

British Medical Journal.

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THE BUDGET SCHEMES : LABORATORIES.

THE proposal of the Chancellor of the Exchequer that money should be set aside for the provision of increased laboratory facilities in aid of diagnosis and treatment has already been referred to, and we have urged that it should be the subject of careful inquiry by the medical profession. It will be well, however, to consider the subject more fully.

The first thing to be noted about the Government's proposal is that the money to be set aside for the provision of laboratories is coupled with that connected with nursing and tuberculosis, which it is apparently intended shall be administered by the Local Government Board as supplementary to the public health grants. It may be assumed, therefore, that it is not proposed that in the first place the arrangements shall be made through the Insurance Committees, who, for the present at any rate, are not concerned with the administration of medical benefit to any others than insured persons. From a later sentence in the Budget speech it would appear as if Insurance Committees may be empowered in various matters to administer special funds if the local authority should fail to do so, and the provision of laboratory facilities in connexion with the medical service of the insured may be one of these matters.

We hope in any case that it is not intended to work a scheme of this kind through the smaller urban and rural sanitary authorities. Such an arrangement would probably result in hopeless confusion in the central administrative offices, and could not be expected to lead to the establishment of a satisfactory service.

Laboratories are required for public health and for clinical purposes, and these purposes overlap to some extent. Arrangements for the examination of specimens of water, milk, samples taken under the Food and Drugs Act, and for kindred purposes, have been made to a greater or less degree by nearly all the public health authorities. Some of them also have made arrangements for the examination of swabs and other material connected with the chief infectious fevers under their public health duties; but the more clinical work of laboratories—such as that connected with the preparation of vaccines, the carrying out of Wassermann and other tests, blood counts, the examination of pleural effusions, cerebro-spinal and other fluids, the chemical and bacteriological examination of different excreta, test meals, and so forth, and the examination of sections of morbid tissues—have hitherto been undertaken almost exclusively by the laboratories connected with hospitals and medical schools and colleges or in special institutions of which practitioners are able to make use. If full advantage is to be taken of laboratories in aiding the diagnosis and treatment of sickness, it is evident that full use should be made of them as clinical laboratories and that their scope should extend much beyond that of infectious diseases. With the improvement of postal and other services for sending material, it would

evidently be wise in the first place to avoid an unnecessary multiplication of laboratories, but they should be reasonably convenient of access to practitioners generally.

In the report of the Medical Officer of the Local Government Board (1912-13) there is an appendix on the pathological work of public authorities and hospitals. A perusal of it shows clearly enough that, except in a few favoured places, there is a serious deficiency of laboratory facilities throughout the country. A few county councils have laboratories of their own for public health work, some have made arrangements with the laboratories attached to universities or with others privately conducted, but only twenty-two of the sixty-one administrative counties outside London have made arrangements under which more than one specimen per 1,000 of the population was examined. In more than half the counties the provision was practically *nil*. In the boroughs the provision was somewhat more ample, although in many of them little or nothing was done. The number of specimens examined under the different authorities presents the most extraordinary differences, varying from 60 per 1,000 in Croydon to less than 1 per 1,000 in many boroughs. Even in places quite near together the differences are remarkable. In Halifax the proportion of specimens examined per 1,000 was 0.81, whilst in Leeds it was 30.2. Some London boroughs appear to have made arrangements of a fairly complete kind for general public health purposes, whereas some others have done nothing. In many large industrial areas there is at the present time no provision, except at the doctor's own expense or through the agencies of the different hospitals, whereby proper laboratory examination of specimens of materials can be made, and the conclusion of the report on this point is fully justified: "When practitioners are thus left to their own resources, the conditions of medical practice among the great mass of the population do not enable them to obtain bacteriological aids to diagnosis except in isolated instances. There is no reasonable doubt that, as a result of the failure to use these means of diagnosis, a considerable mass of disease remains undetected, or detected only after delay, and preventive measures are rendered relatively ineffective."

If means can be devised whereby medical men in industrial practice can readily obtain reliable reports on specimens without cost to themselves, they would be encouraged to make greater use of whatever assistance laboratories can provide, with resulting benefit both to their patients and to their own work. The Government has evidently decided to supply State aid to meet this want, and we welcome the decision. The question is, What is the best way of setting about it? One large properly directed laboratory can meet the needs of a very considerable population; and the line of least resistance obviously is to ascertain to what extent the laboratories connected with existing universities, colleges, and other approved institutions could be used. A laboratory is of no use unless it is properly staffed, and one of the first difficulties encountered will probably be due to the discovery that the supply of properly trained and trustworthy men to undertake all the work needed is short of the requirements. One of the regulations dealing with the distribution of the public health grants, we should expect, will be that it is to be the duty of the county or county borough authorities, as soon as may be, to make arrangements for the provision of proper laboratory facilities for those who require

them in their area. These arrangements need not, it seems to us, interfere with those at present made by private practitioners for patients who can afford to make private arrangements. It will, we believe, be found desirable to group certain county or county boroughs together for laboratory purposes, and we hope that, as far as possible, they will be associated with the laboratories connected with existing medical teaching institutions. It is in them that we have our recruiting ground for the training of pathologists, and an essential feature of the scheme must be to encourage the production of suitable and competent experts. A good many complaints of the costliness of various pathological examinations have been heard; but, if the arrangements are made on properly comprehensive lines, the cost of a general laboratory scheme should not be excessive, and we should deplore any attempts to make it so. The cost of maintaining and running a well equipped laboratory is not great, but if a sufficient number of competent and reliable workers is to be attracted, it will be necessary to pay considerably more in the way of salaries than the pittance which some of them receive at present. We believe that it would be possible to do this and to maintain the laboratories on proper lines, with advantage both to medical practice and to existing institutions, without increasing the charge for these purposes which appears to be anticipated as likely to be required in the first full year under the Budget proposals. Where arrangements cannot be made with existing institutions or where there are none available, county authorities will doubtless be disposed to set up laboratories of their own, but we are inclined to think that the extent to which this need be done will not be very considerable, at any rate for some time to come, although much, of course, must depend upon the general character of the scheme and the reception it meets.

THE PATHOLOGY OF INSANITY.

ELSEWHERE in this issue will be found an account of the new volume of the *Archives of Neurology and Psychiatry*, in which are embodied the results of investigations carried out in the Pathological Laboratory of the London County Asylums at Claybury since the issue of the fifth volume in 1911. An attempt has been made in that review to group the main subjects of research and to throw the salient points into clearer perspective than is possible in a large book containing such a wealth and variety of matter. This very abundance is likely to produce on the ordinary reader a somewhat bewildering effect, so that he cannot, if we may be allowed to use a hackneyed but useful phrase, see the forest for the trees.

In the preface Dr. Mott makes the interesting announcement that when the next number of the *Archives* appears the Maudsley Hospital and the Pathological Department, its staff and equipments at Denmark Hill, will be in active operation. We understand that but for the troubles in the building trade the institution would have been well on the way to completion by midsummer. It is hoped, however, that it will be finished early next year. The long deferred hope, therefore, of seeing a hospital for mental diseases that shall be wholly free from the social taint which the name of a lunatic asylum necessarily carries with it is at last about to be fulfilled.

It may not be out of place to recall that in December, 1907, Dr. Henry Maudsley put before

Mr. H. P. Harris, then Chairman of the London County Council, a scheme for the establishment of a fully equipped hospital for mental diseases in London. Towards the cost of carrying that scheme into effect Dr. Maudsley offered to contribute a sum of £30,000. In a letter to Mr. Harris dated February 14th, 1908, Dr. Maudsley said that, as a physician who had been engaged in the study and treatment of mental diseases for more than half a century, he had been deeply impressed with the necessity of a hospital whose main object should be the early treatment of cases of acute mental disorder, with the view so far as possible of obviating the necessity of sending them to the county asylums; the promotion of exact scientific research into the causes and pathology of insanity, with the hope that much may yet be done for its prevention and successful treatment; and the provision of an educational institution which should offer to medical students the opportunities of getting good clinical instruction in a class of diseases of which under existing conditions it is not easy for them to obtain a competent knowledge. This is, we think, all the more necessary since it is to the general practitioner that we must look for the recognition of danger signals when the cloud on the mind is as yet no bigger than a man's hand. The general practitioner is the first line of defence of society against the spread of insanity. We need not again labour the point which has been so often insisted upon—that if the problem of mental disorder which so closely concerns the welfare of the community is to be solved, it is by means of institutions which may serve as outposts between the mass of threatening disease to be dealt with and the lunatic asylum. Such an institution the new hospital, which is most appropriately called by the name of the man who has done so much towards its establishment, is intended to be. Cases of acute insanity, and those in the incipient stage, will there be promptly dealt with as other diseases are treated at ordinary hospitals. It is most important that there should be no misconception in the public mind as to the purpose which the new hospital is intended to serve. This is to cure cases when they are still in the curable stage and to enable persons suffering from temporary mental disorder to escape the brand inevitably placed on them by a lunacy certificate. It is, therefore, hoped that such persons, conscious as they generally are of some loss of mental balance, will apply voluntarily for treatment; and it is highly desirable that the hospital should not be looked upon as a half-way house to the asylum. There is every reason to hope that by means of the mental hospital a large proportion of cases now doomed to drift into hopeless insanity may be saved and restored to useful life.

The transference of the Claybury laboratory to London cannot fail to have the happiest results. Though excellently equipped for the purpose it was intended to serve, its remote situation necessarily hampered the work of research. Such a laboratory to fulfil its potentialities of usefulness should be in a central position and organically connected with a teaching hospital. That so much valuable work has been done at Claybury in spite of the disadvantages of its situation is an eloquent testimony to the energy of Dr. Mott and the helpers and students whom his reputation has gathered round him. An illustrated description of the laboratory appeared in the *BRITISH MEDICAL JOURNAL* of February 18th, 1899. Professor Virchow said that nothing he had seen during his visit to this country in the autumn of 1898 impressed him more than what he saw at Claybury. Professor

E. Meyer¹ spoke in the highest terms of its equipment and the work done there, but expressed regret that it was so far from London. With the satisfaction felt at the removal of the laboratory to a more convenient situation is mingled a feeling of regret that soon its place, so famous among neurologists and psychiatrists throughout the world, will know it no more. But this natural sentiment is quickly dissipated by the thought of the larger opportunities that will be afforded by the new laboratory at Denmark Hill. There will be better accommodation for research, and teaching will be possible on a larger scale than was possible at Claybury. We are now within sight of the promised land of a London school of neuro-psychiatry in which the vast material to be found in the largest city of the world will be put to full use in the advancement of knowledge of diseases of the nervous system. This will go far to wipe away the reproach that we, with all the resources at our command, are still so far behind Germany and the United States in the scientific study and treatment of mental diseases.

In order, however, that the Maudsley Hospital shall adequately discharge its educational function, it will be necessary, as suggested by its initiator in his original proposal, that it should become a recognized school of the University of London. As Dr. Maudsley pointed out, the establishment of such a hospital in vital touch with the general hospitals and with the University would do much to break down the unfortunate isolation of the study and treatment of insanity from general medical knowledge and research. In Germany psychiatry has been kept in touch with general medicine by the establishment of clinics in connexion with universities. Every university has a psychiatric clinic with pathological, chemical, and psychological laboratories. Special mention may be made of those of Berlin, Munich, Breslau, Greifswald, and Giessen. There is a consensus of opinion among psychiatric specialists that the mental hospital should be associated with a university or medical school. In the final report (1913) of the Royal Commission on University Education in London (p. 122), as to clinical instruction in special hospitals the opinion is expressed that the University ought to appoint a professor of mental diseases, and that there is a great opportunity of developing a department of psychiatry and mental diseases, not only for students but for graduates and for research. A statement submitted to the Commissioners by the London County Council is quoted in which it is said: "In addition to the advantage which it is expected will ensue to the patients who are treated there, it is hoped that the hospital will prove of great value in the dissemination of knowledge of mental diseases and in the provision of systematic instruction in methods of treatment. The proposal includes the provision of a department for pathological research; which it is suggested would be accomplished most economically by the removal of the staff and equipment of the Claybury Laboratory to the new institution. It is hoped that this institution, when in being, will be in close touch with the London University and the Medical Schools." The Commissioners think the suggestion most valuable, and that the University should endeavour to organize and develop in connexion with the new hospital at Denmark Hill a clinic of mental diseases. We hope, therefore, that nothing will now be allowed to stand in the way of the realization of the proposal, which has been

made possible by the munificence of Dr. Maudsley, one of the University's most distinguished sons.

THE RADIUM TREATMENT OF CANCER.

WHEN a malignant tumour, either by reason of its extent or on account of its inaccessible situation, is beyond the scope of surgery, the contemplation of the inevitable end and of the distressing conditions by which it is often attended causes the profession and the public alike to welcome any means that promise to delay or defeat "the blind Fury with the abhorred shears." And, as in the long run it is a characteristic of mankind to remember the strokes of good fortune and to let disappointments pass out of memory, so here one fortunate result may cause many failures to be forgotten. The sceptic—and the sceptic has his uses—looking back over various means that have been extolled from time to time for the treatment of inoperable cancer, will call to mind their vogue for longer or shorter periods, their apparent successes, and their final inglorious oblivion. Now that radium is in the ascendant, our sceptic will be apt to regard it with all the more coldness as the enthusiasm of its advocates increases. In every large centre of population in the civilized world radium is being either used or demanded for the treatment of diseases hitherto reckoned incurable. The hands of charitable institutions are being forced by the appeals for more available radium. The pressure may perhaps to some extent be relieved in this country by the policy pursued by the authorities of the London Radium Institute, which during last year supplied to the medical profession tubes and applicators equivalent to over 19 grams of radium bromide, while in the production of radium water the equivalent of 6 grams of radium bromide has been used. The profession, therefore, has had the use of 25 grams of radium, and the Institute's supply is not diminished. The plan of supplying emanation applicators was originated by the Institute, and there seems some reason to believe that this system will be the basis of the radium supply in the future. The purchase by each hospital of a few milligrams of radium is wasteful, and the experience of the Institute is even held to show that the emanation is more useful than the salt.

To attempt to stand between the enthusiast and the sceptic is to play a difficult and thankless part, but if ultimate good is to come and premature condemnation is to be prevented, it is necessary to scrutinize carefully the facts that are brought before us. "Cure" is not an expression that should be used until the lapse of sufficient time has enabled us to judge of the permanence of the results, and, as Mr. Sinclair White was careful to point out when commending the establishment of a radium institute to the public of Sheffield, practically all the reported cases of beneficial effects have been very recent, and the time has not yet come when it can be said that even the most promising cases are actual cures. The subsequent history of all cases ought to be scrupulously recorded, even though some proclaimed as successes have eventually to be acknowledged to have ended in failure. Radium in some cases causes a diminution or seeming disappearance of the cancerous growth with its attendant distress. That is all that can at present be said with certainty, but, as Mr. White also said, since radium is of this great value in mitigating the suffering of cancerous patients, it is a boon more valuable than anything hitherto discovered.

¹ *Archiv für Psychiatrie und Nervenkrankheiten*. Bd. 39, Heft iii. 1905.

That radium in many cases—perhaps in the great majority—produces no beneficial effect whatever is to be recognized, and that it may even on occasion accentuate the malignancy of a tumour is unfortunately true. The apparent, or actual, disappearance of a primary growth may not mean a decisive victory. Whether metastatic deposits disappear with the primary growth is a point on which conflicting views are held, but the weight of opinion is against such an occurrence, and the theories put forward to account for it rest on a very slender basis; it is, indeed, believed by some that recurrences and metastatic deposits sometimes progress at an increased rate after the application of radium has been followed by the seeming disappearance of the original growth. Two cases, seemingly identical, may respond in absolutely diverse ways to radium. We may, however, reasonably hope that as more is learnt of the action of radium on cells and as the technique is improved good results will more commonly and uniformly be obtained. Moreover, even those who take the least sanguine view of the frequency with which improvement occurs under treatment by radium and of the duration of such ameliorations recognize that even temporary relief of distressing symptoms in inoperable cancer is a success for which to be thankful and not a failure to be despised. Out of occasional and partial successes knowledge of how to obtain frequent complete successes may grow through wise observation and careful analysis of the conditions in which failure or success occurs.

To several other recent communications on radium there is added in this issue the second report of the Radium Institute of London; it should be read in conjunction with the more detailed first report, published in the *BRITISH MEDICAL JOURNAL* of January 25th, 1913. Mr. Hayward Pinch, the Medical Superintendent, has very wisely left vacant the column headed "cured" in the list of cancer cases, and good results seem generally to be grouped under "improved." It is, of course, a rather comprehensive term, and is not very informative as to the degree of amelioration obtained. It would have been of much practical interest had it been found possible to include in the second report particulars of the subsequent history of cases returned as improved or apparently cured in the first report of the Institute; and in passing we may observe that the number of cases of cancer of the uterus given in the table as having been improved seems hardly to warrant the statement that the good effects are "phenomena of almost daily occurrence."

An account of the histological changes occurring in tumours as the result of radium applications would have been a welcome addition to our knowledge. As things stand we do not know what happens in the process of diminution of tumours. The suggestions that ferments are stimulated to destroy the cancer cells and that there is a process of auto-immunization are pure hypotheses, unsupported by trustworthy investigations. That radium has selective action on cancer cells has not been established, although the striking clinical phenomena observed in some cases have been held to justify this opinion. Many other problems wait solution, and we may hope that by the extension of the London Radium Institute and by the establishment of similar institutes in other centres, accommodation will be found for research departments which may deal with these questions, and be the means of adding to the small body of investigators who, in this country, are attacking the problems of cancer.

JUBILEE OF THE EDINBURGH UNIVERSITY CLUB OF LONDON.

THE annual dinner of the Edinburgh University Club of London, at the Hotel Cecil, on May 13th, marked the fiftieth anniversary of the foundation of this club. It was therefore a jubilee dinner, and perhaps on this account was even more largely attended than usual. The chair was taken by Lord Balfour of Burleigh, who, in proposing a toast to the club, mentioned that its membership roll now included over 600 names, their bearers being spread all over the world. Among those present he was glad to see one original member—namely, Sir Dyce Duckworth; and two other old, if not original, members—namely, Dr. Robert Farquharson—for some years honorary secretary of the club—and Surgeon-General Don. Certain members in past times had to be thanked, he believed, for helping to consolidate the question of parliamentary representation of universities, and he hoped that the desire to abolish that representation, which was said to be cherished in certain quarters, would prove sterile. Little need had the universities of the three countries to feel shame in respect of the men they had sent to the British House of Commons. Of the original twelve rules of the club one alone had never, and would never be, changed. It laid down as the object of the club the promotion of the interests of the University of Edinburgh and the maintenance of good-fellowship among its graduates. That rule had been steadily observed, and amongst other things the club had spent something like £3,000 in founding prizes at the university; it was now proposed to celebrate the club's jubilee by subscribing £500 towards the Lister Memorial Institute in Edinburgh. In acknowledging the toast Sir Dyce Duckworth mentioned that the club had been called into existence at a meeting held in 1864 at the house of Dr. Edward Sieveking in Manchester Square. Most of its members belonged to the medical profession, and the mental habit of medical men was to see what was wrong, then to see what could be done, and then endeavour to do it; but the club was never a political club, and he hoped it would always live in a higher ether than that of politics. The toast to "The Guests," proposed by Sir Robert Blair, was acknowledged by Principal and Vice-Chancellor Sir William Turner, who, after speaking of the proposed Lister Memorial Institute at Edinburgh and of the man in whose honour it was to be built, said that it was hoped to make the memorial thoroughly representative of the philosophic study of medicine, based on the application of science to practice. In the past ten years the students of the university had increased from 2,880 to 3,352 and the number of graduates from 8,883 to 12,288. More important still, as showing that the university was bent on making its teaching more complete and cover a wider ground, was the increase in the number of teachers during the same period. In 1903 there were 112, in 1913 there were 222. The toast to "The Chairman" was proposed by Dr. George Ogilvie, who, after paying warm testimony to his varied abilities, said that what Lord Balfour of Burleigh had achieved was only to be expected of a man so fortunate as to be born in the ancient kingdom of Fife. If one engaged a Fife caddie he would be found more learned than a university professor, more musical than a Pachmann, possessed of more critical acumen than a Bernard Shaw, and with a thirst for knowledge that would surprise even Wee McGregor. Continuing in this strain, Dr. Ogilvie illustrated his theme by a number of Fife anecdotes, one of which related to an "auld wivie" who had a word to say on most things, from babies to burials. "Husbands aye mind me o' teeth. They are terrible difficult to get; when ye get them they are naething but a vexation; but when they are gone they leave a maist awfu' blank ahint them." Lord Balfour having suitably replied, the formal proceedings of the evening then terminated.

RADIO-ACTIVE WATERS AND SPA DEVELOPMENT.

THE discovery of a radio-active principle in its waters is now the signal for a spa to bestir itself, add to its bathing facilities, and erect an emanatorium as part of its establishment. The latest spa to announce developments of this description is Bad Gastein in Austria, where thermal waters are known to have issued from the granite mountains for many hundreds of years. Here as elsewhere a disposition is shown to accept the existence of radio-activity as an explanation of the past efficacy of the waters and as a stimulus to fresh enterprise. In a circular issued by the bath authority it is mentioned that the water is of practically constant value, and that Curie, Laborde, and others have placed it first for radio-activity among the thermal springs of the world. This latter claim, however, is hardly borne out by another Continental estimate we have seen (by Dr. Saubermann of Berlin), in which Bad Gastein is placed third from the point of view of radio-activity, the first being Joachimsthal in Bohemia, and the second the Silesian baths at Landeck in Prussia. The average activity of the water measured at the Grabenbaecker spring at Gastein is given by Saubermann as 155 Maché units per litre, and that of Landeck as 204 Maché units. The figures for Joachimsthal are: 600 units per litre at the bath tap, and, of course, still stronger at the actual source within the mines. Baden-Baden in the Black Forest, which comes fourth in the list, boasts an activity of from 80 to 120 Maché units. The design of the new buildings at Bad Gastein, which include an emanatorium and better provision for the vapour and other baths, is stated to be of such a nature as to add to the comfort of visitors, and to the efficiency of treatment along the lines of modern balneotherapeutic requirements. Care is taken to advertise the fact that no blatant note is struck by the new erections, the design being in harmony with the picturesqueness of the narrow valley of the Gasteiner Ache, and the execution in accordance with the conservative traditions of Salzburg art. Recent investigations, it is stated, have shown that the territory of the kingdom of Saxony is unusually rich in waters of high radio-activity and that the natural conditions for the therapeutic utilization of that agent exist in different parts of the country. Of the English spas, both Bath and Buxton possess radio-activity, and in the strength of their waters they compare not unfavourably with some of the best known radio-active springs on the Continent. Unfortunately the absence of a uniform standard makes an exact comparison difficult, but figures showing the amount of radium emanation in equilibrium in both the Bath and Buxton waters have been published.¹

EXPERIMENTS ON ANIMALS.

DR. WARRINGTON YORKE, Professor of Parasitology in the University of Liverpool and Director of the Runcorn Research Laboratories of the Liverpool School of Tropical Medicine, has had to defend himself against a charge of cruelty to an ass made against him in the local police court, and subsequently in the Divisional Court of Appeal, by an inspector of the Royal Society for the Prevention of Cruelty to Animals. It appears that Professor Yorke and Dr. Blacklock had been experimenting with antimony trioxide with a view to testing its therapeutic value in the treatment of experimental trypanosomiasis. The donkey had received an intramuscular injection in the gluteal region on June 20th, the object of the experiment being to ascertain the maximum dose of the drug. The injection was followed by necrosis of muscle; the ass was kept in a field used exclusively for animals the subjects of experiments by the staff of the Tropical School. On June 30th the animal became paralysed in its hind legs, and lay down in the field. On July 5th, when the experiment was completed, the

animal was destroyed painlessly by a Greener gun. Two days previously a police constable had demanded that it should be destroyed there and then, but Professor Yorke pointed out that it was an experimental animal, that he was licensed by the Home Office, and would not kill the animal until the result of the experiment was ascertained. On the same day an inspector of the Royal Society for the Prevention of Cruelty to Animals called at the laboratory and demanded to see the animal, a demand which was refused, Professor Yorke explaining that if he believed any irregularity was occurring his proper course was to communicate with the Home Office or with Sir James Russell, one of its inspectors. The justices before whom the case was first heard were of opinion that the animal had not suffered unnecessary pain and dismissed the information. The society appealed, and the court affirmed the decision of the justices, expressing the opinion that there was no question of law for the court to decide; it had no power to interfere with the justices' finding of fact. The counsel for the respondent, who had not been called upon to argue, said, after the delivery of judgement, that though the society did not approach the Home Office, the respondent had laid all the facts before the authorities, who had expressed themselves satisfied. In this connexion the nature of the precautions taken by the Home Office to ensure that licensees do not abuse the powers granted to them may be recalled. In the first place, those in this country who desire to perform experiments upon living animals must be licensed by the Home Office, and must hold special certificates for each class of experiment. The places in which the experiments are made are supervised by the Home Office inspectors, who visit the laboratories at short intervals without previous notice; the licensees are required to make exact returns of all the experiments performed by them under their licence and certificates at the end of each year, and also to furnish to the Home Office immediately upon publication of each paper a copy with a written explanation of the nature of the experiments described. In spite of these regulations any licensee, as this case shows, is liable to be called upon to defend himself against a charge of cruelty made by the police, an inspector of the Royal Society for the Prevention of Cruelty to Animals, or, indeed, any other person, in the police court, and the case may eventually be carried to the High Court. The Home Office affords no protection to those who are engaged in research against attack of this sort, and the expense involved, not to mention the odium which may be incurred by the publication of *ex parte* versions of what untrained persons may believe themselves to have observed, must weigh seriously with those who propose to engage in biological research in this country.

THE AFTER-HISTORY OF THE AVERAGE CONSUMPTIVE.

THE Department of Health of the City of New York has reported recently on the subsequent history of patients discharged from tuberculosis sanatoriums. An investigation carried on by the Council of Jewish Women, with very great precision and determination, has served to demonstrate once more the hopelessness of arriving at anything like positive evidence as to the after-conditions of a large number of poverty-stricken sufferers. Of a total of nearly 1,000 persons about whom inquiries were made, only a little more than half were traced. The condition of every patient had been duly recorded on leaving the sanatorium, and the progress of those who could be found was reported regularly. The collected figures showed that after five years there were about 20 per cent. in whom the disease could be reported as arrested, but of the majority it was impossible to tell whether they had or had not received material benefit from their stay in the sanatorium. The

¹BRITISH MEDICAL JOURNAL, March 16th, 1912.

different effects of indoor and outdoor occupations were very well marked, and pointed strongly in favour of the latter. The change from the one to the other, after the first convalescence, was advised, and in many instances adopted. A great deal of home visitation was undertaken, and the general account given as to the observance of hygienic rules was encouraging, but the deficiency of light and fresh air was everywhere manifest. The proportion of patients earning enough to be self-supporting did not exceed 36 per cent. Relapse into former errors of life was found to be common. The educational value of the sanatorium treatment was apt to melt away very quickly if no means were available to keep it up, and for the same dire reason the insufficient diet soon rendered the half-starved tissues a prey to the ever-present bacilli. The Council makes a strong appeal in favour of a universal system of home investigation before the patient enters the sanatorium rather than when he leaves it, in order that during his stay some effort may be made to render his dwelling-place less liable to reinfect him on his return to it. Co-operation between the curative and the preventive agencies is eminently desirable, and the public need for it is becoming daily more obvious. The numerous schemes at present under consideration by boards and councils throughout the country, all of them working to the same end, would gain a double value if a system could be adopted whereby the consumptive discharged from any public institution could be followed up in whatever part of the kingdom he might elect to make his home.

VACCINE THERAPY WITH LIVING BACTERIA.

WHILE the efficacy of the preventive inoculations for small-pox and rabies is undoubted, opinions differ greatly at the present time as to the curative value of tuberculin and of other forms of vaccine treatment. Vaccines made from laboratory stock strains do not appear to yield satisfactory results, and the majority of those who advocate vaccine therapy prefer to use an autogenous vaccine—that is to say, a vaccine made from the bacteria infecting the patient to be treated. But even this method does not yield uniformly good results, and, from a common-sense point of view, it would appear that if a bacterium is capable of exercising a curative action in the infected host, it should be altered as little as possible in the preparation of the vaccine. Modern researches on variation and mutation reveal an uncomfortable habit in bacteria of acquiring fresh characters when brought into new environments, and it is not strange to learn that if removed from the host, planted in some artificial medium, such as broth or agar-agar, grown in a rapid succession of generations for a period of two or three days and then emulsified, the property of acting on the tissues for the production of definite antibodies may differ from that of the original stock. Professor Besredka¹ advocates the sensitization of bacteria for vaccine therapy by bringing them into contact with the serum of the patient before injection. Experience has shown that living sensitized viruses are practically harmless to the infected host. In a series of 48 cases of enteric fever there was only one death, and the proportion of relapses was diminished to about one-half. The serum of the patients treated by sensitized vaccines was shown to possess distinct bactericidal properties in considerable dilution (up to 1 in 20,000), while it was very weak in patients not so treated (about 1 in 100). The agglutinating power was not affected, while other antibodies appeared in the serum at an earlier stage and were more plentiful than in ordinary cases. Broughton-Alcock introduced this method of using sensitized living vaccines in streptococcal, staphylococcal, and gonococcal infections, and obtained good results. Gordon also obtained excellent results at St. Bartholomew's Hospital. The sensitized

living virus produces less agglutinin than ordinary living virus or than killed virus. The bactericidal power of the serum is markedly raised in response to sensitized virus, less so with killed virus, and least with ordinary living virus. Lastly, the other antibodies appear earlier after injections of living sensitized virus, but disappear more rapidly than when the ordinary virus is used. These results suggest that vaccines prepared in a manner which approximates to the conditions obtaining in the infected organisms are more likely to cause a curative response than ordinary vaccines, and that they should be regarded as a distinct advance in vaccine therapy.

A COCAINOMANIAC MONKEY.

THE monkey, being an essentially imitative animal, naturally adopts the vices of his more highly developed kinsman, *Homo sapiens*. Thus apes have been exhibited who smoke and drink champagne. It would seem also that they may acquire the drug habit from the example of their superior relative. At a recent meeting of the Société Clinique de Médecine Mentale¹ Dr. Marcel Briand, one of the medical officers of the Saint Anne Asylum in Paris, presented a macacus monkey which had become a cocaine-maniac. Toby, as he is called, belongs to a lady who, herself a morphinomaniac, was often visited by a friend who was in the habit of snuffing cocaine before the monkey. Some months ago she gave him as a plaything a box which had contained cocaine. The ape smelt it and put it away with indifference. Since that day, however, whenever his mistress goes near him he feels in her pockets for a little round cardboard box of chestnut colour with a red border which he can pick out from several others. When he finds it, he opens it and plunges his nose in it with obvious delight, for it contains cocaine. He has often broken his chain to get at a drawer where he knows there is a supply of the drug; he even opens handbags in which he knows he will find a cocaine box. His mistress sought admission to the asylum for the cure of her drug habit, and she took her monkey with her. He was treated at the same time and the result was more successful than it usually is in the human patient. Sodium bicarbonate, which to an ape must look very like cocaine, was presented to him, and he rubbed his nose with it; then, with a grimace of displeasure, he tried to rub it off. After this first deception, if a box containing any powder of the same colour as cocaine were given him, he would open the lid and throw it away at once. It was clear that only cocaine had any charm for Toby. The intoxication which it caused began with a stage of excitement in which, unlike his ordinary self, he became quarrelsome and tried to bite those about him; after a further dose of the drug he became thirsty and tore out the hair from various parts of his body. Dr. Briand does not think that this was caused by the disorder of cutaneous sensibility which makes human slaves of the cocaine habit fancy that there are insects under their skin, but he gives no reason for this belief beyond the fact that Toby, who is kept very clean, has not the habit of scratching himself. His theory is that, beginning in mere imitation, the act became habitual in the ape, owing to the pleasure caused by the intoxication. Is not this the history of tobacco smoking in man? The difference in respect of drug taking is in favour of the ape, for, when he had had enough, he knew when to stop and would not be tempted further. In the matter of alcohol, for instance, man too often does not know when he has had enough. We think De Quincey's explanation holds good for all cases of alcoholic excess but those in which a man, like the negro of the story, deliberately "drinks for drunkie." He says that wine—and we suppose the same may be said of whisky—gives the drinker a sense of exhilaration and mental power that goes on increasing to a certain pitch, after which his faculties become gradually

¹ *Berl. klin. Woch.*, January 19th, 1914.

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dulled. It is the attempt to counteract this downward tendency and to regain the glow and exaltation of the first stage that leads a man to drink till the poison steals away his brains.

DESCENDANTS OF PETER CHAMBERLEN.

AN advertisement appeared in the *Times* several times lately, to the effect that "Any descendants of Doctor Peter Chamberlen, Royal Physician, of London (died 1683), would oblige by communicating with C., Field House, Minchinhampton, Glos." The name of Chamberlen is well known in connexion with the use of the midwifery forceps. The invention of the instrument, which was long kept a secret in the family—there were three Peters, two Hughes, to say nothing of a William, a Paul, and a John—belongs, according to Dr. J. H. Aveling,¹ to Peter Chamberlen the elder, a surgeon, son of William Chamberlen, a Huguenot, probably also a surgeon, who had to leave France on account of his religion. The Peter Chamberlen whose descendants are advertised for was the son of Peter, a younger brother of the elder Peter, and was born in London in 1601, educated at Cambridge and afterwards at Heidelberg and at Padua. At Padua he took the degree of medicine in 1619; he was incorporated M.D. at Oxford in 1620 and at Cambridge in 1621. His reputation as a practitioner extended to Russia, and the Czar begged Charles I to allow Chamberlen to enter his service, but the request was refused, perhaps because in the meantime Charles had appointed the doctor physician-extraordinary to himself. Chamberlen attempted to get the College of Physicians to recognize a corporation of midwives of which he should be governor, but a petition against the project was presented by "divers ancient midwives," in which it was stated that his scheme was "to bring about a project of his to have the sole licensing of them or approving of all such as shall hereafter be licensed out of an opinion of himself, and his own ability in the art of midwifery, implying a necessity of using him and no other in those cases and in all other occasions that shall happen to women with child." The opposition to his project moved Chamberlen to reply in a pamphlet entitled *A Voice Rhama: or the Crie of Women and Children*, in which he complains bitterly that he was accused of charging exorbitant fees. Disappointed in his attempt to improve the condition of midwives, he in 1649 obtained from Parliament a monopoly for the erection of baths and bath stoves, but the grant was opposed by the College of Physicians on the ground that "publike bathes" were "hurtfull to the Common-wealth." As a result of the controversy that arose out of this incident, Chamberlen was dismissed from the Fellowship of the College for repeated acts of contumacy. He next appeared as "England's Samaritan" with a scheme for "Powing oyle and wine into the wounds of the Nation. By making present Provision for the Souldier and the Poor by reconciling all Parties. By paying all Arrears to the Parliament Army. All Publique Debts and all the late Kings, Queenes, and Princes Debts due before this session" (1649). Peter Chamberlen should be with us at this hour; in his own day his ambitious finance does not seem to have been appreciated. During the whole of the Commonwealth he was involved in religious disputes in which he betrayed the spirit of a fanatic. At the Restoration he was appointed Physician in Ordinary to Charles II. In 1666 we find him patenting inventions for the propulsion of ships and carriages by wind; these, too, came to nothing. He next invented a method of phonetic writing. It is no wonder that a man of so restless a spirit should have been looked upon as eccentric; he replied vigorously to reports that he was mad, lost, and a Jew. Though his vindication of himself from the last of

these accusations rather suggests. Mr. Crummles's famous denial that he was a Prussian, Chamberlen seems to have been in earnest. He died in 1683 at Woodham Mortimer Hall, near Maldon in Essex, and was buried in the churchyard there, his tomb bearing the following inscription: "Here lyes ye body of Doctor Peter Chamberlen, who was born on the 8th of May, 1601, and dyed on the 22nd of December, 1683, being aged 82 years 7 months and 14 days. He had two wives, and by ye first Jane Middleton, had 11 sons and 2 daughters, and amongst them 45 grandchildren and 8 great-grandchildren (whereof were living at his death 3 sons viz. Hugh, Paul, and John and his 2 daughters and 20 grandchildren and 6 great-grandchildren). By ye second, Ann Harrison, had 3 sons and 2 daughters, whereof only Hope was living at his death, who hath erected this monument in memory of his father." The Jane Middleton here mentioned as Chamberlen's first wife was the eldest daughter of Sir Hugh Myddelton, the projector of the New River. Surely such a progeny has not vanished from the earth without leaving any descendant.

"THEY MANAGE THESE THINGS BETTER IN FRANCE."

It is not easy to keep in mind even the names of all the wonderful cures announced to the public in the advertising columns of daily, evening, and weekly newspapers, but probably many will remember the frequent appearance some years ago of voluminous advertisements by one Dr. Macaura, said to be an American, who claimed to be able to cure rheumatism, paralysis, and other afflictions for the treatment of which he had invented a vibrator, called pulsocon. "*Truth*" *Cautionary List* for 1913 states that he brought an action for libel against that paper, but discontinued it and paid the costs. It would appear that he transferred his energies to France, for, according to a Reuter's telegram from Paris, an American named Macaura, who has been conducting institutes both in England and on the Continent for the cure of rheumatism and other disease by means of a vibratory treatment, was, on May 14th, sentenced to three years' imprisonment and a fine of £120. Macaura, the correspondent states, was with others tried on charges of illegally practising medicine and of swindling in connexion with the sale of his vibratory apparatus. Nine of the others, who assisted Macaura in Paris or in the provinces, received sentences of imprisonment varying from two to twelve months and were fined sums varying between £4 and £20. Three received the benefit of the first offenders Act. The tenth prisoner was acquitted. The medical societies which were concerned in the case as interveners were awarded damages varying from £80 to £120. The court set aside the charge of illegally practising medicine and convicted the accused on the second charge of swindling. Macaura at one time, we believe, had his head quarters at Manchester. We commend the action of the French courts to the attention of the Home Secretary in this country.

PRESERVATION OF THE COLOUR OF SPECIMENS.

In a pathological museum to-day we see less and fewer of the once predominant spirit preparations, dead white, tallowy looking objects in bottles, with tissues bleached and rendered as though homogeneous by the action of alcohol. The loss of the natural colour is of little importance in dissections of anatomical "regions" where the vessels can be filled with coloured injected material, but uniform discoloration greatly lowers the value of pathological specimens. The Kaiserling method preserves the original colour, but without doubt it may be improved upon. Professor Sheridan Delépine has taken an active part in seeking for the best medium for the permanent

¹ *The Chamberlens and the Midwifery Forceps*. London: J. and A. Churchill. 1882.

preservation of the colour of diseased organs and tumours. Visitors to the Museum of the International Congress last summer will remember Professor Delépine's collection of photographs of specimens prepared by this method, illustrating some of the types of tuberculous lesions observed in man, cattle, swine, horses, and birds. They were taken from specimens prepared by his method, of which he has given a full description in a recent article.¹ He finds that tissues are best fixed and hardened in a 4 to 8 solution of formaldehyde, the specimen being then transferred to alcohol and later on to a saturated watery solution of arsenious acid mixed with glycerine. Specimens can be preserved in jars holding this fluid, but Dr. Delépine finds it preferable to transfer them to arsenious acid glycerine jelly, which allows of the specimens being mounted under glass plates, and has a beneficial effect on the preservation of colour. Even when half-bleached by spirit, specimens may be made to regain at least differential colouring when fresh sections are treated after this method, which after comparative experiments has proved superior to Kaiserling's. Dr. Delépine's preparations have stood the test of time. The earliest date from 1887, and it is found that no marked shrinkage of the tissues or reduction in bulk of the mounting mediums occurs. For permanent mounting of preparations, the fixing agents which Dr. Delépine finds best are a 2 per cent. watery solution of potassium bichromate and a 4 to 8 per cent. watery solution of formaldehyde. If the chrome salt be not entirely removed by long washing after hardening, a green discoloration is gradually developed, but this defect is avoided when very thin slices of organs are prepared and treated, and Dr. Delépine has kept sections for twenty-five years which show no such discoloration; but formalin is better for whole organs or sections which for any reason are unavoidably thick. By a special process Dr. Delépine has attained great success in mounting sections, or parts of organs, not over $\frac{1}{4}$ in. in thickness, in arsenious acid glycerine jelly between two glass plates. The great recommendation of his methods is that they have stood the test of time. They may be adopted with confidence by all curators and pathologists who wish to make specimens serve both for educational purposes and as accurate scientific records.

HISTORICAL MEDICAL MUSEUM.

As already announced in the *BRITISH MEDICAL JOURNAL*, the Historical Medical Museum, founded by Mr. Henry S. Wellcome, and now housed at 54A, Wigmore Street, W., is to be a permanent institution. It is to be opened as such on Thursday, May 28th, without any ceremony. An account of the formal opening in connexion with the International Congress of Medicine held last year in London appeared in the *JOURNAL* of June 28th, 1913. It excited great interest among members of the Congress, and was visited by large numbers of persons while it remained open throughout the autumn. The collection has since been considerably enlarged, and shows in a concrete fashion the evolution of the healing art from witch medicine and primaeval surgery to the dawn of the Listerian era. Among the most interesting additions are a case of chemical reagents and apparatus used by Lister for experiments in his own house. There is a model of Liebig's laboratory, besides a number of relics associated with men who have cut new paths through the tangled forest of unknown truth. The collection of ancient Greek surgical instruments recently found near the site of Kolophon in Ionia, and probably dating from the first or second century of the Christian era, is on view for a time before it is taken to its intended destination in the Johns Hopkins University. Models of the instruments, which with two exceptions are of bronze,

are being made; so beautiful and artistic is the workmanship, however, that we understand the imitation taxes the skill of the modern artificer. The whole museum has been rearranged and its component parts conveniently classified by Mr. C. J. S. Thompson, the curator; this makes it easier for the visitor to find what he wants and to study any particular department in which he may be specially interested. The illustrations and preparations showing the life-history of insect and other parasites which convey various tropical diseases and the manner in which they act within the human body, which was so striking and instructive a feature of the museum last year, has been removed to the Bureau of Medical Research founded by Mr. Wellcome, and now established in Henrietta Street, Cavendish Square. The museum will be open daily from 10 a.m. to 6 p.m., except on Saturdays, when it will close at 1 p.m. Members of the medical and kindred professions will be admitted on presentation of their visiting cards. Tickets of admission may also be obtained by others interested in the subject on application to the curator with an introduction from a registered medical practitioner. Ladies will be admitted only if accompanied by a registered medical practitioner.

SLEEPING SICKNESS.

THE report of the Interdepartmental Committee on Sleeping Sickness was issued on May 20th. The general effect of the conclusions of the Committee is to emphasize the need for further knowledge of the disease, its causes and remedies to be obtained by experiment and research. It deprecates hasty and imperfectly considered action of a drastic character, such as an attempt to effect a general destruction of wild animals, but recommends that until direct means of checking the fly have been discovered, its food supply and the chances of infection should be lessened in the vicinity of centres of population and trade routes by the removal of wild animals, and that for this purpose freedom should be granted both to settlers and natives to hunt and destroy the animals within prescribed areas and subject to prescribed conditions.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

In a paragraph published last week it was mentioned that the library of the British Medical Association did not possess the *Transactions* of the International Congress of Medicine in London last year, the publication of which has, we understand, now been completed. The appeal then made to members to supply the deficiency has already met with response, for the general volume, and the two parts (Section XIII, 1 and 2) containing the proceedings of the Section of Dermatology have been received from a member resident in London. Gratitude for this gift takes the usual form of a lively expectation of favours to come from other members who were members of other Sections. By way of encouraging these unknown others it may be added that a member who gives the volumes to the Library of the Association does not irrevocably cut himself off from the opportunity of consulting them in time of need. Any volume in the file can be consulted in the Library, which is on the first floor of the house of the Association, 429, Strand, or borrowed on application to the Librarian.

THE South African Civil Surgeons' dinner (now held triennially) will take place on Wednesday, July 8th, at the Criterion Restaurant at 7.45 p.m. Dr. Howard Tooth will take the chair. Tickets, price 10s. 6d., should be paid for at the dinner. It is hoped that those who wish to attend will communicate as soon as possible with Dr. F. E. Fremantle, County Medical Office, Hertford; or Mr. C. Gordon Watson, 82, Harley Street, W.

¹*Journ. of Path. and Bact.*, vol. xviii, 1914.