour in Paris at that time, but the French had always had a friendly feeling for the Scot, and there were three distinguished Scotsmen who attended these lectures. First there was Sir Robert Christisson, who introduced in his course of lectures on mental diseases the question of criminal responsibility. Then there was Andrew Duncan, who wrote a book on mental derangement, and who helped to found a readership in psychology in Edinburgh. There was also Sir Alexander Morison—and he wished to say what a pleasure it was to have present this evening his grandson, Dr. Blackall Morison. So impressed was Sir Alexander Morison with the lectures delivered by Esquirol that he himself decided to lecture, and he did so. Esquirol was a pupil of Pinel, the centenary of whose death took place in the present year, and the French alienists and neurologists were holding a special commemorative meeting at their Congress this year at Geneva and Lausanne, to which the Royal Medico-Psychological Association would be sending a representative and a special letter to congratulate their French colleagues on the great work which Pinel had done. Esquirol and Pinel were wonderful men ; Esquirol was a fluent speaker and a great teacher, but Pinel was not known to have spoken four consecutive words on the subject of mental diseases, but he was a man of culture and feeling, a man of ideas and of action. The humane treatment of the insane, by Philippe Pinel, dated from the time of his appointment in Paris in 1793. It must not be thought that Pinel was the only humanitarian of that period ; there was a wave of humanitarianism passing over the world. In 1788 Wilberforce formed the Association for the Abolition of the Slave Trade, four years before the Paris mob stormed the Bastille, which, according to Carlyle, was one of the most memorable events in the history of the world. In 1790 John Howard died, his life had been devoted to doing so much for those who were confined in prisons, and by drawing attention to the fact that the prisons contained many insane persons. Howard also did much for the better care and the amelioration of the lot of the insane. This year happened to be the bicentenary of the birth of John Howard, and, because of the great work he did, the speaker hoped this Association would not allow this bicentenary to pass without specially commemorating it in some way. In Paris, Florence, York and Edinburgh there were independent movements for the amelioration and the care of the insane in the early 'nineties of the eighteenth century. The epoch was indelibly stamped with the name of Pinel, but the stage on which he performed was that created by the French Revolution, on which the eyes of the civilized world were then fixed, and the scene which he enacted was dramatic. He struck off the chains with which his patients were bound. His reputation as

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a reformer was fully deserved, but it was of interest to note that a year before this episode occurred, namely, on March 3, 1792, William Tuke, at a meeting of the Society of Friends in York, proposed the foundation of "The Retreat"; but it was not so well known that, six days before Tuke made this proposal, the Lord Provost of the City of Edinburgh, at the instigation of one of the speaker's predecessors, Andrew Duncan, lodged a scheme for the formation of the Royal Mental Hospital at Morningside. Neither institution was opened until some years afterwards, so that neither could compete with Pinel for the beginning of the humane treatment of the insane.

Finally, with all the responsibility which attached to him as President of the Royal College of Physicians of Edinburgh, and as a former President of the Royal Medico-Psychological Association, he wished to say that, taken all round, there were no mental hospitals in any country in the world which could compare, for management and consideration for their patients, with those in this country. There might be more research performed in certain mental hospitals in Germany; there might be certain mental hospitals in America which had reached a very high standard, but not a higher standard than in this country. He repeated, there was no country in which the average level was so high as in this. He did not complain of criticism, because criticism, if taken in the proper spirit, did good. He only felt sorry for the unnecessary pain it might cause friends of patients who were treated in their mental hospitals, which were a credit to this country.

Dr. WILLIAM BROWN (Wilde Reader in Mental Philosophy, University of Oxford) also responded to the toast. He said the honour had been put upon him of answering this toast of the Universities. Dr. Percy Smith had already relieved him of the necessity of enumerating them and dealing with them *seriatim*, for which he thanked that gentleman. He had connection with only two, and they were enough for him. One was the university which used to be looked upon as the place where one made friends and learned to carry one's wine like gentlemen, and to conceal the fact that one did any work; in fact men did their work in the vacations, and that was why the vacations were so long. The other university, that of London, was a very different affair, because there one needed an iron nerve if one wished to get through one's exams.; it was a test of solid endurance. His friend, Prof. C. S. Myers, was here this evening and he should be answering for the Universities rather than the speaker, because Cambridge had done so much more on the purely scientific side of psychology than Oxford had been able to do. But at Oxford they considered they had done well enough. There was a man, John Locke, over 200 years ago, who founded modern psychology. He was a graduate of the speaker's college, and when he was at work there he was thought to be an awful crank; the other dons could not stand him, and at last they got rid of him. Dr. Brown had never been at a public dinner in Christ Church without some reference being made to him. So he had evidently left something behind him to impress even the students of Christ Church.

Psychology was the science he was supposed to be speaking for in connection with the Universities, but there was physiology too, and physiology was considered as of a certain importance in medicine, but not very much. When men went down from Oxford and from Cambridge to London to do their real medicine, they were urged to forget their physiology. It was advice which was superfluous, because they had forgotten it before they reached the London hospitals. He did not know whether it was true of psychology; he hoped not. It was often considered to be a sort of joke against university psychology that it was academic. He did not know whether those people were aware of what academic meant, whether they thought it was a psychology not of any particular good, which one could put aside when coming to real work. But as a matter of fact, certainly at Oxford, the kind of psychology which had been taught and studied had been of a different nature. Instead of being "academic," and behind the times, it had been ahead of the times. Certainly Prof. William McDougall, long before one knew about the new psychology, was teaching its principles at Oxford. If he, the speaker, might be allowed to make one reference to himself, he persisted in doing practical psychology as well as theoretical. Dr. Percy Smith said he, the speaker, now did pure psychology and did not practise medicine, and presumably that meant Dr. Percy Smith had not seen any patients of his. But he did practise medical psychology, and he intended to continue to do so, and if Oxford did not allow him to do so, he would cease to be at Oxford, and would come to London. Modern

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psychology must be medical. If anyone was going to teach psychology in the University he must not only be medical, as the greatest psychologists had been, such as William James, Wilhelm Wundt, William McDougall and C. S. Myers and others, but it was revealing the secrets of the mind in a way that no other method of study had succeeded in doing. Psychology must be based on deep analysis of the individual.

As to the place of psychology in the university, it seemed to him that the psychology there must also be studied from the general philosophic point of view, with that sense of proportion, that sort of intellectual "good form" which avoided over-stressing of any particular line at the expense of the rest. The duty of university psychology was to see that the various movements which arose from time to time were kept within bounds, and were brought into relation with general knowledge; so that new thought, suggestion, psycho-analysis, whatever it might be, must be considered in reference to a general system. So in relation to psycho-analysis, which the Association discussed this morning, one felt that the attitude of "not a minute on, not a penny off" as regards Freud's teaching was the wrong attitude from the point of view of a University. In the end, the attitude must be the general philosophic one, as was expressed by the degree that was now given in practically all universities. The Degree of D.Ph. was given, not for special knowledge in metaphysics, but for knowledge in the various sciences from that general philosophic point of view.

He expressed gratitude for the toast on behalf of the Universities.

"The Royal Society of Medicine and the British Medical Association."

Dr. Bedford Pierce, in proposing this toast, said that since he attended one of these dinners he had had the privilege of a visit to America, and in connection with that an idea came to him which would have been very useful to him in his present predicament. It was contained in a story of a man who lived in the Middle West, and who was perpetually grumbling and depressed over his business and other affairs. But one morning he arrived at his business premises full of good temper and cheerfulness. His friend asked him what was the matter, and his reply was that he had a new idea—that he had decided to hire a young man to take over all his worries. The friend said, "How can you afford it if your business is so bad?" He said, "I have been thinking about that; I shall have to pay him a pretty good salary, and I thought about $5,000 a year would do." "But how will you find it?" "Oh! that will be the young man's first worry." He, Dr. Bedford Pierce, wished he could afford the assistance which would help him in his present predicament, because he had to propose prosperity to two great medical institutions, and he felt himself utterly unable to cope with it, even though he had been a member of both those institutions during the greater part of his life. He wished, nevertheless, to express some words of sympathy with those who carried on the work of these associations. Speaking first of the British Medical Association, if anyone felt any doubt as to the value of that Association to the profession, he commended to him a perusal of the red book, which gave advice to young medical practitioners. He was certain that if the book were read, it would result in a desire that it be placed on the compulsory curriculum of the medical profession, as a knowledge of the contents of the book would do much to lessen pain and bitterness in professional life, and save vast troubles everywhere. He had to refer particularly to the journal. Sir Dawson Williams had to respond to the toast, and he had been assured that that gentleman must have plenty of worries. How it was possible to carry on that journal as he did, with the multitude of articles sent to him, and the prolixity of medical correspondents and writers, he could not conceive. It was a great achievement, and the profession was much indebted to him for the journal, which went to 30,000 medical families. He only hoped that the stock of blue pencils would hold good. Personally he would like the type to be a little larger and the articles more condensed. He wondered who, among those who had sent articles to the *British Medical Journal*, would not admit that the article could have been reduced to at least half its dimensions without loss to the profession or of credit to the writer.

He had been asked to refer also to the Royal Society of Medicine, that great body which had co-ordinated the various medical societies in London, or most of them, and seemed to have contrived to bring together the various bodies and make

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of them a harmonious whole. The profession was proud of the Royal Society of Medicine, and especially proud of its wonderful Library, which, he believed, was unequalled anywhere in the world. The Royal Society of Medicine must have its penalties, and its President doubtless had his worries. When he thought of presidents of societies having to sit in a conspicuous place and listen to lengthy orations by verbose speakers, he had often deemed it unfortunate that they could not sit near the door and slip out for a cup of tea while the lecturer was demonstrating a diagram on the screen. But a president could not even close his eyes for a moment for philosophical meditation; he had to listen to it and to be intelligent through it all. Perhaps a president's worries could be lessened by a contrivance of Herbert Spencer's. When Herbert Spencer was in conversation and he found it tedious, he inserted a pair of ear-stoppers into his ears, and these enabled him to retire within himself. Perhaps the presidential table of the Royal Society of Medicine could be provided, besides the ivory hammer, with some sort of gilded ear-stopper.

The Society very gladly welcomed the representatives of these two great, learned bodies at its board, and was very pleased they had come to join in the commemoration of the granting to it of the Royal Charter. They were particularly grateful to the two gentlemen who would respond to this toast for their own individual service in the cause of the profession, and for the great work they had done to help all its members.

Sir StClair Thomson, President of the Royal Society of Medicine, in responding for that Society, said he was a throat doctor, and he had been taking a lesson in elocution from the toast-master. (Laughter.) In regard to what had been said by the proposer of the toast, he could quote a great actor, and a great artist, Mr. George Grossmith, and say, "We do not believe you." He regretted that, because the great Bacon said, "A little lie doth greatly please." However, in replying to this toast he was able to break a record. The Chairman said that ever since the year 1843 all the speeches at these dinners had been celebrated for their eloquence and wit. In breaking that record he felt very like the tourist in Italy. If this story were told in England, the teller must say the tourist was an American, and when telling it in America, the tourist must be described as an Englishman. The tourist saw a lamp alight in front of a sacred image, and the guide said the lamp had not been out for 500 years, whereupon the tourist gave a vigorous puff and said, "I guess it's out now!" Talking of Americans in Italy reminded him of the Americans who went up to the Capitol, where they kept two wolves in a cage, in memory of the time when Romulus and Remus, who founded Rome, were suckled by a she-wolf. Some American tourists came into the hotel and said to the English visitors, "We have been up to the Capitol, and there we saw the two wolves who suckled Romeo and Juliet." (Laughter.) Sitting next to the Right Rev. Prelate reminded the speaker of another story from the same country. In Italy there was a great Cardinal named Rampolla. There was a statue in the Borghese Gardens, which showed Apollo chasing Daphne. These Americans came into the hotel and said, "We have been in the Borghese Gardens and seen a most interesting statue, which shows Rampolla chasing Daphne." Sitting in such company made him feel like the Scottish minister who, when he got into the pulpit one day, found he had come without his sermon, and he said, "My dear friends, I am sorry to tell you that I find I have come out this morning without my sermon so that the words I am about to address to you must depend upon Divine inspiration, but this afternoon I will be better provided." (Laughter.)

He did not think he had come with the least regret; quite the contrary. He agreed with our Poet Laureate in the ode where he said:

> "I love to meet my fellow men at pleasures of the table;
> I go to public dinners when I'm fit enough and able;
> I love the talk that comes between the pottage and the peaches,
> But view with a dejected mien the speeches."

Still, he was reminded of his friend, Dean Inge. The speaker asked him, some years ago, to come to a medical dinner, and said he believed the Dean had the reputation of liking public dinners. He wrote in reply saying, "It is a fact I like public dinners; I like particularly public dinners of doctors, because I love to see there is another profession besides my own which does not live up to its principles." (Laughter.) Shakespeare said good company, good wine, good fellowship can make good people. It would be seen that that good man put wine where it should be, not

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at secret drinking, but at table between good company and good fellowship; and for this good company, this good wine and this good welcome, he thanked the Association, on behalf of his Society, most sincerely.

Sir DAWSON WILLIAMS responded on behalf of the British Medical Association. He wished, he said, to make some further reference to the Royal Medico-Psychological Association's late President, who recently died in harness. He was a man of very exceptional qualities, whom the speaker had known practically all his life. They entered University College Hospital on the same day, and he had always been the same steady and judicious personality. Sir Frederick Mott had succeeded in introducing into the specialty of mental disease a degree of precision and a scientific atmosphere which it had not had before. He did not leave psychiatry where he found it, but made to it the most important contributions of any man of our time. He took men away from the current views on psychology to the brain, like the speaker's master, Bastian. Mott sheared away a great mass of material which was of no value whatever to psychiatry. He might not always have been right, but he was a sincere believer in science and in the possibilities of improving the human race. Probably the Chairman of the London County Council would agree that Sir Frederick Mott was one of the ablest servants that body ever had.

He was very glad he was allowed to speak for so august a body as the British Medical Association, and that the Royal Medico-Psychological Association had seen its way to meet in the British Medical Association House. He hoped that in a few years that body would be able to offer the Association more accommodation if required. The Royal Medico-Psychological Association had shown its willingness to become associated with the general practitioner and to come down from its high towers and out of its beautiful gardens, to take an active part in teaching psychological medicine to medical students, thereby enabling the practitioner to treat cases for their mental troubles in their homes, and thus in many instances avoiding certification under the Lunacy Acts. He thanked the company present for including him in this toast.

"THE GUESTS."

Sir FREDERICK WILLIS, *K.B.E.* (an Honorary Member), submitted the toast of "The Guests," and in doing so said his list of guests embraced a remarkable number of distinguished names. It was a great pleasure to see at this gathering the representative of the Metropolitan Asylums Board, Mr. Powell. That body was always very efficient and helpful, and Mr. Powell was a great assistance in times of trouble. There was also present Sir Arthur Robinson, the Permanent Secretary of the Ministry of Health, which Government department he regarded as the most important in this country. He was sorry the name did not carry a reminder of its predecessor, the Local Government Board; it was still the Local Government Board, with a number of other functions Sir Arthur Robinson had had a most distinguished career. After doing very well at Oxford and joining the Civil Service and securing first place in the open competitive examination for the Civil Service, he went to the Colonial Office, and passed through one or two other offices, eventually coming to the Ministry of Health. Sir Arthur had very great sympathy with the subject of mental affliction, and when the Board of Control was in a difficulty he was always most helpful. And the company included Colonel James, who had rendered much service in connection with the treatment of general paralysis by induced malarial infection. He was the man who looked after the mosquitoes and showed how to use them to secure the proper results. Another gentleman on the list was Admiral Sir Robert Hill; another was Dr. Myers, who had done much for industrial psychology, and Sir John Collie, who was the enemy of the malingerer. Professor Elliot Smith was also present, and Sir Arthur Newsholme was to have been present. The latter was at one time the Chief Medical Officer of the Local Government Board, and was responsible for introducing a government scheme for dealing with venereal diseases. Prof. Robertson said in his Maudsley Lecture that the clinics for venereal disease which had been established had had a very important effect in reducing the amount of preventable insanity. It was also very gratifying to see the Chairman, also Mr. Snell, and Mrs. Matthews, of the Royal Commission on Lunacy. When it was first proposed to hold this Commission, the speaker had doubts as to whether it was

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wise; there had been so many unfounded attacks on the lunacy system in this country that it seemed to him they were hardly worth noticing. He saw a member of Parliament who had made specific statements about the treatment of two cases. The speaker got full particulars of those cases, and convinced the member of Parliament that he was entirely wrong. He therefore asked him to withdraw the allegations, but while he admitted they were without foundation, he remarked that unless a very lurid picture were painted, the public would not be got to take any notice. That seemed to be the sort of attack which was generally made. But after watching the operations of this Lunacy Commission, under the very able chairmanship of the Rt. Hon. Hugh Macmillan, he was convinced that their work had done a great deal of good, and he wished to say how very much those concerned with lunacy were indebted to Mr. Macmillan for the way in which the inquiry had been conducted. It was known that Mr. Macmillan had reached the top of the tree in his profession in Scotland before he came to England; it was now impossible to add lustre to his name.

He had much pleasure in submitting this toast, and coupling with it the names of the Rt. Hon. Hugh Macmillan and the Lord Bishop of Southwark.

The Rt. Hon. HUGH MACMILLAN, *K.C.*, in responding to the toast, said that having observed the very manifest appreciation which the guests had shown for the good things spread before them by the Association's hospitality, he was glad he had to reply for the guests, not to answer for them. After listening to the far too laudatory remarks which his friend Sir Frederick Willis had been good enough to make about him, he thought that if Dr. Percy Smith had been called upon to examine him, the speaker, professionally, he would have said that his state was one of combined aphasia and exaltation—aphasia due to his inability to express, in appropriate terms, his gratitude for the kind remarks; exaltation because of his great appreciation of the kindness shown. Sir Frederick had made observations about the work of the Royal Commission, but he had not seen the Report—(Laughter)—and he would like to state that he, the speaker, had booked a passage to Canada next month, in order that he might escape from the consequences of his temerity, as a mere Scots lawyer and layman, in invading a domain which was the peculiar province of this gathering of experts. But he was glad to have the opportunity, in the presence of the Royal Medico-Psychological Association, of saying how deeply indebted he was, as Chairman of this Royal Commission, and how indebted his colleagues were too, to the medical profession, and particularly to those who practised this special branch of medicine, for the very great help they had received. When the post of Chairman of the Royal Commission was offered to him he first disclaimed his suitability for it, on the ground that he was quite unfamiliar with the subject; but he was assured that he would at least have the advantage of bringing to the subject an entirely open mind. He was sure the Report of the Royal Commission would not give general satisfaction; it would give no satisfaction to the Member of Parliament to whom Sir Frederick Willis had referred. But it could be accepted as a sincere effort to assist those concerned in the great and noble task to which the members of their Association had devoted their lives; and if in the slightest degree the Commission had contributed to a better appreciation of the problem and of the great services which had been rendered to the afflicted by those he saw around him, he would feel, after all, that the Royal Commission had served one useful purpose. He did not wish to be too serious, and he did not feel very serious, because he had been having a most delightful evening in very delightful company, and he thought the assembly had reached the stage when they ought to hear a Scotch story. In the vicinity of Aberdeen was a factory where easy Scotch stories were prepared for the English market. The most select vintages were, of course, kept for home consumption, but it would be interesting to try a few of the more recent products of that manufactory upon an English audience. A certain Englishman had a shooting in the Highlands. Returning there in the autumn he went down in the morning to see his gillie. He said to him, "Well, Donald, how has the world been treating you?" "Very seldom, sir," was the answer. (Laughter.) The appreciation given to that deserved another, a little more difficult. Dr. Percy Smith had referred to the number of Scotsmen who came to England and prospered. It was commonly said that they never returned to Scotland, but that was a mistake. He, the speaker, read recently of a Scotsman who had returned to Edinburgh. It was true that the intelligence was derived from the *Police News*,

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the paragraph stating that at the Edinburgh Police Court a certain Scotsman had appeared on a charge of travelling from London without a ticket; but it was a relief to observe that the amount of the fine was £2, and accordingly he was £1 10s. "in" on the transaction. (Laughter.) He wished the company to appreciate that despite the ordeal he himself had recently passed through, he yet remained human and was still uncertified.

On behalf of the guests he most cordially thanked the Association for its hospitality.

The BISHOP OF SOUTHWARK also responded, in a brief speech, thanking the hosts for their kind hospitality.

"THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION."

Sir ARTHUR ROBINSON, *K.C.B.*, submitted the toast of "The Royal Medico-Psychological Association." He said he understood that the Association was formed in 1841 by six gentlemen, who conceived the idea while drinking their wine at a tavern.* Imagination was aroused by considering the extraordinary number of valuable reforms which had sprung from those gentlemen drinking together, and he supposed they formed some conception of what was in the womb of the future, though they could scarcely have conceived of such an association as that of which he submitted the toast with its membership of several hundreds, and its Royal Charter, with its standing as the recognized authority in this country on this special branch of medicine, with extensions which were world-wide. Those seven gentlemen evidently "builded better than they knew." The Association was going towards its centenary, full of influence, power and wisdom, and he came to-night, on behalf of his master, the Minister of Health, to wish the Association every success in its great task. As a layman, the great advance seemed to have been that the Association had established the fact that this mental hygiene or psychiatry must be linked up with the rest of medicine and with the rest of public health. It lived and progressed more and more as that linking up was made closer and more intimate. That was why those at the Ministry of Health in the midst of its preoccupations as to West Ham, housing, national insurance, the Poor-law, and the 34 subjects which were discussed in the House of Commons the other night, were compelled to, and did, take a real living interest in the work of this Association. The Ministry must largely depend on the co-operation of those outside it for advice and help, and the more it could procure that, the better it would do its work. The Ministry knew that this help could be relied upon. This was a time when a very large advance in this matter was about to be made. The Report of the Royal Commission was coming, and was now very near. Mr. Macmillan had said people did not know what it was; what they did know was that a Commission presided over by Mr. Macmillan with a skill and ability which the speaker had never seen equalled in all his experience—(Applause)—was bound to mark a great advance in this matter. It was for the Commission to make its recommendations, and it was for the Ministry, in due course, to promote legislation in Parliament to carry them out. He expected the Report to mark an epoch.

He asked the company to drink the health of the Royal Medico-Psychological Association, coupled with the name of its President, Lt.-Colonel J. R. Lord. (Applause.)

The PRESIDENT, responding to the toast, said that it was seldom a general meeting passed without striking a key-note for future activities. This year it had been a key-note difficult to avoid, even if he had desired to do so, for a closer union between psychiatry and the general body of medicine was a subject on many lips, and in London some very definite steps were likely to be taken in that

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* There is real foundation for this, for four of them, when on their way to another medical gathering, met socially the other two at Gloucester, and arranged the preliminaries for the formation of the Association. In a similar connection it is interesting to note that on June 13, 1750, Dr. Thomas Crow, Mr. William Ponting and four other gentlemen met in a tavern in Exchange Alley, London, and drew up an appeal for the foundation of St. Luke's Hospital.—EDS.

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direction in the near future. He would revert to this subject later. In the meantime he would say that the full-dress debate on psycho-analysis he had thought it wise at this juncture to organize, had been a complete success. It had been carried through with mutual goodwill and respect for each other's view points by the various speakers, all of whom seemed to know a good deal more about the subject than on the last occasion the Association debated it. People who knew their subject well were not so likely to become heated and quarrelsome as those in whom ignorance roused feelings of inferiority, which called for compensatory efforts of a disagreeable character. That reminded him of the advocacy of rigid self-determinism by psycho-analysts, and the not very convincing examples given in some of the text-books. He thought he could improve on them. He lately directed a secretary who was helping in the emergency of organizing that meeting to type the following written message: "I am glad you are taking a widish view of the problem (psycho-analysis)." It was addressed to Dr. Potts, the opener of the debate, and that gentleman would rightly have demanded an explanation had he received the message as actually typed by the secretary, which was—"I am glad you are taking a modest view of the subject." Many thought the theories of Freud not merely immodest, but indecent, so he asked why did the secretary unconsciously suggest this view—somebody, too, who knew nothing of Freud or psycho-analysis? (Laughter.) The speaker gave other curious incidents of the same description, mentioning that he had put it in his notes to refer to Dr. Goodall's eloquence—that poem in prose they so well remembered at the last annual dinner held in London—advocating the mental clinic at the general hospital, as his "Swan-song." Obviously according to the psycho-analyst this was done unconsciously, as he did not agree that these clinics were an immediate panacea for the settlement of the problem of the proper treatment of occurring mental disorder. (Laughter.)

They had listened to many excellent speeches that night, and he feared that he, the speaker, was too tired to attempt to compete with them. Sir StClair Thomson in his speech said that he was about to break a record, *i.e.*, the record for eloquence and wit the Association had when it dined. Well, Sir StClair had failed to restrain both his wit and eloquence, especially the former, and instead of breaking a record he had enhanced it, to their great enjoyment. He, the President hoped Sir StClair would continue the attempt at future dinners of the Association with the same result. Sir Dawson Williams, on the other hand, complained he had had no warning that he had to speak, and could not therefore be expected to say anything worth listening to, but just as he, the speaker, often dreamed that he was about to be hanged and awoke with joy and thankfulness that he was not, so Sir Dawson Williams could at once bless his star that his speech, begun so gloomily, had delighted the assembly by its sincerity and lofty ideals, and he, the speaker, could assure him no one was a more welcome guest at that festive board than the Editor of the *British Medical Journal*, especially so when a brother editor presided. The President went on to say that he had come prepared to speak to them of the future of psychiatry in this country, but he felt bound to limit his further remarks because the happy evening was so advanced, and that day's proceedings for the first time during the week had tried his strength severely, so he would conclude what he had to say as briefly as possible.

He was grateful personally, and on behalf of the Association, for all the kind things Sir Arthur Robinson had said. He felt that there was a hopeful note about the things Mr. Macmillan had said about the Report of the Royal Commission on Lunacy, which was being looked forward to with the greatest interest. On looking through the minutes of the meetings of the Royal Medico-Psychological Association he read that at its first meeting, at Gloucester Mental Hospital, those seven worthies who founded the Association passed this resolution: "That by members of the Association the terms 'lunatic' and 'lunatic asylum' be abandoned, except for legal purposes, and the terms 'insane person' and 'hospitals for the insane' be substituted." The incubus of the former terms was being felt even in those early days, but nothing had been done as yet in answer to their prayer. He hoped the coming Report would, among other reforms, lay these old terms finally to rest, and incidentally the spirits of those six worthies of over half a century ago. In regard to the future, while Colonel Goodall dwelt on the mental clinic at general hospitals as being a bright particular star upon the psychiatric firmament, he, the speaker, looked to the earth, and some would say below it, for a remedy

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for the existing state of things in regard to the proper treatment of mental disorders. He felt that reciprocity and affiliation between mental and general hospitals and a better focussing of the already existing psychiatric forces must come first, and then it might be possible on the experience thus gained to build up an enduring general hospital mental clinic service, to which our present public mental hospitals would be a very necessary adjunct. That was the best way of solving this problem. To commence building from the highest point and work downwards was enough to make Bacon turn in his grave. What was needed was to build up from the materials available, and they had not yet consolidated at the first stage, which was to teach the subject to general practitioners, which meant that medical students should be trained to view their patients as thinking, feeling and behaving individuals, and not as soulless subjects of systemic disorders. Also public mental hospitals must be brought to a pitch of high efficiency of clinical work, for which affiliation and reciprocity with general hospitals was very necessary. The work of the psychiatrically educated general practitioner and consultant should be linked up with the clinical work of the public mental hospitals. They could then go to the general hospital, and hand in hand there conquer a field of psychiatry yet untouched, and over-ripe and ready to be garnered. He was very grateful for the kind words which had been said of the Association and its work. They lived in hopes that the time was near when much they had longed for and prayed for would materialize, and that Parliament would find in the recommendations of the Royal Commission lines of progress which would in a large measure abolish the many handicaps psychiatry had ever suffered from in this country. (Loud applause.)

Mr. Victor Marmont directed the musical programme and presided at the piano. Other artistes were: Miss Lily Myers (mezzo-soprano) and Mr. Norman Long (in song and story at the piano). The dinner was tastefully cooked and expeditiously served, and the arrangements, which were extremely satisfactory, were carried out under the personal supervision of the Catering Manager.

MORNING SESSION.—FRIDAY, JULY 16.

In the Great Hall of the British Medical Association House.

The PRESIDENT in the Chair.

PAPER.

Some Forensic Aspects of Epilepsy, by Dr. W. NORWOOD EAST (*vide* p. 533).

DISCUSSION.

The PRESIDENT said that again those present had heard a very interesting and important paper, and he was sorry it had been necessary to place this contribution so late in the week's proceedings. Perhaps at another meeting it might be possible to have a special discussion, not on criminal responsibility, as that subject had been talked rather dry of late, but on other mental aspects of crime, as it presented itself in Courts of Justice, medico-psychologists had to do with from time to time, and there was also the objective of helping one's colleagues in the prison service. He was sure the views of members expressed at such a discussion would have weight with the legal authorities. To him epilepsy was an entrancing subject, and at an early time in his psychiatric career it had occupied a good deal of his attention. At Hanwell, as a junior medical officer, he spent days and nights in the wards observing epileptic patients. The question was whether the term "epilepsy" was not used in too wide a sense. Bevan Lewis called it the fulminating psychosis. Surely the idea underlying that was something different to those outwardly calm states of mind in which people did apparently unconsciously both ordinary and extraordinary things. Would it clear up much confusion if it were decided to exclude such purely passive mental states from the category of epilepsy? "Falling sickness" was the old name for idiopathic epilepsy, and, strictly speaking, it was only associated with motor convulsion or explosive actions or sudden commotions of mind, all invariably affecting consciousness and memory. He felt it was impossible now-a-days to so limit the use of the term "epileptic," and he would later explain why. His interest in epilepsy lay

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in this fact—that in observing epileptics very closely one seemed to trace in many cases, as they came out of a fit, the gradual development of perfectly co-ordinated and purposive movements. As the convulsions ceased there was a gradual slowing down of motor activity and the adoption of ordinary every-day movements, even though the patients were still unconscious or largely so. The question arose as to whether the fit did not commence in the reverse way, the onset of the tonic spasm being too sudden for it to be recognized. Then it was thought that the portions of the cerebral mechanism which had to do with all these purposive movements might be the areas in which the condition started, and the idea was to watch the development of the fit, and try to identify the first muscles to be affected, or the first action taken. He collected a large number of observations, and from them he had tried to build up a theory of epilepsy, but utterly failed in any case to localize any cortical area as the starting-point. From the character of the symptoms as a whole it would seem to be more of a cortical than a basal disturbance, but the extent the latter was involved would alter the clinical picture considerably. He thought that in essentials epilepsy was a psycho-physiological or a psycho-neural disorder, and that ordinarily it suddenly broke loose in physiological or purposeful motor activity, but of so fulminating a character as at first to constitute a tonic muscular spasm passing into convulsions, that stage being preceded by either sudden paralysis, or sudden activity rapidly passing into paralysis, of the psychic counterpart of the motor activity. As a preliminary to a return of psychic activity, purposeful movements were resumed. The brief psychic activity preceding the paralysis of mind might be of a dangerous kind and lead to an act of violence. On this assumption it was not impossible to conceive of an epileptic origin to the occurrence of an automatic state in which the patient was quiet and orderly, but lacking very largely in initiative and invention. Here there was merely activity at a physiological or neural level without consciousness, the psychic counterpart being inactive. It was a deeper dissociation than the operation of the unconscious mind. If attacks of that character occurred in a person who from time to time exhibited true fulminating epilepsy, it was right to assume a connection between them if the automatism was sudden in origin or associated with a fit. If otherwise was one justified in assuming that the automatism was of epileptic origin? He thought that automatism was always a dissociation at the psychic and physiological levels of behaviour: the greater the dissociation, the greater was the loss of consciousness and of memory. The suddenness of origin was an important factor: the more sudden, the deeper the loss of consciousness and of memory. Also the type of behaviour in the automatic state depended upon the depth of the dissociation. The automatism of dementia increased with the dementing process, but the course was slow, constant and progressive and never a fulminating one. In epilepsy automatism often occurred suddenly without reference to a fit and the conduct was excited, animal-like and emotional, which suggested an over-involvement or letting loose of basal activity. But an epileptic might pass into an unconscious and automatic state and behave quite normally, or at least pass for normal, for a long period. It was possible that in every such case some shreds of consciousness remained to direct the conduct. This was shown by the fact that in some cases on resuming the normal there was found some little memory of the incident. To return to the first question he had put. Should the term "epilepsy" also include purely mental disorders associated with unconsciousness and automatic conduct but without the presence of *petit* or *grand mal*? Was it not true that some hysterical people also suffered from epilepsy, and epileptics from hysteria? Were not such cases, which undoubtedly occurred, labelled one or the other according to which symptoms predominated? It was commonly taught that the two conditions were entirely different, but he, the speaker, was not of that opinion. The occurrence of automatism in both was a link between them and pointed to a similar psycho-pathology. Hence the frequent occurrence of the two conditions together. The other assumption was that automatism was always hysterical in origin, and when it occurred in an epileptic that epileptic was also hysterical. This would leave epilepsy free to be thought limited to fulminating disorders with unconsciousness, either mental or physical, or both. He thought this latter assumption unsound and failed to explain the clinical symptoms. In his view, the only rational conclusion was that automatism, which was not degenerative, and not associated with definite hysteria, was always epileptic in origin. Perhaps quite unscientifically he divided dissociation

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into two categories—horizontal and vertical. The former was a loosening of the connections between higher and lower functional levels of the nervous system—in other words "automatism"—and occurred in epilepsy, hysteria, dementia and some poisonings. The latter was not automatism, but a splitting of the personality, and distinctive of hysteria and not of pure epilepsy. In any case a severely impairment or absence of conscious directing force rendered the patient irresponsible to the law for his behaviour. An interesting point was whether it was necessary to prove the co-existence of the cause—say epilepsy, hysteria, etc.—to establish the existence of automatism. He, the speaker, thought it was, as he did not think that automatism was a disorder in itself, but a symptom of some underlying and causal condition.

Dr. M. ABDY COLLINS said he had had some experience of epilepsy from the clinical point of view. The President said he thought the term was applied too widely. He, however, was inclined to take the other view, because there was no doubt that some of these states did occur in the pre-epileptic state. He only doubted if it was necessary to have such a term as larvated epilepsy, or its equivalent. Did not these conditions follow a very slight attack of *petit mal*, or were they not the condition which usually preceded the fit? Perhaps the energy which usually resulted in a fit might be released in some other way. He very well remembered two cases. One was that of a girl, who was a source of constant trouble because she declared that all the other patients in her ward hated her and attacked her unnecessarily. They also disliked her intensely because she had a habit of suddenly turning on people and damaging them severely. She, of course, denied that she ever began any of those things. On one occasion he was visiting the ward at dinner-time and saw this patient suddenly turn round and put her finger-nails into the next patient's face and into her hair, and if he had not been there it was obvious that when she came round she would have found everybody else attacking her. He extracted her fingers from the hair of the other woman and laid her on the ground, and she was unconscious and behaved as a patient would who had a slight attack of *petit mal*. But it had not been noticed before, because it had always resulted in two or three people seizing her and fighting with her, and she was fighting when she recovered; but there was no doubt that she was unconscious, and that what she stated about other people attacking her was what she recollected. It looked as if she had turned round in a spiteful way and attacked others. But she was unconscious.

He had seen a similar thing occur in a boy; he had smashed things, and was never noticed to be in a fit; but in that case also on one occasion the speaker saw it happen, and put him on the floor, and he behaved as if he had a *petit mal* attack. And he had known patients who had forgotten; they had made arrangements for a nurse to spend money for them, then deny the whole thing. He had seen an epileptic behave violently, and on talking to him afterwards one concluded he did remember something of what happened, but mixed it up with something different.

Another point about automatic action was the way the people tended to repeat the same thing, and not only purposive actions. Among his patients was an ex-soldier who was subject to acute confusion. Generally about midnight he got out of bed, went to the door of the padded room, and turned out whoever might be in it—he was a very strong man—then returned to the ward and went to bed. On the next day he was in a condition of extreme confusion.

With regard to psycho-neuroses, etc., it was very difficult to say where these began. In his hospital there was a girl who was always said to be a case of hysteria; but, after some time, he felt convinced that what she had were very slight *petit mal* attacks, and that the other symptoms which arose afterwards, and which would be considered manifestations of hysteria, occurred in the post-epileptic state, and were very limited in the length of time they lasted. His view was that that patient was an epileptic. He did not know that one could distinguish between the two conditions; he did not know whether all forms of suddenly recurring attacks such as he had described should not be classed as epilepsy. He was not saying it was known what epilepsy was, but there were a large number of conditions in which this constantly-recurring state happened, and they might be explained by mental conditions. There were others which could not be so explained.

Dr. BEDFORD PIERCE said he felt the Association was to be very much

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congratulated on having such an exceedingly lucid and instructive paper on this very difficult subject. He had rarely heard a paper in which matters were presented so clearly and in so interesting a way.

With regard to the problem as to what was the essential nature of epilepsy, he was old-fashioned enough to think members would do well to stick to the old doctrine that there was no epilepsy without a temporary period of unconsciousness; and though he was aware there was a modern psychogenic school who professed to treat epilepsy successfully, and who would weaken this doctrine, or make light of the period of unconsciousness, and spoke of clouding of consciousness, etc., he could not but think it would be well to reserve the term "epilepsy" for a disorder in which there was a temporary period of unconsciousness and a temporary loss of memory. Those who had read Prof. Pearce's recent book on *Remembering and Forgetting* would have seen that the subject of memory was a perplexing one, and that it was very difficult to judge whether a person could remember a thing or not.

Concerning the question of automatic acts, he gathered that Dr. East suggested there could be true epilepsy without fits, automatic acts being the only symptom. In one of the cases related that seemed to have been the case. No doubt it was a very difficult subject. One knew of hysterical fugues, in which people did a number of strange and peculiar things, wandering about, etc., in which there was no question of true epilepsy; and when one went into the real history of the case and the underlying cause, one found states of extreme mental distress, and when the mental distress was removed by appropriate discussion and therapy, the automatic wanderings disappeared, and he did not think that could be looked upon as epilepsy.

Another thought occurred to him. He had been very much distressed at the repeated conflicts of medical and expert opinion in cases of this kind, and thirty years ago it was urged that there should be a conference of experts to agree upon matters of a technical nature, prior to the trial, so that such unseemly discussions should not take place in public. He wished that was possible. Most members knew that when they appeared in Court, lawyers pressed them to say more than they wished to; only partial facts were given, and there was much suppression of truth in cases presented to the expert. It would be wise, he thought, for the medical profession to present a united front against this suppression of facts, the requirement being laid down that all the facts should be presented, and a considered opinion arrived at by both sides as to what were the essential facts in the case, all those facts being stated before the witnesses. Something of the kind was necessary in the interests of justice, as well as in the interests of their own profession.

Dr. TYLOR FOX said the crux of the matter seemed to be as to whether epileptiform automatism was always followed by complete amnesia. One could solve that by saying if the amnesia was not complete it was not true epileptic automatism. Short of that, one was bound to get into difficulties. If one took a series of cases of apparently automatic acts of the seeming nature of epilepsy, he did not doubt that a percentage would be found to have some memory of acts which followed the fits, especially in cases in which the patient had been at all violent. Violence in post-epileptic automatism might, he took it, be due to obstruction. The more the patients were left alone, the less violent they would be. It might be that obstruction of automatic acts caused a partial return of consciousness, and consequently there was not complete amnesia. It would simplify many problems if the definition could be accepted that epilepsy was a disease characterized essentially by periodic loss of consciousness, and that without loss of consciousness there could be no epilepsy. The only way that the definition could be squared with the facts would be by assuming that in certain cases the loss of consciousness was so momentary that it could not be detected, and perhaps that was a gratuitous assumption.

The PRESIDENT said he would like Dr. East to get together some headings for a discussion on those matters which Dr. Bedford Pierce and others had touched upon; it would help colleagues in the prison service, and be of service to general practitioners when they had to appear as witnesses in police-court cases.

Dr. EAST, in reply, said that when he was asked to read a paper before this meeting, there were two excuses which he thought one might offer for doing so. One was that he might have something new to say. That, he knew, was out of

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the question. The other was that it might be the means of himself learning something which might be of use to him, and to other men who were working in the same field. The discussion to-day had not been wasted, as far as he was concerned, and it had emphasized what he was already aware of—that it was a subject of extreme difficulty. One of the objects he had in writing the paper was, that having been giving evidence in criminal courts for many years, it seemed to him extremely unfortunate that, over and over again, he was in conflict with the expert on the other side, and very often when it was quite unnecessary. And an observation which was warranted was that the medical man on the other side was not in every case an expert; often he was a very young general practitioner. In criminal work the difficulty was to get at the facts, because it was the commonest defence of a man, when he had committed a crime, to say that he did not remember anything about it; it was also one of the symptomatic facts about automatic actions. If it were true, it went a considerable distance in helping one to form a diagnosis. As the President said, one of the greatest difficulties seemed to be to draw the line between epilepsy and other dissociations. In one of the instances given in the paper, he, the speaker, thought one was dealing, not with an epileptic case, but with one of hysterical dissociation. And in that case he was particularly careful, in giving evidence, not to say that it was of an epileptic character, because it might have led to awkward questions in cross-examination.

He understood Dr. Collins to say that cases of epileptic furor did not remember the acts they committed while they were in that condition. He would hesitate to draw a lance with Dr. Collins on that point, but he remembered a case in which the man did seem to have a recollection of events, and a very detailed recollection. But he, the speaker, was not there, whereas in the cases Dr. Collins mentioned he was present and was able to corroborate them. That was a difficulty which could not be surmounted in criminal practice, and it was also one of the difficulties in dealing with the fact whether or not there had been any antecedent convulsive attack, or anything suggestive of minor epilepsy. These crimes if witnessed were nearly always committed in the presence of people who were ignorant of psychological problems. Hence the information was never complete.

The question of whether these cases were epileptic or not was one of very great importance. It should not be the intention or the desire of the medical man to suggest to people who had committed a crime a mental invalidism which, in fact, did not exist. If the profession was going to make mental invalids of those who were not so, then no benefit was thereby done either to the persons or to the profession or the public, because the more a sense of responsibility could be got into the individual, particularly when dealing with psycho-neuroses, the more were such persons likely to help themselves. He would protest against one remark during the discussion—that post-automatic crime was due to the resistance offered to the patient. In certain cases of murder and other crimes of the kind no violence was offered to the accused, and he did not think that crimes were due to resistance offered to the supposed epileptic while in the condition of automatism.

He had purposely avoided referring to the question of criminal responsibility, as it was a very hoary question, and little progress seemed to be made with it. But if progress could be made on the subject of automatism it would be very valuable, and would assist, as he had every hope it would, in diminishing differences between expert witnesses.

Votes of Thanks.

Dr. M. J. Nolan proposed that a cordial vote of thanks be tendered to the Chairman of the London County Council for permitting the Association to meet in the County Hall, and for affording members facilities for visiting the Council Chamber, the Laboratory and other departments, as well as for their kindly courtesy. It was evident that Sir George Hume was pleased to see them and was interested in their work, and that was in a measure due to the association of the President with the London County Council.

He thought thanks should also be tendered to the British Medical Association for their courtesy and assistance during the meeting.

He therefore moved—

"That a hearty vote of thanks be accorded to the London County Council for the privilege of meeting at the County Hall on July 14 (afternoon session),

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to the Chairman of the Council, Sir George Hume, *J.P.*, *M.P.*, Mrs. Dunn Gardner and other members, and also the Officers of the Council for receiving them, and to the Officers who so kindly entertained them and rendered the visit both instructive and pleasurable."

"That a hearty vote of thanks be accorded to the Officers and Employees of the British Medical Association for their courtesy and assistance during the eighty-fifth Annual Meeting now concluding."

Finally, a word of thanks was due to Dr. Edwards for his work in connection with procuring for the Association the Royal Charter, its Coat-of-Arms and new Seal. Some members were well aware of the immense amount of labour which was involved in bringing these matters to a successful conclusion.

Dr. BEDFORD PIERCE seconded, remarking that members highly appreciated all that had been done, and that few members realized the amount of work Dr. Edwards had done in connection with the Charter and the other matters, and he hoped it would be recorded.

The vote was carried by acclamation.

AFTERNOON SESSION.—FRIDAY, JULY 16.

At the Horton Mental Hospital, Epsom, Surrey.

The PRESIDENT in the Chair.

A demonstration was given by Col. S. P. JAMES, M.D., Medical Officer and Adviser on Tropical Diseases to the Ministry of Health, and Member of the Malarial Commission, and Mr. P. G. SHUTE, Gold Medallist of the College of Pestology, of the Ministry of Health, illustrating the infection of mosquitoes and other points relating to laboratory work in connection with malaria and with the treatment of general paralysis by malaria. Clinical demonstrations on the same subject followed by Dr. W. D. NICOL, Medical Officer in Charge of Horton Malarial Treatment (G.P.I.) Hospital.

The PRESIDENT, in introducing Colonel James, said that psychiatry was deeply in the debt of that distinguished specialist in tropical diseases, especially malaria, for the encouragement and valuable assistance he had given as to the technique of the treatment of general paralysis by artificially induced malaria (direct mosquito infection). They had at that hospital a research and experimental centre in charge of Colonel James, from which was radiating knowledge likely to be of world-wide importance, not only as regards the cure of general paralysis, but also of the prevention and cure of malaria itself. He, the speaker, was anxious that the problem as to how malaria cured general paralysis should be solved as soon as possible and so remove such treatment from an empiric to a scientific basis in the case of this and allied mental disorders.

The important point at the present time was not the number of cases treated and the results, but the intensive study, both clinically and by laboratory methods of individual cases, and for this purpose only a few cases could be undertaken at one time. The experimental and treatment hospital they would presently visit was only for 14 patients, but it was complete as regards nursing and equipment for its purpose.

Colonel JAMES then gave a brief account of the research work already accomplished in this matter, and indicated some epidemiological conclusions which seemed justified by the results obtained.

Epidemiological Results of a Laboratory Study of Malaria in England.

By Lt.-Col. S. P. JAMES, M.D., I.M.S.(ret.).

The official arrangement in England by which general paralysis and other mental diseases can be treated by a course of malarial attacks induced by the bites of infected mosquitoes, provides an opportunity of studying in the laboratory certain factors which are important in connection with the epidemiology of malaria. It has fallen to me at the Ministry of Health to infect mosquitoes for the purposes of the treatment and to induce malaria by their bites at mental hospitals in different parts of the country. To assist in this work, Col. J. R. Lord, *C.B.E.*, Medical Superintendent of the Horton Mental Hospital, Epsom, with the approval of his Committee, arranged to set apart an isolated block of

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the hospital for the treatment of patients and to place a laboratory at my disposal in this block. I take this opportunity to thank him for these and other arrangements which greatly facilitated our task. Dr. Nicol was in medical charge of the patients who passed through the course of treatment at Horton during the two years with which this report deals and also collaborated with us in the laboratory and clinical studies.

The work may be summarized as follows:

1. The practical object is the continuous supply of mosquitoes for inducing a pure infection of benign tertian malaria in patients to be treated.

2. Between December, 1923, and April, 1926, for the purpose of obtaining supplies of infective insects, twenty-two batches of *Anopheles maculipennis* were fed on patients whose blood contained gametocytes of *Plasmodium vivax*, and were incubated in a saturated atmosphere at 22°–24° C. for ten or more days. A successful result was obtained with sixteen batches.

3. About 3,200 female *maculipennis* (caught as adults in nature) were used in the twenty-two batches, but only about 715 of them lived long enough to be available for infecting new patients.

4. During the period referred to 221 patients were subjected to their bites (some on more than one occasion), for the purpose of inducing malaria. Of these patients 169 developed benign tertian malaria within the usual incubation period of the disease, and 52 failed to do so.

5. The following statement gives details of the above information:

Serial number of the batch.	Month and year.	Number of mosquitoes with which batch was commenced.	Number of mosquitoes ultimately available.	Percentage infected (sporozoites in gland) when used for infecting patients.	Number of patients bitten by mosquitoes of the batch for inducing malaria.	Number of patients who developed malaria.	Number of patients who failed to develop malaria.
1	Dec., 1923	80	12	25%	3	0	3
2	Jan.-Feb., 1924	100	40	100%	12	9	3
3	March, 1924	60	2	100%	3	1	2
4	April, 1924	60	6	100%	2	2	0
5	May, 1924	80	2	100%	1	0	1
6	June, 1924	200	—	—	—	—	—
7	June, 1924	58	—	—	—	—	—
8	August, 1924	400	120	100%	14	14	0
9	Feb.-Mar., 1925	200	—	—	—	—	—
10	April, 1925	100	—	—	—	—	—
11	May, 1925	80	—	—	—	—	—
12	May, 1925	80	—	—	—	—	—
13	June, 1925	80	40	80%	17	17	0
14	June, 1925	60	30	100%			0
15	July, 1925	200	40	100%	14	14	
16	August, 1925	300	150	100%	16	16	0
17	Sep.-Oct., 1925	200	50	100%	27	26	1
18	Nov.-Dec., 1925	300	40	20–85%	36	10	26
19	January, 1926	100	40	100%	36	22	14
20	March, 1926	180	28	100%	11	11	0
21	March, 1926	225	100	100%	25	23	
22	April, 1926	80	15	100%	4	4	0
		3,223	715		221	169	52

During the course of the routine work just summarized, we have made some observations on the factors which are concerned in the transmission of malaria from man to mosquitoes, and from mosquitoes to man, which are important both because they facilitate the work itself, and because they can be applied to assist

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in solving problems of endemic and epidemic malaria in nature. These observations may be described very briefly as follows:

I.—Factors relating to the Transmission of Malaria from Man to Mosquitoes.

Our most important observation on this subject is that it is difficult to bring even a few members of a large brood of mosquitoes to a condition in which they will be successful transmitters of malaria. The difficulty is due to a number of causes, of which the following may be mentioned:

1. *The human source of infection.*—One of the chief causes of failure to infect *Anopheles* is the difficulty of finding a malaria patient who is infective to those insects. It is surprising what a small proportion of patients who suffer from malaria are infective to *Anopheles*, even when their malaria has been allowed to run its course for a considerable period. Quite rarely one comes across a patient who is strikingly infective, but our general experience is that the great majority of patients must be classed as being "poor infectors of *Anopheles*" and a small minority as being "good infectors."

2. *The numbers and character of the gametocytes.*—In first attacks of benign tertian malaria contracted by the bites of mosquitoes we have never found gametocytes in thin films of blood taken before the seventh day after the first rise of temperature; and our feeding experiments show that about three more days must elapse before the gametocytes become infective to *Anopheles*. This means that a patient in a first attack of malaria does not become infective until at earliest the tenth day of his illness. In relapses, however, gametocytes are present much earlier, usually, indeed, on the first day on which the occurrence of the relapse is reported.

There are great differences in the numbers of gametocytes found in the peripheral blood of different cases of malaria, and considerable differences in the number present in the blood of the same patient from day to day. The number rises rapidly at the beginning of the second week of the illness, and sometimes falls during the third week. We do not attach so much importance to the number of gametocytes as we do to their quality, for we have had many failures to infect batches of mosquitoes when the number of gametocytes present in the patient's blood was considerably in excess of the often-quoted figure of 1 per 500 leucocytes (12 per c.mm. of blood).

3. *The number of feeds on infective blood.*—This is one of the most important factors in the infection of *Anopheles*. We find that, unless an "exceptionally good infector of *Anopheles*" is available, it is quite necessary to feed a batch of mosquitoes several times upon the malaria case in order that the batch may ultimately become infective (sporozoites in the salivary glands). The infection of *maculipennis* after one feed upon an infective case is quite uncertain, and we are sure that, in some individual mosquitoes of different batches, young zygotes which have begun to grow well may cease to develop and may gradually become absorbed without coming to maturity. We have had to discontinue more than one batch which, on the third day, showed a high percentage of infection because by the eighth or ninth day all dissected individuals were negative. We cannot offer any other explanation than that its zygotes failed to continue their development and disappeared. As a result of many trials we have come to believe that mosquitoes which at first seem refractory to infection can be forced, so to speak, to become infective by repeated feeding on a suitable case.

4. *Influence of temperature, humidity and season.*—In our experience the best results in infecting *A. maculipennis* with *P. vivax* are obtained at temperatures between 22° and 24° C., and in a saturated atmosphere. We have not found any difference between the infectibility of *maculipennis* at different seasons of the year or between the infectibility of "hibernating" as compared with recently hatched insects.

5. *Influence of growth of eggs.*—Mosquitoes carrying nearly ripe eggs do not suck nearly so much blood as do mosquitoes with undeveloped ovaries. The reason is that the swollen ovaries fill the abdomen and press against the midgut of the mosquito to such a degree that its cavity is almost obliterated. Therefore mosquitoes with fully developed ovaries are not likely to become heavily infected. Indeed, we find that as regards some female mosquitoes in this condition, the

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blood does not pass into the midgut at all, but fills and distends the œsophageal diverticula. Examining such a female after it has fed one sees that there is red blood in the abdomen, and one concludes that the insect, having fed on the infective patient, will itself become infected. On dissection, however, one finds the midgut quite empty of blood, and the œsophageal diverticula distended like small red bladders. From time to time a little of the blood oozes from the diverticula into the midgut, but not in sufficient quantity to ensure the infection of the insect.

6. *Influence of feeding upon fruit and foods other than fresh blood.*—We believe that when a mosquito feeds on certain fruits the chemical reaction of its stomach becomes unfavourable to oöcyst development, and that mosquitoes may also be refractory to infection when they feed on the blood of certain animals or birds as well as on the blood of the infecting patient. As a result of many trials in this connection, we have decided that for the purpose of obtaining a satisfactory supply of highly infected insects fresh human blood is the only suitable food. We have found that some individual specimens of *maculipennis* caught in nature may be refractory to infection until they have had several feeds on human blood with omission of all other kinds of food.

7. *Influence of the quantity of blood ingested.*—Among every batch of mosquitoes, some feed greedily, some lightly, and some not at all. Some of them also evacuate a considerable proportion of the sucked blood while they are in the act of feeding. These points are of importance in the natural infection of mosquitoes, and consideration must be given to them in practical work which has for its object the supply of batches of mosquitoes with a sporozoite rate of 100%. In that work this difficulty can be overcome by causing the mosquitoes to feed repeatedly on the infecting patient.

8. *Influence of the length of life of the mosquitoes.*—The length of life of mosquitoes is one of the most important factors in relation to their infection. A glance at the tabular statement already given will show what a large supply of mosquitoes must be used in order to obtain batches with infection of the salivary glands ("infective mosquitoes"). *Maculipennis* is a species which can withstand very low temperatures, but its mortality rate at temperatures above 22° C. is high. According to our figures its rate of mortality under conditions necessary for infection is about 50% per week. It seems probable that the short life of mosquitoes during very hot seasons is one of the most important factors in the geographical distribution and seasonal incidence of different species of the malaria parasite.

Comment.—The difficulties which have had to be overcome in order to obtain supplies of mosquitoes with 100% sporozoite infection of the glands have helped us to realize how many special conditions must be fulfilled in nature for the effective transmission of malaria from man to mosquitoes. Our observations on this subject help to explain why it is almost an invariable rule in nature, even in very malarious places, to find only a low percentage of infected mosquitoes. They explain, also, why malaria in nature is essentially a "household disease," for it is obvious that certain kinds of houses or dwellings are the only places in which all the necessary conditions can be fulfilled. This finding is of considerable importance in relation to the endemiology and epidemiology of the disease.

II.—The Persistence of Infectivity of Mosquitoes with Sporozoites in the Glands.

When a batch of mosquitoes has become "infective" (sporozoites in the glands), it is our practice to keep the insects in an ice-chest at from 4°–6° C. during the periods between the use of the batch for infecting purposes. This plan reproduces artificially what happens to *maculipennis* in nature during winter in northern climates. It has enabled us to add something to the literature on the resistance of zygotes and sporozoites to cold, and on the duration of infecting power of mosquitoes. Our observations on these points show that as regards *P. vivax* the oöcysts in the stomach and the sporozoites in the glands are not killed when a mosquito lives continuously for three weeks at the low temperature of 4°–5·5° C., nor even when the temperature during six days is below freezing-point. Nor are they killed when a mosquito lives intermittently at a low and at a high temperature for a long period. Growth and development of oöcysts are arrested at the low temperatures, but begin again when the temperature becomes sufficiently

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high. Some of the mosquitoes in our successful batches have lived and continued to be infective for periods ranging between 29 and 92 days after sporozoites were present in their glands. These observations support and supplement the findings of workers who have caught and dissected mosquitoes in nature during the winter in different countries, particularly the findings of Swellengrebel* in Holland, Wenyon† in Macedonia, and Sella‡ in Rome. Considering the findings of these observers in conjunction with our laboratory results, we do not doubt that *P. vivax* can be carried through even a severe winter in hibernating mosquitoes, and that the carriage may be in either the oöcyst stage or the sporozoite stage of the parasite or both.

In connection with the persistence of infectivity through the winter (and for a long period at any season), it must be remembered that an infected mosquito nearly always carries zygotes at different stages of development. These zygotes ripen and rupture at different times, and in consequence the salivary glands are continually being replenished with sporozoites during a considerable period. The following results of dissections exemplify this point:

Mosquitoes found Infected during each Ten-Day Period following the First Infective Feed.

—	Batch 16, in which the salivary glands were continually being replenished with sporozoites.			Batch 18, in which the salivary glands were not being replenished.		
	With oöcysts (stomach).	With sporozoites (salivary glands).	Number of opportunities of biting given during the period.	With oöcysts (stomach).	With sporozoites (salivary glands).	Number of opportunities of biting given during the period.
	%	%		%	%	
1st ten days .	92	0	—	48	0	—
2nd ,, .	86	20	15	70	5	—
3rd ,, .	45	100		6	75	19
4th ,, .	27	100	2	0	85	6
5th ,, .	57	100	10	0	85	4
6th ,, .	60	100	8	0	66	8
7th ,, .	100	100	2	0	20‖	4
8th ,, .	—	—	0	—	—	—
9th ,, .	—	—	0	—	—	—
10th ,, .	100	100§	1	—	—	—

§ Salivary glands still crowded with numerous sporozoites.

‖ Two infected out of ten examined, but the sporozoites in both cases were very few.

It will be seen from this statement that the mosquitoes of Batch 16, in which the salivary glands were continually being replenished with sporozoites, remained heavily infective during the whole period of their life, but that the mosquitoes of Batch 18, in which the salivary glands were not being replenished, gradually got rid of nearly all their sporozoites.

III.—Observations relating to the Transmission of Malaria from Mosquitoes to Man.

I have already mentioned that 52 patients among the 221 who were bitten by the mosquitoes of our infective batches failed to develop malaria within the usual

* N. H. Swellengrebel (1924), *Nederl. Tijdschr. v. Geneesk.*, p. 750.

† C. M. Wenyon (1921), *Journ. Roy. Army Med. Corps*, xxxvii, p. 187.

‡ M. Sella (1920), *Internat. Journ. Public Health*, i, p. 341.

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incubation period of the disease. Some of the patients who failed to develop the disease were bitten on more than one occasion by mosquitoes which were proved by subsequent dissection to be highly infective. I am not yet in a position to explain why those patients remained refractory. Fifty of the 52 failures occurred during the winter months between November and March.

Conclusions.

The purpose of our laboratory work on the infection of mosquitoes would not be fulfilled unless, in addition to complying with official requirements relating to the treatment of mental diseases with a pure strain of *P. vivax* in mosquitoes, it enabled us at the same time to add something to existing knowledge of the epidemiology of malaria. It is obvious that the application of our observations to that end necessitates the assumption that what happens under artificial laboratory conditions will also happen in nature. Allowing that this assumption is justifiable I may summarize some of our conclusions briefly as follows:

1. Our observations seem to show clearly that of the vast numbers of *Anopheles* mosquitoes which exist in malarious places, only a very few become transmitters of malaria. This being so, it may well be asked how it comes about that in many places all the inhabitants are infected with the disease. The answer is certainly given by the observation that a mosquito which has succeeded in becoming infective retains its infecting power for a long period, and can infect many people. Different batches of our mosquitoes lived and continued to be infective for periods ranging from one month to three months after the date in which sporozoites were present in their salivary glands. Some of the mosquitoes in these batches, after biting between 30 and 40 patients, still had numerous sporozoites in their glands. This was because the glands were replenished from time to time with sporozoites, *e.g.* oöcysts which ripened and ruptured at different times. In nature, a mosquito which has made its home in a house containing several malarious children who are untreated has frequent opportunities of becoming freshly infected; the result is that its stomach carries oöcysts in many stages of growth, and its salivary glands are restocked with sporozoites from time to time throughout the remainder of its life.

2. The observations relative to the resistance of oöcysts and sporozoites to cold, coupled with the observations on persistence of infectivity just mentioned, lead to the conclusion that benign tertian malaria can be carried through even a severe winter in hibernating mosquitoes. This persistence of infectivity through the winter explains some of the occurrences in Northern Europe of primary attacks of malaria during that season and in early spring.

3. Why is it that in nature only a very few *Anopheles* become effective transmitters of the disease? Our observations on the difficulties of bringing even a few members of a large brood of mosquitoes to a condition of infectivity seem to us to help considerably in the solution of this problem, and have an important practical application in relation to anti-mosquito measures against malaria. Let me begin by saying that we were greatly surprised to find that, in the highly favourable laboratory conditions in which we work, failures to obtain supplies of infective insects (*i.e.*, with sporozoites in the glands) were so frequent. Our mosquitoes lead a sheltered life. They are protected against sun, wind and rain, and against unfavourable changes of temperature and against natural enemies. The food upon which they thrive best and live longest is available to them without effort or risk, and care is taken to prevent the ingestion of a diet which is unsuitable or is contaminated with bacteria or moulds; when a mosquito refuses to feed it is separated from the rest of the batch and nursed at a lower temperature until it will do so. It seems quite plain that if special conditions of this kind are necessary for the infection of mosquitoes in the laboratory, they will be equally necessary in nature. Therefore we need not hesitate to affirm that in nature the only mosquitoes which become transmitters of malaria are those rare individuals which happen to pass their life under equally sheltered and peculiar conditions. Moreover, our observations show that even among the relatively few *Anopheles* which in nature come to rest in a place which is favourable to their infection, not many will untimately become infective unless certain additional conditions are fulfilled, as, for example, that the mosquito must have an opportunity

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of feeding every day, that it must feed several times on the infective patient, and that it must have no other kind of food than human blood. When one appreciates the importance of these conditions, one realizes how small is the chance in nature that any particular brood of *Anopheles* will ever be concerned in transmitting malaria. One realizes that the *rôle* of being a malaria-transmitter is reserved for only a very few individual mosquitoes which happen to pass their life in an environment and in a manner very different from that of the remainder of the brood. And when we accept this conclusion, we must accept also the inference to which it leads, namely, that the secret of a successful control of malaria lies not in the general knowledge that the disease is spread by mosquitoes of a certain genus or species, but in the particular and exact knowledge of the life-history of the few individual mosquitoes whose habits are such that they are likely to get into the special environment and conditions, and to live their life in the special manner, in which alone a mosquito can become a malaria-transmitter. No one who fully appreciates the importance of this conclusion, and accepts it as true, can fail to look upon anti-mosquito measures for dealing with malaria from a new point of view. He will at once realize what a great waste of effort is involved in measures directed against the breeding-places of mosquitoes as a whole, and even in similar measures directed against one species. Instead of considering those measures, he will think constantly of examples such as I have recorded on p. 707 of this paper. He will appreciate at once how dangerous even a single mosquito may be, when it is continuously infective in the manner exemplified for Batch 16 on that page. He will see the futility of employing his staff on anti-larval measures in the fields and marshes while permitting a mosquito of that kind to continue for weeks to work its wicked will in the houses of the people. Instead of continuing his inquiry into the habits of particular genera or species of mosquitoes as a whole, he will begin at once to study the habits of the particular individual mosquitoes which get into the dangerous infective condition indicated. He will find that the habits and life-history of these individuals are quite different from those of the general specific group to which they belong entomologically. As I have already said, these individuals pass their life in a manner quite different from that of the remainder of their brood. An essential difference is that instead of making flights in the open air, they pass practically the whole of their life in the particular house in which they first settled. At their first feed in this house they become overloaded with blood and almost too heavy and sluggish to make a satisfactory flight. They find a sheltered dark corner or hole within a few feet of the beds of the occupants of the house, and night after night make the short passage between their hiding-place and the sleeper in the bed in order to gorge themselves with blood. Their eggs ripen only very slowly, and even when they are ripe, the insect is very loth to make the flight necessary for laying them. Often she drops them carelessly after a very short flight, and returns to the hole which she has made her home. Life in the household, with the nightly feed of blood, has become a habit to which everything else is subordinated.

I have said enough to indicate the point of view to which our laboratory work on the infection of *Anopheles* seems to lead. It seems to confirm experimentally the view already arrived at by many epidemiologists, that in nature the human house or dwelling is invariably the "laboratory" where malaria infection has its origin and is cultivated. It is essentially a disease of certain kinds of houses or other dwellings which fulfil the "laboratory conditions" which we have described.

The reasonable inference is that malaria should be dealt with in the houses of the people rather than in the general environment.

Our observations have led to conclusions on several matters relating to the clinical description and parasitology of benign tertian malaria and to the questions of "susceptibility" and "immunity," but I have decided to confine myself in the present communication to the points referred to above.

It remains only for me to state that my laboratory assistant, Mr. P. G. Shute, has assisted me greatly during the whole of the work summarized in this paper. Without his constant attention to all the details connected with the work it would have been quite impossible to comply with the requests for infected mosquitoes which we received.

The PRESIDENT then called upon Dr. W. D. NICOL for some remarks on the clinical aspects and results of the malarial treatment of general paralysis.

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Dr. NICOL said that up to date 29 cases of general paralysis had been treated at Horton by mosquito infection, 5 of whom were still under treatment. Of the 24, 3 were discharged as cured, 12 mentally improved, and in 6 there had been no improvement and 3 had died.

Of the 3 cured, 2 were looking after their homes and one was earning her own living. Of those improved the degrees of improvement varied considerably. However, they were all employable, and their behaviour was such that they were able to look after themselves and enjoy their life here. Some of them had partial insight with loss of delusions, and in others the memory had improved. Of those showing no improvement they had all become mentally worse. In every case the physical condition had considerably improved. Of the deaths none could be attributed directly to malaria; 1 died of an influenzal broncho-pneumonia following closely a course of malaria; the other 2 showed small areas of focal necrosis, one on the heel and over the sacrum and the other on the buttocks. These conditions got progressively worse and both patients died of pyæmia.

With regard to physical signs, there was no change other than the loss of tremors, the improvement in articulation, and in general health.

With regard to their serology, it was found that the Wassermann did not become very much altered, but the Lange curve in nearly all the cases was no longer a typical paretic curve.

In conclusion Dr. Nicol said that from experience here the treatment undoubtedly gave those patients a chance of recovery which they would not have had otherwise. Though many had improved, the number of cures was small, but doubtless real success lay in the early diagnosis of general paralysis before the destructive process in the brain had commenced or had not become far advanced.

The President then vacated the chair.

There was a plenitude of charts and diagrams illustrative of Colonel James's remarks, on the walls of the lecture hall, and in an adjoining room the microscopic demonstration was staged. There was also exhibited a wonderful collection of the different varieties of mosquitoes, both dead and alive. The latter were arranged in such a way as to demonstrate their life-history.

The large gathering of members and their friends were tremendously interested, as well they might be, for never before had it been possible at any time or anywhere for such a comprehensive exhibition and demonstration in regard to mosquitoes and malaria to be staged.

The microscopes were kindly lent by Hawksley, and in themselves were an interesting exhibition. A member of the firm was in attendance to give any information regarding them.

Members availed themselves of the opportunity afforded of visiting sections of the Hospital as follows:

1. Hospital for Malarial Treatment of General Paralysis.
2. Admission Hospital "A."
3. Pathological Department.
4. Lecture Hall and Nurses' Training Centre.
5. Ultra-Violet Light Treatment Room.
6. X-Ray Department and Operating Theatre.
7. Dental Surgery.
8. Patients' Printing Department.

A more complete inspection of the Hospital is reserved for the November quarterly meeting, which, if found convenient to members, will be held there.

Tea was served at the invitation of the President in the Recreation Hall, during which the Horton Augmented Orchestra played selections under the leadership of Mr. R. H. Young.

There was a stall in charge of Miss P. M. Elgar, Occupation Therapist, where articles made by patients attending special occupational therapy classes were on sale.

At a convenient moment during the visit a photograph of members and their friends was taken, copies of which may be had at 6s. each, including postage, from Graham, Epsom.

This visit to Horton Mental Hospital concluded the eighty-fifth annual meeting, the first to be held under a Royal Charter, and therefore one long to be

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remembered in the annals of the Association. The proceedings were saddened by the death of the former year's President, Sir F. W. Mott, and social functions somewhat curtailed out of respect for his memory. Nevertheless it was agreed on all hands that the meeting had been both enjoyable and fruitful in good works.

SCOTTISH DIVISION.

A MEETING of the Scottish Division of the Royal Medico-Psychological Association was held in the Royal College of Physicians, Edinburgh, on Friday, July 2, 1926.

Prof. G. M. Robertson occupied the Chair.

There were ten members present.

Before taking up the ordinary business of the meeting the Chairman feelingly referred to the death of Dr. Donald Fraser, the oldest member of the Division, who for over fifty years was actively associated with the Paisley Mental Hospital, Riccartsbar, as Visiting Physician, and whose original work in psychological medicine, especially his studies in epilepsy, were known to all. It was unanimously resolved that it be recorded in the minutes that the members of the Scottish Division of the Royal Medico-Psychological Association desire to express their deep sense of the loss sustained by Dr. Fraser's death, and their sympathy with the members of his family in their bereavement, and the Secretary was instructed to send an excerpt of the minute to the relatives.

The Chairman also feelingly referred to the loss which the Association had sustained by the death of its President, Sir Frederick Mott, *K.B.E.*, one of the most illustrious members of the medical profession. Sir Frederick's brilliant researches into the physiology and pathology of the nervous system early gained for him an international reputation, and his advocacy of the early treatment of mental disease, culminating in the founding of the Maudsley Hospital, and his work for post-graduate teaching in psychiatry have had a profound effect on the progress of the specialty, while his many fine personal qualities endeared him to all with whom he came in contact. It was unanimously resolved that it be recorded in the minutes that the members of the Scottish Division of the Royal Medico-Psychological Association desire to express their deep sense of loss sustained by Sir Frederick Mott's death, and their sympathy with the members of his family in their bereavement, and the Secretary was instructed to send an excerpt of the minute to the relatives.

The minutes of the last Divisional Meeting were read and approved, and the Chairman was authorized to sign them.

Dr. John Keay was unanimously elected Chairman of the Division for the ensuing year. It was resolved that the appointment of Chairman should be for one year, but that the holder of the office should be eligible for re-election.

Drs. R. B. Campbell and Neil T. Kerr were unanimously elected Representative Members of Council for the ensuing year, and Dr. Wm. M. Buchanan was unanimously re-elected Divisional Secretary.

The following candidates, after ballot, were admitted as ordinary members of the Association:

EDMUND STANLEY SAYER LUCAS, M.R.C.S., L.R.C.P.Lond., Assistant Physician, Kingseat Mental Hospital, Newmachar, Aberdeenshire.
Proposed by Drs. Alexander, Annandale and Grant.

REGINALD BAILEY, M.B., Ch.B.Glasg., Second Assistant Medical Officer, Bangour Village, Uphall, West Lothian.
Proposed by Drs. Keay, Crichlow and Buchanan.

ROBERT CAIRNS FORRESTER, M.B., Ch.B.Edin., Second Assistant Medical Officer, Stirling District Mental Hospital, Larbert.
Proposed by Drs. Campbell, Jack and Buchanan.

MARY EVELYN MCLAREN, M.B., Ch.B.Edin., Clinical Assistant, Royal Edinburgh Mental Hospital, Edinburgh.
Proposed by Prof. Robertson, Drs. McAlister and Alexander.

The SECRETARY reported that the Advisory Committee of the Division had met the Education and Examination Committee of the General Nursing Council for Scotland on April 23, 1926, and that the following recommendations regarding the Council's final examination for mental nurses had been jointly agreed to:

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