

Part IV.—Notes and News.

THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

QUARTERLY MEETING.

THE ordinary Quarterly Meeting of the Association took place at 11, Chandos Street, Cavendish Square, London, on Thursday, May 19, 1932, the President, Dr. R. R. Leeper, in the Chair.

The minutes of the last meeting, having already appeared in the Journal, were taken as read and approved.

OBITUARY.

THE PRESIDENT said that the hand of death had fallen heavily on the Association since its last meeting. Some of the oldest veterans had been taken from among them, and they were the poorer in consequence. Greig Soutar, George Robertson, Walter Smyth, Nelis, Sir David Drummond and Prof. Shuzo Kure had all "gone over" since the last meeting. At that afternoon's Council meeting it was mentioned that the custom was to call on the friends of those dear men who were now no more, for a few words about them. But the loss of such men as Soutar, Drummond and Robertson, who were so recently with them, was felt in the hearts of all, and no words of eulogy were really needed. What they did for the Association in the years gone by was well known, and so their value had been already truly assessed. Up to the time of their death their activities for the Association were undiminished. The eulogy of such men was in the heart of each member. In grief, therefore, he asked members to stand in silence as an act of homage to the great men who had been taken.

Members accordingly stood silently in their places for a brief period.

THE PRESIDENT announced that the annual meeting of the Association would be held in Stirling, and would commence on July 12.

Dr. CAMPBELL (President-Elect) gave the meeting particulars of the programme and some details as to available accommodation at Stirling.

ELECTION OF NEW MEMBERS.

THE PRESIDENT nominated as scrutineers of the ballot Dr. Buchanan and Dr. Dove Cormac.

The following were unanimously elected members:

KRAUSZ, DESIDER, M.D.Hungary, M.D.Bologna, Assistant Medical Officer, East Sussex County Mental Hospital, Hellingly, Sussex.

Proposed by Drs. F. R. P. Taylor, P. C. Collingwood Fenwick and R. Worth.

IRVINE, FRANCIS PHILIP, M.B., Ch.B.Liverpool, Assistant Medical Officer, East Sussex County Mental Hospital, Hellingly, Sussex.

Proposed by Drs. F. R. P. Taylor, P. C. Collingwood Fenwick and R. Worth.

FLEMYNG, GEORGE GILBERT, M.D.Dubl., retired, 37c, Maresfield Gardens, London, N.W. 3.

Proposed by Drs. H. Crichton-Miller, G. Warwick Smith and R. Worth.

MURRAY, JOHN RAYMUND, M.B., B.S.Lond., M.R.C.S., L.R.C.P., Assistant Medical Officer, Claybury Mental Hospital, Woodford Bridge, Essex.

Proposed by Drs. C. F. Barham, Frederick Paine and M. A. Walsh.

BURNS, ROBERT HENDERSON, B.A.Cantab., M.R.C.S., L.R.C.P., Assistant Medical Officer, Claybury Mental Hospital, Woodford Bridge, Essex.

Proposed by Drs. G. F. Barham, Frederick Paine and W. J. Lascelles.

SCHNEIDER, FRANK EDWIN ERNEST, M.D.Lond., M.R.C.S., L.R.C.P., D.P.M.,
Medical Superintendent, Rampton State Institution for Mental Defectives,
Retford, Notts.

Proposed by Drs. W. Norwood East, John Brander and R. Worth.

BHATHENA, SORAB JAMASJI, Lt.-Col. I.M.S., L.R.C.P.&S.Edin., L.R.F.P. & S.
Glasg., L.M.Dubl., Civil Surgeon, Civil Hospital, Thana, Bombay, India.

Proposed by Drs. R. Worth, G. Warwick Smith and G. W. Shore.

The PRESIDENT read a communication which had been received on the subject of the forthcoming International Congress of Local Authorities. He asked any members who wished to attend to intimate their desire to the General Secretary.

APPOINTMENT OF A PAID SECRETARY AND ASSISTANT LIBRARIAN.

The PRESIDENT said that the Council, at its meeting that morning, discussed and arrived at a decision upon a matter which was vital to the Association's interests. For many years past the General Secretary, Dr. Worth, who had been doing Herculean work for the Association, had found it made increasing inroads on his private time, and it was felt that he ought to receive regular paid help. It must be remembered that he had many duties to do besides serving as an honorary officer of this Association. It had now been decided by the Council to appoint a paid Secretary to assist Dr. Worth, and also to act as Assistant Librarian, at a commencing salary of £150, and a yearly increase of £25 until the figure of £250 was reached. The work attaching to this great Association was now very onerous, and he hoped that decision would be approved by the members generally. (Applause.)

THE MAUDSLEY LECTURE.

The PRESIDENT announced that the delivery of this lecture had been postponed until November, as the Lecturer could not deliver it earlier than that date.

The Hon. Treasurer of the Association, Dr. Smith, had been appointed by the Council to attend on behalf of the Association the Réunion Internationale d'Hygiène Mentale to be held in Paris.

DISCUSSION.

Dr. EDWIN GOODALL, C.B.E., M.D.Lond., B.S., F.R.C.P., opened a discussion on "Schizophrenia and Infection" by reading the following paper :

"The Exciting Cause of Certain States of Disease, at Present Classified Under 'Schizophrenia' by Psychiatrists, may be Infection. The Pathogenesis of these States does not, in this Country, receive the Close, Prolonged and Co-ordinated Clinical and Pathological Study which it Demands," by EDWIN GOODALL, C.B.E., M.D.Lond., B.S., F.R.C.P., Hon. Consulting Physician (late Medical Superintendent), Cardiff City Mental Hospital, and to the Lady Chichester Hospital, Hove.

It was in 1889—43 years ago—that, as Resident Clinical Assistant at Bethlem Royal Hospital, I first saw cases then described as acute dementia (anergic stupor) and of delusional stupor, or melancholia cum stupore. The symptoms, as we know them now, including kinetic disorders, were fully described by clinical teachers and in the text-books. As regards katatonia more especially, that state was first described by Kahlbaum in 1874. These respective disorders, as we knew them, are dealt with in such a work as Hack Tuke's *Dictionary of Psychological Medicine* (1892). They are the dementia præcox or schizophrenia of modern times. *Plus ça change, plus c'est la même chose.* Pathology, prognosis, treatment—let not the youth and comparative youth which I see before me smile at the information set out in the older books. How much more do the newest books tell us? And the very recent physico-chemical work has as yet given us no information. One finds

oneself endowed with two new names, but in the things that matter one is no richer. As we took careful histories, even in those remote times, we were well aware of the morbid mental inheritance of the cases concerned. That they are now regarded as the possessors, before mental illness shows itself, of a "schizoid" personality does not make a world of difference. The beginnings of knowledge regarding the autonomic nervous system and the endocrine glands has provoked some scientific interest in these patients. They exhibit various characteristics of the "vegetative-stigmatized," to adopt a German expression. I have not found in my systematic reading of foreign literature any material support of Mott's work on gonadal defects or stigmata in these cases. In justice to that great student and observer I record my belief that few, indeed, if any, of those coming after have worked on this particular subject upon such a scale, have had at disposal or at any rate employed, such extensive material as he did. It was, I think, about the year 1913 that attempts were started to ascertain whether there was evidence of a reaction between the serum of certain cases of insanity—and especially of schizophrenia—and gonadal or brain-tissue, on the basis of the Abderhalden test. Probably our experience at the Cardiff City Mental Hospital at that time was that of others, namely, that the technique of this method was too involved, tedious and uncertain to justify its employment. I am not aware that any results of importance have since been obtained, but the inquiry into a possible antigen-antibody reaction between, on the one hand, gonadal substance (in some form to be decided upon) or brain-tissue (likewise, and in this case also from different parts of the brain) and, on the other hand, serum, is likely to be revived on the basis of improved biochemical knowledge and technique. The *prima facie* reason for thinking there might be a reaction between the tissues mentioned in cases of schizophrenia is not clear to me. Putting aside the postulate of mere deficiency in cellular development, and assuming a cellular dystrophy, that is not the equivalent, antigenically, of such a thing as a bacterium, a spirochæte, a cancer-cell, or even, to revert to the original Abderhalden reaction, of placental tissue. In the light of recent information concerning gonadotropic function of the anterior lobe of the hypophysis there would seem to be justification for employing, in the reaction, tissue from that area as well as gonadal tissue.

The appearance of epidemic encephalitis and its sequela has created fresh interest in the problem of the pathogenesis of some of the morbid states classified under schizophrenia. And this has been further fanned by the results of animal experimentation with bulbo-capnine and mescaline.

It is certain that there are observers who consider that there is no essential difference between psychotic disturbances connected with encephalitis (post-encephalitic) and those met with in states covered by the description "schizophrenia." Thus, Menninger von Lerchenthal observes (1) "Only during the last few years has research been undertaken with a view to inquiring into the great similarity that exists between schizophrenia and post-encephalitic psychoses." Again, Rosenfeld (2): "The assumption is justified that, amongst the large number of cases which are to-day described as schizophrenia, some might, from the point of view of ætiology, be classed with post-encephalitic conditions." There are to my knowledge, in this country, those who assert that a condition diagnosed originally as epidemic encephalitis has passed into schizophrenia; that in a given case the condition present has been classed now under the one, now the other of these headings. Marchand (3), in an article entitled "Dementia Præcox Symptomatic of Encephalitis," refers to two different anatomico-pathological processes in the former. In one there are only degenerative lesions of the nerve-cells, in the other there is encephalitis or meningo-encephalitis. He considers that encephalitic dementia præcox is more frequent than the degenerative form. This statement and this view require to be investigated. Some schizophrenics have a history pointing to encephalitis in early childhood. In Rehm's (4) cases the schizophrenia showed itself at from 25-30 years of age. Such observations are significant and show the need for accurate record and following up of illness in the individual.

Various somatic disturbances are alike in post-encephalitic and schizophrenic states, especially in the katatonic variety of the latter. This suggests a common pathological involvement of those basal portions of the brain (basal ganglia and areas around and at the base of the third ventricle) which seem to be associated with vegetative functions. Uncomplicated *post-mortem* material from early cases of schizophrenia is most difficult to obtain. This is a patent reason why we know

practically nothing about the histology of the parts named in katatonic states, which I hold to be especially interesting for research. One may mention amongst these somatic disturbances circulatory and vaso-motor states illustrated by tachy- or bradycardia, acrocyanosis, dermatographism, œdema. Further, sub-normal temperatures, mydriasis, sialorrhœa, hyperidrosis, greasiness of facial skin, mask-face, disorders of motility (hyper-, hypo-, and akinesia), disturbances uttering themselves affectively as illustrated by emotional abnormalities and impulsiveness. I am not aware that observations upon the function of sleep in cases of schizophrenia of different kinds have been carried out over the twenty-four hours, with a view to determining whether there are variations from the physiological condition as regards time of sleep. Do these patients, in fact, show somnolence? E. Pinto Cesar is cited (5) as stating that almost all the extra-pyramidal symptoms of post-encephalitic Parkinsonianism have been observed in katatonic dementia præcox. He considers that an infection creating degenerative lesions similar to those of encephalitis lies at the base of katatonia, but in the review from which I cite no evidence for this view is given.

Epidemic encephalitis, with the psycho-somatic disorders which may accompany it, may be a virus disease (this has not yet been shown), and similarly caused, perhaps, are the schizophrenic states which resemble them, katatonia especially. The same cause may be operative in the two conditions, differences in the clinical picture being due to differences in individuals, based upon heredity or inborn predisposition. It has happened that a patient allocated at hospital out-patients to the general physician as apparently post-encephalitic has been passed by him to the psychiatrist in an adjoining room because the case seems "mental" (has less mental reaction to ordinary questioning than is customary in post-encephalitic states). Scientific differentiation is not possible in such an instance, and a distinguishing label is out of place.

The theory that a virus or toxin is the causative factor in epidemic encephalitis and some of the states classed under "schizophrenia" is supported by the knowledge that similar symptoms and signs to those seen in them may follow upon various maladies due to such a factor, in connection with which maladies encephalitis ensues. Thus, vaccinia, varicella, variola, measles, perhaps influenza. Kamman (6) reports schizophrenic reactions following upon the last. There is the possibility that the morbid factors of these maladies are merely provocative agents, arousing to action the latent virus of epidemic encephalitis. Aside from the matter of similar symptomatology, numerous cases, according to Marchand (referred to above), have been cited of actual dementia præcox which have begun before or during convalescence from infectious maladies—typhoid, influenza, puerperal fever, etc. A case is reported in which a psychosis of the puerperium, with fever and labial herpes, has passed into symptomatic schizophrenia (Herz, 9). In favour of the infectious origin of the encephalitic lesions found in some of these cases is the fact, according to Marchand, that dementia præcox may commence with acute delirium.

It is, of course, the case that quantitative and qualitative leucocytic counts have been made in individual cases of schizophrenia: several of us have had personal experience in this respect. But my belief is that work of this kind has been done in the main only occasionally and unsystematically in the individual case. What one would wish is that in early cases, of katatonic stupor preferably—(septic foci being excluded or eliminated)—the leucocytic curve should be kept in chart-form, and observations made as to a possible "shift to the left," in the sense of Arneith, with a view to obtaining evidence of an infective process. This is a laborious and tedious proceeding. Such work being characteristic of the Germans, it is not surprising to find an article by Sagel (7) on the subject. His conclusion is that in a large number of schizophreniacs the hæmogram and leucocytal curve point to the view that infections, partly acute, partly more chronic, or purely toxic processes run, to say the least, parallel to the mental disorder.

Support is lent to the theory of toxic origin of the katatonic kind of schizophrenia by the significant experiments of de Jong and Baruk with bulbocapnine and mescaline (8). Amongst the animals they employed were cats and apes. A perusal of their work bears out their view that the katatonic conditions they produced in animals have a great resemblance to like conditions in man. The inference is that human katatonia is a consequence of the action of some toxin. If the kinetic manifestations have this origin we naturally refer the entire pathological

picture to the same. I have not yet read the book by de Jong and Baruk, which is amongst my references, and which was published in Paris in 1930, but only an abstract. Whatever psychic phenomena the experimental animals showed will doubtless be set out therein. It is most important that this experimental work be repeated and extended, and I confess myself much disappointed that nothing has been done, or, at any rate, published (to the best of my belief) in this connection in this country. These experiments might be extended by inoculation of cats, dogs and apes with vaccinia, variola, measles, rubella (the last two from the nasal mucous membrane), and herpes virus, with a view to producing encephalitis and sequelæ thereof, for the purpose of clinical and histological study and comparison with such a condition as katatonic stupor. The morbid histology of the cortex cerebri, in different areas, the basal ganglia and the hypothalamus in experimental animals subjected to these inoculations and to the toxic drugs referred to would need to be investigated.

If we ponder the observations and experiences which have been set out above, and others of a like nature, to which my opportunity does not give me time to refer, I submit that we may summarize thus: The cause of encephalitis lethargica (von Economo) or epidemic encephalitis is unknown, but is suspected to be a filterable virus. An infection of some kind has to be looked for. The clinical similarity between some cases described under schizophrenia and encephalitic and post-encephalitic states has been commented on by many. The view is held that an encephalitis has passed into schizophrenia. The association of schizophrenia with infectious maladies has been pointed out, as has also the resemblance between conditions produced by toxic agents in experimental animals and those found in the katatonic state in man. The evidence cannot be ignored; the proper course is to pursue scientific inquiry into these conditions which have resemblance to each other. Whilst my remarks are concerned particularly with the possible infective origin of certain of the morbid states classed under schizophrenia, my title also refers to the lack of attention to the general subject of their pathogenesis. Endogenous as well as exogenous, any material causes which may precipitate the attack, require to be sought for. A practical difficulty at the present time in carrying out a combined research on epidemic encephalitis (with its associated states or sequels) and schizophrenia is that there is no epidemic of the former, in this country at any rate. Sporadic and particularly anomalous cases of the disease are perhaps usually available. It is a question for consideration how far it would be feasible to conduct a joint investigation with the United States and certain countries in the British Empire.

A combined research, such as I propose, implies the participation of all relevant workers with suitable clinical material and research laboratories, and it should be located at a suitable centre.

Although I have been dealing with a research of a particular kind, which I believe should not and need not be delayed, the matter of the desirability of the provision of a research centre in psychiatry, to undertake every relevant form of research, including genetical, and associated with clinical facilities, comes up naturally in this connection. This is a matter which is exercising many minds at present. I pay a tribute to segregated, local efforts, and their results, but on various, including economic grounds, these cannot be the equivalent of a centre. A description of the new Psychiatric Clinic of the New York Hospital—Cornell University Medical Centre, appears in the last April number of the *American Mental Hygiene Bulletin*. Several here present will be aware of this development. An entire floor will be given over to laboratories in which structural, chemical, physiological and psychological researches may be carried on. The German Research Institute in Psychiatry, Munich, to my mind the great exemplar, is always before us. The fact that we find ourselves in a position of economic stress is no reason why we should not work for the establishment of such a centre and clinic. In my view the best thing we can now do for psychiatry in all its aspects is to take steps to interest all authorities concerned in this matter, and to bring home to public opinion its importance. This educational process is, I suggest, eminently the privilege and the responsibility of our Association.

References.—(1) Lerchenthal, Menninger von, *Zeitschr. f. d. ges. Neur. u. Psych.*, 1930, cxxv.—(2) Rosenfeld, *Zentralbl. f. d. ges. Neur. u. Psych.*, September 15, 1930.—(3) Marchand, "La démence précoce symptomatique d'encéphalite," *Ann. Méd.-Psych.*, 1930, 88, ii, pp 5-36 and 52, 53.—(4) Rehm, author's

abstract in *Zentralbl. f. d. ges. Neur. u. Psych.*, March 1, 1932.—(5) Cesar, E. Pinto, cited in *Arch. of Neurol. and Psychiat.*, December, 1930.—(6) Kamman, Gordon R., "Schizophrenic Reaction following Influenza," *Journ. Amer. Med. Assoc.*, 1930, xciv, pp. 1286-1288.—(7) Sagel, *Zeitschr. f. d. ges. Neur. u. Psych.*, 1930, cxxv.—(8) de Jong, H., *Nederl. Tijdschr. v. Geneesk.*, 1931, v; *idem* and Baruk, abstract, *Zentralbl. f. d. ges. Neur. u. Psych.*, August 1, 1931; Krause and de Jong, *Zeitschr. f. Neurol.*, cxxxiii, H. 5; de Jong, H., and Baruk, H., *La catatonie expérimentale par la bulbo-capnine*, Paris, Masson et Cie, 1930, ref. in *Deutsch. med. Woch.*, September 25, 1931.—(9) Herz, E., *Zeitschr. f. Neur. u. Psych.*, 1931, cxxxvi.

The PRESIDENT said that members present had just listened to a very learned discourse; and those who knew Dr. Goodall and his work expected nothing less. When one heard Dr. Goodall, one heard something which would stimulate one with an added desire to do something for one's patients. In the speaker's own experience he got acute cases day after day, and he wanted to discover what septic foci there were in the body. One went to the pathologist, and often all he would say was that the patient had leucocytosis or leucopænia. He wished pathologists would tell physicians more definitely and more often whether the person concerned had a bacterial infection or not, because in many cases even a very diligent search failed to reveal a septic focus. One went to the dentist, to the gynæcologist, to the X-ray man, but often one drew a blank from them all. The only clue was that when leucocytosis was present there was probably a septic focus somewhere in the body. It would be a great help if one could confidently arrive at the conclusion that a particular patient was or was not suffering from some form of sepsis.

Dr. SKOTTOWE said that, as he understood the proposition which was put forward at the beginning of this discussion, it was not so much a criticism that research was not being carried out, but rather, that the research being carried out was not properly co-ordinated. That, he considered, was a perfectly valid criticism. One had only to look into the literature in this department which had been issued in this country for the last three or four years to realize that, though plenty of research was being done, it was being carried out along diverse or haphazard lines: one observer described endocrine abnormalities, another described acid base disturbance, another concentrated on septic foci. These might exist, and he did not think anyone denied that they existed, but it was important to consider that the experiments were very difficult to control, in the sense of making similar observations on non-psychotic persons.

Another matter which must be considered was how far might things like septic foci be due to a change in the patient's mode of life, his illness being, perhaps, due to something else? He thought there was no doubt that a considerable proportion of schizophrenic patients showed evidence of organic brain disease. Various neurological signs had been described by different observers, also observations had been made on the histo-pathological side. He knew it was said that histo-pathology of the brain could not take one much further, but what about the bacteriology? These areas of brain sclerosis must own some origin. This condition was not due to ordinary bacteria, but might be caused secondarily by toxins, even though no convincing case in favour of that had yet been made out. On the other hand, he thought very little work had been done with the idea of ascertaining whether these areas of brain sclerosis might be due to a filter-passing virus. Without subscribing to the view just given expression to by Dr. Goodall that schizophrenia and encephalitis were manifestations of the same disease process, he thought there was yet sufficient justification to cause inquiry to be made as to whether a filter-passing virus could cause these brain changes. This question was taken as a subject for inquiry a few years ago at Cardiff. They took filtered naso-pharyngeal washings and also cerebro-spinal fluid from schizophrenic patients, and injected them into rabbits' brains. In 60 rabbits so treated there was only one which had sepsis, but these injections induced other changes in the rabbits' brains. The practical difficulties in the way of the investigation were so great that he and colleagues were not in a position to carry it further. It was difficult to get an early case of schizophrenia, one which had been no more than a week or ten days ill; moreover, rabbits were not suitable animals for the work, as they had a

spontaneous encephalitis of their own. The most suitable animals to use were apes, and they were difficult to procure, and to work with.

The third great difficulty in the way was that connected with the bacteriological technique. Filter-passer work seemed to be a very specialized branch of bacteriology. They had the advice of Dr. Bedson, of London Hospital, but in spite of it they were unable to pursue the investigation further. The question therefore arose as to what further desiderata were necessary before such an undertaking as this investigation could be entered into. He thought it was necessary to have a team of at least four people: a clinical psychiatrist, a clinical neurologist, a brain histologist, and a bacteriologist who was skilled in filter-passing work. He did not know of many hospitals who had such persons attached to their staffs, and he thought the best location for such a research would be London. It would be very desirable if all the energy expended in haphazard work here and there could be co-ordinated into an organized research on this pressing problem.

Sir HUBERT BOND said that he did not think he could contribute anything of serious importance to the discussion. It must be patent to all present that Dr. Goodall was dealing in this paper with a malady which accounted, in its end-products, for at least 50% of mental hospital patients; therefore no one could deny the importance of the subject.

There were, however, undoubtedly very great difficulties, and there should be sympathy with those difficulties, and by openly expressing that sympathy much would be done towards progressing in the way Dr. Goodall wanted.

With regard to the technical aspect of the subject, he considered that it was very difficult really to eliminate septic foci. Another point he would wish to make was, that workers were so dreadfully hypnotized by the position in which they placed heredity in relation to mental disorder; it was not the same as Dr. Goodall's genetics; and this tended to dry up enthusiasm. He felt that if general physicians and specialist physicians working in other departments were as keen on heredity as alienists were, it would be discovered that all groups of morbid disorders showed as much heredity as did those which this Association dealt with.

He had very much enjoyed listening to what Dr. Goodall said, and in regard to his reference to what was going on in Boston, perhaps Dr. Vernon Briggs could answer that question.

Dr. VERNON BRIGGS said he felt he had been listening to a very illuminating paper—one which, he thought, brought up to date progressive mental medicine.

Dr. Goodall had spoken of Dr. Campbell's researches at the Boston Psychiatric Hospital, but the speaker did not think much that was new had been obtained.

Going outside Massachusetts, Bouchet, in 1905, claimed that dementia præcox, and especially manic-depressive insanity, were due to auto-intoxication. Cotton's work on focal infections was well known. Certainly, whatever caused the mental condition, a focus of infection was an added burden to the patient's system, and when that was removed, there was a better opportunity of overcoming the other disability. His thesis is accepted by a certain number of psychiatrists, but is adversely criticized by others. The speaker did not think anything positive had yet been proved by it.

The latest practical work which had been done on auto-intoxication was by Dr. Wm. A. Bryan, at the Worcester State Hospital, who had been doing colonic flushings. Whatever might be the eventual result of this course of treatment, the immediate result of the flushings was that the discharge-rate of patients had been increased to 42%. The speaker had received a letter from Dr. May recently in which he said his discharge rate had now been increased to 55%. Colonic flushing was worthy of consideration, though it could not be accepted as a scientific demonstration until others had tried it.

With regard to heredity, workers in the United States had almost eliminated the hereditary factor. Fernald, in his School for Feeble-Minded, studied, before he died, the escapes from that school. He got 75% of escapes, and the percentage of feeble-minded descendants was much below that for the average population. Fernald was a firm believer in heredity at first, but after his study he said that as the farmer in a rural district brought in stock from his neighbour to raise the standard of his own stock, so efforts along the same lines could be made to prevent our descendants from being feeble-minded.

Until a few years ago, psychiatry was not required as a subject for graduation in the medical schools, nor by the State Boards for the practice of medicine. The subject was taught usually only in the fourth year, the men being merely taken to State Hospitals for a few hours of lectures in the year, and being shown terminal cases only. The result was that most men shunned mental medicine; and the general practitioner, when he came to a case of mental medicine, simply certified it and sent it to the mental hospital, not being able to deal with it personally. Later a law was passed by the legislative bodies of Massachusetts requiring the passing of the same degree of examination in psychiatry before practising as in surgery, internal medicine, gynaecology, materia medica and other subjects. Last year, for the first time, Tuft's Medical School had a four-year course, and the second-year students were required to attend the mental clinics at the general hospitals and the mental hygiene clinics, seeing the cases not in their terminal stages, but in their beginnings. In the third year students were required to spend not less than two months in a hospital for mental diseases, and only in their fourth year, after they had become familiar with the incipient case, were they shown terminal cases. That was a fundamental alteration for the better, and he hoped a similar insistence would be made on students in this country.

Dr. FORD ROBERTSON said that the whole subject, from the scientific point of view, was a very complex one; it did not resolve itself into a question of heredity, nor of colonic lavage; it was necessary to go further than that.

With regard to virus investigations, a number of the members of the Association's Pathological Sub-committee heard Dr. Knyvett Gordon discourse on the difficulties of that problem, and this had a distinct bearing on the proposed virus investigation in the katatonic and post-encephalitic states. He, the speaker, agreed with Dr. Goodall that it would require a high standard of research worker to undertake such an investigation with any hope of success. Before proceeding to so difficult a research, he would like to mention that there was still an enormous field of investigation to be carried out in the realms of ordinary bacteriology. He was now referring particularly to his father's researches, which he, the speaker, had had the privilege of continuing for six years, and it had been his good fortune to have made some progress in this direction. There was still a big field to be explored in anaerobic bacteriology on the experimental side, and those who had conducted such research must realize what a protracted and difficult process it was, requiring the combined efforts of bacteriologist, histologist and biochemist.

It had been a great pleasure to him to listen to what Dr. Goodall had said, and it was his sincere hope that any plans which might be formulated would bear fruit in the future.

Dr. R. M. BARCLAY remarked on the very inadequate salaries obtained by research workers. No one had done better or more valuable research than had Dr. Ford Robertson's father, but he had never been adequately paid for it.

Dr. ELIZABETH CASSON referred to the incidence of intestinal infection by non-lactose fermenters, and the use of vaccines made of these by Dr. Quinton from specimens from forty-three patients, thirty-four of whom gave positive results. Fifteen were Morgan infections, ten *proteus*, five dysentery, and four *faecalis alkaligenes*.

There was a case at Virginia Water which was thought to be hopeless when she arrived, but recovered completely. This patient had a Morgan bacillus infection; she had been working in a children's hospital where researches were being carried out on infantile diarrhoea. There was also a case of a man who broke down at 20 years of age. The speaker knew him at 3 or 4 years of age, when he fell off a bridge and swallowed some of the river mud, and after that he was very ill with dysentery for six weeks. He had always been behind at school, but latterly he had done much better, and gained an Exhibition to Oxford. Then he broke down. He had a Morgan infection, and it was extraordinary to see the negative phase which he had when the vaccine was given. Had there been no merit in the vaccine there would have been no negative phase with an exacerbation of all the symptoms. He was not psychotic, but he could not feel that his hands were his own. He eventually recovered.

In the Morgan group, five out of seven of suitable age showed schizophrenic

symptoms. Doses of vaccine were given at intervals—never less than five weeks. The negative phase had often been marked by definite exacerbations of mental symptoms. The results on the whole were good, and demanded further work.

Dr. B. H. SHAW, referring to ferments and toxins, said that certain bacteria had a specially destructive effect on endothelial cells and as a result the intracellular ferments were released. The products of the action of such ferments on phospholipins were of great importance, and it was to the investigation of these that attention should be directed; they were synaptic poisons, belonging to the curare group, such for example as neurine, choline, tetanine, etc., and were found in tissues after death under certain conditions. Encephalitis lethargica was seasonal and definitely associated with influenzal periods, and the toxin of the influenza bacillus was essentially an endothelial poison, as witness the catarrh, etc., which accompanied it. In a case very kindly investigated for him recently by Dr. Pickworth, and which had been chronic for years, he found the influenza bacillus in the ethmoidal sinus, associated with much old standing catarrh. The speaker had no doubt, from his experience, that the influenza bacillus did act in that way; it killed the endothelium; the endothelial ferments were set free and acting on the phospholipins produced these poisonous bases. He was firmly convinced that this ferment question had much to do with the ætiology of dementia præcox. These bases being synaptic poisons the result was a dissociation and those tones changes common to both encephalitis lethargica and dementia præcox. The relative amount of cholesterol present was of importance as the ferment activity was kept in check by this substance. If the proportion of cholesterol became reduced below a certain amount, there inevitably occurred a destruction of the phospholipins.

In his opinion what was needed was investigation of the intracellular ferments of the reticulo-endothelial system.

Dr. A. S. PATERSON said he would like to take the opportunity of giving some information on some of the points to which speakers had referred.

Sir Hubert Bond had mentioned heredity, and the question of the prognosis in schizophrenia. The Eugenic Society would shortly be issuing a book which would be a joint effort by experts in different branches of medicine, giving the hereditary prognosis in these various diseases. It promised to be a book which deserved the widest reading.

Dr. Goodall had referred to De Jong and Baruk's book on experimental katatonia, and the speaker would like to say that that book was now being more criticized than when it first came out. The difficulty was to show that bulbocapnine katatonia was a replica of katatonia as found in human beings. Several experts, especially Divry in Belgium, and Schaltenbrand, held that it had some features in common with post-encephalitic Parkinsonianism. It was a pity that in this country neurology was so much divorced from psychiatry, because this post-encephalic Parkinsonianism had become a common disease of the nervous system, and katatonia was one of the commonest diseases met with by the psychiatrist. There were a number of psychiatrists who did not always recognize the cases of post-encephalitic Parkinsonianism which came into their hospitals, and mixed cases, which undoubtedly occurred, were missed by both neurologists and psychiatrists.

With regard to research, he thought that if we in this country could not raise money for some central place of the same kind as the institution at Munich, which was being carried forward in all its departments even before the Rockefeller grant was received, there should be more co-operation in this country with the neurologists, and a leaf might well be taken out of America's book on the subject. In America there was a meeting every year of an Association of workers in mental and nervous diseases, and at those meetings a symposium was held, the subject of which was advertised a year or two beforehand. As the outcome of that co-operation there had been published a series of most valuable papers on various problems in mental disease. Two had appeared on the subject of schizophrenia.

Dr. F. A. PICKWORTH (Birmingham) was of the opinion that it was unnecessary in the present state of our knowledge to invoke virus disease as a cause of dementia

præcox ; the comparison made to lethargic encephalitis did not apply so much to the acute form (of virus origin) as to the chronic form, which had quite a different pathology. Eden and Yates had shown in 1927 that the sphenoidal sinus was diseased in all of 34 cases of lethargic encephalitis examined, and Stewart and Evans in 1930 found disease in 18 of 20 cases of Parkinsonianism which involved the sphenoidal sinuses. That part of the brain-stem which was likely to be involved in cases showing catatonia was very near the sphenoidal sinus, and without doubt would be affected in greater or less degree by local absorption of toxic substances from the sinus when chronic infection damaged the mucosa. The work at Birmingham, which Dr. Goodall had not yet seen, strongly supported the infectious origin of dementia præcox put forward by him. Although cases were usually not available for pathological examination till many years after the initial processes had ceased, yet it was possible in many instances to demonstrate evidences of long-past chronic infection. He had with him a specimen of a sphenoidal sinus from a case of dementia præcox which showed infection of many years' duration, and which eventually caused the death of the patient ; also a specimen showing adhesions of the frontal lobe of the brain to the dura mater—evidence of long-past infection *via* the cribriform plate. *Post-mortem* examination of 327 cases of mental disorder at Birmingham showed, by a special technique, macroscopic evidences of infection of one or more nasal sinuses in 175 ; and of these, 100 showed the infection in the sphenoidal cavity. The pathology of these infections was being dealt with in the forthcoming number of the *Journal of Mental Science*.

Dr. GOODALL, in reply, thanked all who had spoken for their kind remarks concerning his paper.

He was pleased that his friend, Dr. Skottowe, with whom he had worked for some time, supported his remarks as to a research centre, and that was the real object of reading this paper. Sir Hubert Bond also supported the proposition, and for that support he thanked Sir Hubert, as he could be most useful in that direction, owing to the position he occupied.

He was pleased to see Dr. Vernon Briggs present, and thanked that gentleman for his remarks. When he was President of this Association he asked Dr. Cotton over here, at the instigation of Dr. Graves, of Birmingham, and he told the Association about his work. That work had been applauded by some, and heavily criticized by others, especially in Germany.

With regard to colonic flushings, he, the speaker was suspicious as to the efficacy of these. When these were used he thought there was "a smile on the face of the colon." He had used them often, and had seen nurses do so, placing the patients in strange attitudes, so as to get the washing substance well up to, if not past, the ileo-cæcal valve. He would like to see that done under laparotomy in an animal, or while it was watched by means of X-rays, the lavage solution having been made opaque for the observation.

Dr. Ford-Robertson's work members knew well, and the speaker knew that gentleman's father. It was a pleasure to know the son was following in the same line of work, and his paper in the *Journal of Mental Science* for January, on the intestinal infections, especially as to anaerobic organisms, was extraordinarily full. Dr. Robertson was one of the men he would like to see as a worker at such a research centre as had been advocated—one of the team he had referred to.

The remarks made by Dr. Paterson were very informative ; he spoke of the need of associating the work of the neurologist and the psychiatrist, and that was what was attempted the other day when there was a meeting at the British Medical Association House of prominent psychiatrists and neurologists, and it was there resolved that a combined research on the maladies dealt with should be carried out by experts in both branches, and the hope was expressed that it would be based on Bethlem Royal Hospital, which seemed admirably adapted for the purpose. If this meeting should result in the promotion of a central research institute in London he would be more than glad.

The PRESIDENT proposed a vote of thanks to Dr. Goodall for his paper, and it was carried by acclamation.
