THE EDUCATION OF MEDICAL STUDENTS.

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Changed Conditions of Medical Practice.—The Rise in the Standard of General Education.—A Scheme of Education for Boys.—Preliminary Medical Education.—A Modified Apprenticeship System.—The Utilisation of Workhouse Infirmaries, County Hospitals, etc.

MR. C. G. WHEELHOUSE, F.R.C.S., at the opening meeting of the York Medical Society on Thursday, October 8th, delivered an address, from which we extract the following passages:—

Tempora mutantur nos et mutamur in illis; and I want to ask your consideration of the changes that have taken place, and of what are the real necessities to which they have given rise. Would the education of thirty or forty years ago meet the requirements of to-day? Undoubtedly they would not; for, not only are the whole conditions under which medical practice is carried on materially changed, but the very nature and character of disease itself—the material to be dealt with—has also undergone a marked and decided change.

Consider for a moment the entire subject of “public medicine”—undreamed of then, and now taking rank amongst the most cultivated sciences of the day. And so, in like manner and on all sides, have other branches of knowledge been springing up, and necessity—not inclination merely—has compelled corresponding changes in our methods of education. But is medical education the only field in which this spirit of necessary change is to be seen? What is the condition of general education now, as compared with what it was then? Could every child in the kingdom at that time read, and write, and cypher? to say nothing of more advanced branches of knowledge which are common property to-day.

No. Again I say the times are changed and we are changed with them, and new pathways must not only be discovered, but must be beaten into well-worn roads. Concurrently, then, with the rise of these new necessities our modes of education must vary with the times.

This brings me to the question, Why was the old system of apprenticeship swept wholly away? Was it so indefensibly bad that no part of it was worth retention? No doubt five years was a long time to give to a purely elementary part of a special education, but, was it all lost time? Much of it, no doubt, was spent in acquiring information which of late years has become less necessary.

Thus, a thorough knowledge of “compounding” was acquired, and a man learned to know not only exactly what he was prescribing, and had an intimate knowledge of every ingredient in every prescription; how it would combine with others, or would refuse to do so; what its effect should be, and in what doses it should be used; moreover, as practice was conducted in former years, all this was absolutely essential, for, not only in all country districts all over the kingdom, but in the large towns—aye, even cathedral cities—every medical man was compelled to be his own dispenser. It need not be so now. The chemist was not the helper to him then that he is now, nor was the preparation of medicines then what it is now.

So the art of dispensing, so necessary then, is less so now; at any rate it is reduced to so much smaller proportions that it can be efficiently learned in hospital classes, and to spend the great length of time upon it that was formerly devoted to it could be accounted nothing but waste.

Then comes the very pertinent question, How is the necessary faculty of observation so well learned during the apprenticeship of ancient times to be secured now? Can it be obtained in the wards of our hospitals? Is time enough allowed for it? Is material provided for it? To what general hospital is the man to go who desires to get a sound knowledge and practical experience of infantile diseases? Where is he to seek for that information in the study of zymotic and epidemic diseases which will give him confidence in his fitness to undertake their management? Where can he see those multitudinous ailments which, while they suffice to render life very miserable and hard to bear, are not admis-

sible into hospitals, but which yet form the daily staple of the work of the general practitioner? Where, in the general hospital, can he see those troubles of old age which often make the declining years of life so heavy to bear, and which, even though they be not curable, are nevertheless largely capable of alleviation, when thoroughly understood and appreciated? Are these questions unanswerable?

Let us take them seriatim. First, how is the faculty of observation to be aroused, educated, and developed? Is it not by seeing, comparing, and following to their logical results many facts, many circumstances, many conditions whether of like or of unlike character? And is not this exactly the mental condition that ought to be the outcome of a sound preliminary education?

The first claim that I make, then, is for a good sound preliminary education, and to obtain this in the present age is much more easy than it was in the olden time.

The student of any profession, whether my own or another, should first be placed in a position to bring to its study a mind thoroughly prepared, by well-directed previous education, to enable him not only to collect his facts concerning it, but to reason logically upon them, and to clothe his ideas in language capable of placing his thoughts in their clearest and most effective light.

And this brings me to the consideration of what preliminary education ought to consist, and of what time should be devoted to its preparation for any of the various walks in life which he may desire to follow.

For any profession it is essential that a thorough foundation should be laid; for all alike certain preliminary studies are absolutely essential, and there need be no difficulty as to preliminary lines.

Reading, writing, arithmetic, English history, English literature, geography, training of the imagination, training of the powers of observation, training of the devotional faculty, some study of the history and of the languages both of past and of present times, with some elementary science training, are all alike absolutely necessary for all; and for all these I would humbly maintain that in the first sixteen or seventeen years of life abundant time may be found, and opportunity as readily as time provided, that all be done regularly and with system.

But having stated my belief that the days of boyhood are sufficient for such preliminary education as I have described, I may fairly be called upon to give some sketch of how I would apportion it, and in this I am fortunate in having obtained the valuable assistance of one whose whole life has been devoted to the training of boys and young men. I will give the schedule of time appropriated as he has prepared it for use.

He divides it into three periods, and does not carry it beyond the age of 15. During the first period which covers the age of from 3 to 9 years he proposes to devote from half an hour to two hours a day to lessons and instruction conducted by mother, father, and, possibly, in the latter part of the time by tutor, governess, or appropriate teacher.

FIRST PERIOD.

1. Reading and Writing.
2. Divinity, or training of the religious faculty—(a) By the Gospel story. (b) By a little Old Testament history.
3. Arithmetic—Four first rules.
4. English history—In its simplest form, no dates, just the succession of Sovereigns and the striking occurrences of each reign.
5. English literature—Learning by heart a few familiar ballads, such as “The Burial of Sir John Moore,” and scraps of Macaulay, Scott, Shakespeare, etc.
6. Geography—Familiarity with the map of the World and of England, for which purpose the puzzle maps of children are invaluable.
7. A beginning of either music or drawing or both.
8. Training of the imagination—Fairy tales, old nursery stories, and such like.
9. Training in observation—Collecting and arranging almost anything, stamps, crests, coins, insects, eggs, flowers.
10. Elementary astronomy and laws of electricity—Combine with this 9, and say a few facts (not figures) about the stars and electricity.

SECOND PERIOD.

- Age from 9 to 11 (two years)—Four or five hours a day (30 in a week).
1. Geography (as fully as possible), 4 hours per week.
 2. English history and a little general history, 4 hours per week.
 3. Arithmetic to vulgar fractions and decimals, 4 hours per week.
 4. Latin, accidence and grammar, 4 hours per week (strictly regular and with easy translations).
 5. English grammar and composition, 3 hours per week (combined a good deal with above).
 6. English literature, 2 hours per week (as in last period).

7. Divinity, 2 hours per week.
8. Music or drawing, 3 hours per week.
9. French, 4 hours per week.

THIRD PERIOD.

Age 11 to 15. Larger school. Forty hours per week.

1. French, 8 hours per week.
2. German, 8 hours per week.
3. Latin, 8 hours per week.
4. Mathematics, 6 hours per week—Decimals, interest, etc., and algebra, a beginning, first book of Euclid.
5. Elementary science, 6 hours per week—Principles of electricity, light, heat, mechanics, elements of inorganic chemistry.
6. English literature or divinity, 3 hours per week.
7. Shorthand writing, 1 hour per week.

This scheme is drawn up for an average boy. A few could do more; many, doubtless, could not do so much; but most could do three-quarters of the whole. The later stages of the course are somewhat modified with a view to the adoption of the medical or some scientific profession.

The importance of the first period can hardly be over-rated. The boys who get on best and get real benefit from school are those whose mothers and fathers have taught them in person and have not left them too early to nurses and governesses.

To send a boy of 7 to school who can hardly read or write, and who knows nothing of geography, history, or poetry, or even of the life of Christ, as not infrequently occurs, is simply cruel. Such a boy has very little chance of doing well at school, and will remain half-educated all his days.

In the second period individual attention is most valuable. It can hardly be given afterwards in the larger school. In this period the teaching of method in working rather than the acquisition of facts should be aimed at, except perhaps in geography.

In the third period there should be plenty of time to make Latin not only educational but instructive. Six hours a week would probably suffice in many cases. "Modern side" Latin should be taught rather differently from "classical side."

Excellent as composition work is for training in accuracy, comparison, and analysis, I believe enough of these can be learned by properly-taught translation lessons.

The simplicity of Latin, its fixity, its freedom from controversial points, the enormous help it gives to the understanding of English grammar and English literature, render it infinitely superior to French or German as an educational instrument.

If studied as I would have it, it would also give that training of the imagination in which science is only partially successful, and that training of the emotions which science does not give at all. In the latter point it is no doubt inferior to Greek; but I do not think that the average boy would by the age of 15 have advanced far enough in Greek to have appreciably realised this from what he had learned. It is a benefit which in the case of Greek would be principally gained between 16 and 18.

I give this schedule for what it is worth, and I give it, moreover, with full consciousness and assurance that neither it nor any other general plan can be adapted to all boys alike. Such as it is, it may be regarded as a kind of standard to be aimed at in the main, but of sufficient elasticity to admit of great personal modification.

I carefully note his observation on the subject of Latin, because the advisability of giving up this as a compulsory subject in the preliminary examination required for medical students is in the air, and has been seriously discussed of late.¹

We have not only varying intellectual powers to consider, but varying conditions of constitutional and physical strength also. What is play to one boy is heavy labour to another; and, even to the same boy, the aptitude for study is not always the same.

To my mind there is still weight in the old argument that education should be such as to make, at any rate, as much of a gentleman as you can of the learner, and that the more you lower it towards the merely commercial standard the less will its elevating influences be felt, and the higher the standard at which you aim, the loftier will be the aspirations you will excite.

As far as our own profession is concerned the more we can do this the less shall we hear of many things that tend to drag it through the mire, such as sixpenny dispensaries, advertisements, and such other indecent assaults upon the honourable practice of the profession as are constantly brought to the notice of the General Medical Council, but with which it has no legal power to deal.

Then comes in the subject of "special" education, and from 17 to 21 or 22 a youth should be engaged in the especial

study of those subjects to which he is, henceforward, intending to devote his life. Given then a boy of 17 thus fairly educated, who chooses the medical profession, let us see what further provision is then made for his special training. He must first of all now pass a preliminary examination, and thereby give evidence that, so far as general education is concerned he has received such mental culture and training as will enable him to study with advantage the various novel subjects he will be called upon to undertake. Some may be regarded as the continuation only of subjects already commenced at school, such as "physics," "chemistry," "biology," and so forth. To these, according to the curriculum laid down by the General Medical Council, he must devote the first year of his new life, and, in every well equipped medical school, he will find the necessary materials ready to his hands, and professors of each subject also ready to receive and guide him.

Then there will probably arise before his mind the question of the modified apprenticeship or pupilage which is now recommended in place of the more extended system of former years, and he will have to debate seriously the question of when and where he will take up this part of his education. The Medical Council has, as I think wisely, for the present at any rate, left this an open question. So many and so various are the opinions held concerning it, that it has been impossible to reconcile them.

This in former times was invariably the first step; it is not necessarily so now; and as the object to be attained now is somewhat different to what it was in former times, it has been thought wise to leave it open to each man to take it at such time as he may think best suited to help him in his career. By some it is still believed that it should be the first step of all, and that, while the mind is young and plastic, and is eager for the acquisition of personal knowledge, is the best time for the drudgery involved in it to be undertaken. By some, on the other hand, it is thought that the student ought certainly to possess some elementary professional knowledge before he turns his attention to practice in any way, and that the best time to take pupilage is at the middle of the curriculum, before he attempts to grapple with the more advanced study of diseases and their treatment; and there are yet others who think it best deferred till the very end, when, in theory, he knows enough to make him a safe practitioner.

To the last I consider the objections to be insuperable; in the middle course I see so many difficulties that I can never recommend it; whilst to the former I see none. And if I had a son of whom I was hoping to make either a physician or a surgeon, the first thing I should think it necessary for him to acquire would be to know things when he saw them, and to give him familiarity with the materials upon which he would hereafter be called upon to work. I should not care for his knowing how to treat them, or very much detail concerning them; all that, I should know, would come afterwards in due course, and would be thoroughly instilled in him: but I should very earnestly desire that he should have the opportunity to learn how to recognise the more common forms of disease; that he should become familiar with them at sight, and be already able to differentiate them.

As things are now, I have no hesitation in saying that hundreds of men are turned loose into the profession who, though they can tell an examiner glibly enough the number of days necessary for the incubation of varicella, variola, rubeola, or scarlatina, and all the theoretical details concerning the history, course, development, complications, and *sequela* of these various diseases, are not familiar with the diseases themselves when they see them, and are liable most disastrously to confound them when in practice they are called upon to treat them.

But, in connection with this part of the subject, a very pertinent question is often asked, namely, Where can a pupil obtain this kind of knowledge? and what opportunity has a practitioner to show him these things? With some practitioners, no doubt, it would be very difficult; but there are many in whose practices it could very easily be done, and independently of private practitioners altogether. I maintain that there are public institutions in which all these things could be seen and magnificently taught, if only the wealth of material which annually passes through them were fairly utilised instead of being, as it is, entirely thrown away.

¹ Dr. Wade, in his Presidential Address to the members of the British Medical Association at Birmingham last year, advocated this exclusion, not only on the ground that during school life it could only be very inefficiently studied, but on the broad ground that it was unnecessary, and on the assumption that its place could be better taken by other languages, notably French and German, as intellectual training with equal present, and much more permanent advantage to the learner. In this I do not agree with my friend Dr. Wade, for greatly as I value the acquisition of modern languages, I do not think that they can efficiently take the place of either Latin or Greek, and that, if they are to be learned at all, it can only—beyond the mere accident and grammar—be by intercourse with those who speak these languages as living tongues.

When I was at Birmingham last year, at the meeting of the British Medical Association, I was most kindly shown by Mr. Jordan Lloyd through the beautiful workhouse infirmary over which he so efficiently presides, and I there saw in large numbers cases of all kinds of disease that are never seen in general hospitals. I saw fevers, measles, and scarlatina in all stages, chicken-pox, whooping-cough, the ailments and diseases of early infancy, of advanced old age of almost every kind, and Mr. Lloyd informs me that during the past year no fewer than 5,117 cases were received for treatment, exclusive of 140 lying-in cases and of probably 200 or 300 "lock" ones; and to see all this not a single pupil is admitted! In Leeds in like manner a similar magnificent opportunity is equally wasted. Some 30,000 to 40,000 cases are every year treated by the staff of the Public Dispensary, many of them at their own homes, and the workhouse infirmary is equally prolific in its way; and so with other places; and if only our county hospitals, workhouse infirmaries, and public dispensaries were "recognised" and utilised, as they might be, as fields of preliminary study, everything that is needed for efficient medical education could be abundantly provided.

When, then, my son, if I had one, had passed his "preliminary," that is, his educational examination, if it were in my power I would place him for a year or two with some gentleman who had charge of some such institution as one of these, and give him, as I think, the best foundation possible. Here he could not be looked upon in any other light than as a pupil; no charge of unqualified practice could possibly be raised against him; he would see whether the life of a medical man was to his taste or not, and if he found that it was not it would not be too late to change. Then he should pass to the medical school proper, and with the learning he would there acquire, and with the advantages of higher medicine and surgery that would there be placed at his disposal, it would be wonderful if in three or four years more he was not qualified to act, in the highest and noblest sense, as a thoroughly educated physician or surgeon, an accomplished and a safe practitioner.

PROFESSOR KOCH'S FURTHER COMMUNICATION ON A REMEDY FOR TUBERCULOSIS.

[Abstract.]

As the result of further attempts to isolate the active principle of tuberculin, Koch¹ finds that it is not either an alkaloid or a ptomaine, but is more nearly allied to the albuminoids. It is very difficult to isolate it in a pure condition as it readily undergoes chemical change. At each step of his experiments he has tested the action of the substances he obtained on animal bodies in order to determine whether the active substances were still present, and, if they were present, to determine whether he had obtained a complete or only a partial separation. Having already found that healthy guinea-pigs may be injected with large quantities of tuberculin without showing evidence of reaction, these animals were useless for the present purpose. On the other hand, as tuberculous guinea-pigs react to comparatively small doses of tuberculin, although not so small as in the human subject—the rise of temperature and local symptoms which make their appearance being in themselves sufficiently pronounced in guinea-pigs to enable one to determine the reaction with a single injection, the only satisfactory method appeared to be to give a lethal dose of the tuberculin, or of substances derived from such a lethal dose to such animals.

In guinea-pigs, which are highly tuberculous, namely, eight to ten weeks after inoculation, 0.01 g. of tuberculin is sufficient to kill the animal; where the disease is less advanced—four or five weeks after injection—0.2 g. or 0.3 g. may be necessary, 0.5 g. killing with certainty. He therefore used 0.5 g. of tuberculin, or the substances derived from that quantity, in order to determine whether the active principle was present or not; if the whole of it was present the animal would die; if not, it would remain alive. Out of several hundred cases this method was not found to fail in a single instance. The changes are so characteristic that there is no possibility of a mistake being made. The animal always dies in from six

to thirty hours, according to the degree of tuberculosis, and if death occurs earlier or later than this it is probably not due to the tuberculin, and as a matter of fact there is generally evidence of some other cause of death, such as pneumonia, malignant oedema, or other infective disease. The changes found at the seat of inoculation after death are a more or less localised injected area of subcutaneous tissue, which is reddened, often dark, almost violet in colour; the neighbouring lymphatic glands are congested; the spleen and liver in addition to the tubercle on the surface have numerous ecchymotic looking points or spots the size of a hempseed, very similar in appearance to those met with in other infective diseases: these, however, are not extravasations. The redness is due to the enormous distension of the capillaries in the immediate neighbourhood of the tuberculous masses. These capillaries are so close together, and are so stuffed with red blood corpuscles that the blood stream has come to a standstill. Rupture of the capillaries and extravasation are exceedingly rare. Similar conditions are present in the lungs, but they are not nearly so distinctly marked; there is diffuse redness of the mucous membrane of the small intestine.

The most characteristic feature, however, is the presence of hæmorrhagic patches on the surface of the liver; this is seen best in guinea-pigs that have suffered from tuberculosis for four or five weeks before inoculation. Here the liver is crowded with numerous grey nodules, which have not yet developed the yellow spots and brown marbled appearance which supervene as caseation occurs. Once seen this appearance may always be recognised as due to the action of tuberculin.

The first attempts to separate the active principle were made with alcohol, and on mixing tuberculin with five volumes of absolute alcohol there was thrown down a brown resinous mass which became almost adherent to the bottom of the vessel. On testing this precipitate and the supernatant clear fluid, the tuberculin was found in equal quantities in both, so that this reagent alone was not sufficient to isolate the active substance. The next method tried was to drop tuberculin slowly into from twenty to twenty-five times its bulk of absolute alcohol, shaking vigorously the while. A finely granular, almost white deposit is then thrown down, which, after repeated washing with absolute alcohol and drying *in vacuo* over sulphuric acid, remains as a white spongy mass, which is easily pulverised. If dried in a water bath it coagulates and becomes brownish. Tuberculin treated with absolute alcohol gives about 10 per cent. of dry powder; even then the active substance is not in a pure condition, but contains those extractives that are insoluble in absolute alcohol. Moreover, absolute alcohol does not precipitate the whole of the active substance: for if the filtered alcohol is evaporated, there remains a yellowish clear fluid which consists of glycerine and substances soluble in it, and, although 0.5 c.c. of this fluid will not kill an animal, 1 to 1.5 c.c. proves fatal.

Proskauer and Brieger, at Koch's request, tried nearly all the available methods of separating the active principle, using ammonium sulphate, magnesium sulphate, potassium carbonate, baryta, phosphomolybdic acid, phosphotungstic acid, acetate of iron, acetate of lead, tannin, and animal charcoal—in all cases without success. The active material was separated in a very impure condition, or it could not be separated in an active form from the precipitating reagent; for example, with tannin all the active material was precipitated from the tuberculin, and the deposit could be again dissolved by the addition of carbonate of soda, but it was found impossible to separate the active principle from the tannin.

It then occurred to Koch to mix alcohol with tuberculin in a much smaller proportion than in the earlier experiments—10 parts of tuberculin to 15 of absolute alcohol—the mixture being stirred, and allowed to stand for twenty-four hours. When this was done a white flaky precipitate was thrown down from a dark brown fluid. This fluid was carefully poured off, and 60 per cent. alcohol added, the mixture being stirred and then allowed to settle. This was repeated three or four times until the supernatant alcohol remained almost clear; the precipitate was again washed three or four times with absolute alcohol, the whole was filtered, and the filtrate dried in an exsiccator until it appeared as a snowy white mass, which after being dried at 100° C. lost from 7 to 9 per cent. of water and appeared as a light grey powder. Smaller quantities of the deposit may be freed from alcohol by

¹ Deutsche med. Wochenschrift, October 22nd, 1891.

evaporation over the water bath without the colour being altered very much, as in the case of the impure deposit obtained by precipitation by absolute alcohol.

The deposit obtained by precipitation by dilute alcohol is so much more active and constant than all the substances obtained by the various other methods that it may be looked upon as almost pure, 10 milligrammes producing as much effect as 5 decigrammes of tuberculin or as 50 milligrammes of the impure substance obtained by the addition of 100 per cent. alcohol; 5 milligrammes, and even 2 milligrammes, may give the distinct tuberculin reaction. The quantity obtained is about 1 per cent. of the tuberculin.²

It was found that scarcely one-half of the active substance could be abstracted from the tuberculin by precipitation by 60 per cent. alcohol, the remainder being left in the liquid, which, when made up to the original volume by the addition of water, contained a quantity so great that 0.75 to 1.0 gramme would ensure the death of the tuberculous animal. The 60 per cent. alcohol precipitate may, therefore, for the present be looked upon as a purified tuberculin having the following characters: It is pretty soluble, especially when rubbed up in a mortar with water; this solution gradually loses its specific activity, as it is perceptibly weaker even in one or two weeks. Evaporation, especially as the fluid becomes concentrated, has a similar effect, and the sample of the deposit which has been repeatedly evaporated over the water bath and then dissolved finally loses its activity altogether. It also becomes partially insoluble when it is dried, especially at a high temperature.

At first it was supposed that the foreign insoluble constituents of tuberculin were mixed with substances which could be separated by moderate dry heat or by careful evaporation; these, however, give the physiological reactions of tuberculin, from which it was assumed that they were albuminoid substances which carried the tuberculin down with them on precipitation. Since, however, neither the addition of other albuminoids to tuberculin solutions, which are afterwards coagulated, nor precipitates obtained by other methods, acted in the same way, this explanation of the difficulty could not be accepted, and it seems probable that this insoluble matter is a modification of tuberculin which has been rendered insoluble in water.

If the purified tuberculin is not very carefully prepared and preserved it always retains a small quantity of this insoluble substance, and does not give a clear solution, but the addition of a small quantity of sodium carbonate sufficient to give a distinctly alkaline reaction as a rule brings everything into solution.

On the other hand, solutions of pure tuberculin in 50 per cent. glycerine are very stable, a solution kept for four months retaining its original activity, and if the solutions have even a small proportion of glycerine added, they may be repeatedly evaporated and dissolved without the activity being impaired, whilst if a large quantity of glycerine be present they may be exposed to a comparatively high temperature (130° or even 160° C.) without undergoing alteration;³ 1 or 2 c.c. of a concentrated solution of most carefully purified tuberculin poured into absolute alcohol does not immediately give a deposit, but merely slight opalescence, an opalescence which may continue for weeks without the formation of a definite deposit, so that purified tuberculin is not completely insoluble in alcohol: 80 per cent. alcohol takes up a considerable quantity, 60 per cent. a larger quantity. This is easily explained by the fact that the constituents of the impure fluids were added to the series of tuberculin-holding alcohols. The addition of glycerine keeps everything in solution; the extractives form a precipitate in such a solution, but after this has settled the alcohol still has an opalescent appearance. If salts—especially chloride of sodium—are added, the tuberculin collects in flakes and is completely precipitated, a

single drop of chloride of sodium being sufficient to bring about complete precipitation of the tuberculin from several hundred cubic centimetres of alcohol.

This behaviour of diluted alcohol must be borne in mind in using it to obtain the pure substance. As soon as the mineral salts which favour the precipitation of tuberculin are removed by repeated washing with 60 per cent. alcohol all further washing with this fluid carries down some opalescence, that is, it begins to dissolve the tuberculin, which may be thus gradually diminished in bulk, and as soon as this opalescence commences the alcohol must be cleared by the addition of sodium chloride, after which the washing is to be repeated. This purified tuberculin gives all the albuminoid reactions—the biuret reaction, Adamkiewicz's reaction (glacial acetic acid and concentrated sulphuric acid); Millon's reagent gives a white precipitate, which, on being heated, becomes reddish; and so on.

Phosphotungstic acid, acetate of iron, ammonium sulphate, all precipitate tuberculin completely from its solution; acetate of lead causes marked cloudiness but no definite precipitation, acetic acid at first causes cloudiness of a watery solution of the purified tuberculin and then a slight precipitate, which after a time again disappears. The substance thrown down by acetic acid, which may have a slighter or a more marked tuberculin action, resembles the form that is insoluble in water, and is, perhaps, identical with it. A watery solution of picric acid throws down a flaky precipitate, which is dissolved when warmed, but reprecipitated in the cold. Dilute or even more concentrated solutions of hydrochloric and sulphuric acid do not throw down any precipitate. Nitric acid, on the other hand, gives a precipitate which, on being allowed to stand, becomes denser, and on heating gives a yellow solution, which, on the addition of sodium hydrate, turns brownish red.

The percentage of ash, as obtained by Brieger and Proskauer, varied from 16.65 to 20.46 per cent. The ash consisted almost entirely of phosphate of potassium and magnesium. The elementary analysis made by the same chemists on three samples gave an average of 47.61 per cent. of carbon; oxygen, 7.62 per cent.; nitrogen, 14.54 per cent.; and sulphur, 1.15 per cent. From the varying constitution, however, and from the characters as described the purified tuberculin appears to be an albuminoid substance, but from the high proportion of ash and the uncertain reactions with certain reagents, such as acetate of lead and acetic acid, it is evident that the substance is not yet pure, and that the impurities consist of small quantities of albuminoids similar to the tuberculin, and of mineral salts which have no therapeutic significance.

Tuberculin appears to be most nearly allied to the albumoses, but differs from them and from the toxalbumins in the fact that it withstands very high temperatures; it differs from the peptones in many respects, but especially in that it is easily precipitated by acetate of lead.

Having obtained a pure tuberculin, it was necessary to determine whether the good effects of the crude substance, apart from the disturbing after-effects, could be obtained. The purified tuberculin was administered in varying doses of from 2 to 5 milligrammes to Drs. Kitasato, A. Wassermann, H. Maass, and E. Guttman. In every case there was a rise of temperature proportional to the dose, sickness and faintness, shivering and perspiration, rapid pulse, headache, and sometimes muscular pains in the chest or in the abdomen, but in every case there was a return to perfect health within twenty-four hours. In the case of Herr O. Wassermann, who received 4 milligrammes of purified tuberculin, the temperature rose within ten hours from 36.9° to 39.5° C., then fell to 38.4°, rising twenty-seven hours after the injection to 40.2° C. With the first rise the subjective phenomena were slight, but with the second rise the pulse was so small and irregular and the subjective phenomena were so marked that it was deemed necessary to administer alcoholic stimulants. Whether there was a possibility of the presence of tuberculosis in this last case was doubtful, but it was not out of the question; in any case, this experiment shows that it is necessary to be cautious in the administration of even the purified tuberculin.

A number of tuberculous patients in the Moabit Hospital were then treated with small doses—sometimes with the pure tuberculin and sometimes with the crude tuberculin—with the result that it was found that the pure tuberculin does not differ appreciably in its action from the crude sub-

² The amount yielded could easily be increased by adding more alcohol—65 to 70 per cent. to the tuberculin, but although a larger quantity of the active principles was obtained it was not nearly so pure.

³ In a series of experiments made by Professor Pfuhl, samples (1) of crude tuberculin, (2) of a watery solution, and (3) of a 50 per cent. glycerine solution of purified tuberculin were placed for two hours in an autoclave at a temperature of 160° C., and tuberculous animals were injected with a corresponding quantity of each. Only the animal that received an injection of the watery solution remained alive; both the others died with pronounced evidence of tuberculin reaction.

stance, the diagnostic and therapeutic effects of both being essentially the same.

The pure tuberculin, which in the case of guinea-pigs was proved to be fifty times as strong as the crude tuberculin, in the case of the human patient was forty times as strong. In fact, when administered, the pure substance appeared to have no advantage over the crude tuberculin. Whether the pure tuberculin is more stable cannot yet be determined. The crude tuberculin, which is a strong solution in glycerine, can be readily kept, and even in the specimens that have been kept longest there is apparently no deterioration.

Professor Koch then describes the methods of cultivating tubercle bacilli in masses, without which mass cultivation it is of no use trying to manufacture tuberculin.

It is absolutely necessary that the cultures should be pure, and such cultures can only be obtained by expert bacteriologists. Originally the tubercle bacilli were grown in test tubes containing glycerine peptone agar; the culture was then washed from the surface, collected on a fine wire sieve, treated with a 4 per cent. glycerine solution, evaporated to one-tenth of the original bulk and filtered, the filtrate being used as tuberculin. This, however, is a very tedious method, and gives a comparatively poor crop. To grow a larger quantity larger vessels were used, in which, however, it was difficult to use nutrient agar, and fluid media were, therefore, used instead.

This at first was not very successful, but after a time it was accidentally observed that separate scales of bacillus culture which were allowed to remain dry on their upper surface grew most luxuriantly, and in the course of a week or two formed a thick dry white crust, no further growth being observed at the end of six or eight weeks, but after this the crust or film became moistened and gradually sank. Such a culture was much more luxuriant than any that could be obtained on a solid nutrient medium; an infusion of veal prepared in the ordinary way and made weakly alkaline, to which was added 1 per cent. of peptone and 4.5 per cent. of glycerine was used, or a 1 per cent. meat extract solution might be used in place of the veal infusion. The best culture vessel for this purpose is the flat-bottomed Erlenmeyer flask, in which is placed from 30 to 50 cc. of fluid. This is inoculated with a small scale of the seed culture material, which is allowed to float on the surface, and then incubated at 38° C.

The activity of the tuberculin is much the same whether it is prepared with freshly bred cultures, or with cultures several years old, and irrespective of whether they are taken direct from tuberculous human subjects or whether the bacillus has been repeatedly passed through other animals. The fluid medium itself extracts a considerable proportion of the active substance so that it is no longer necessary to extract with the watery solution of glycerine in order to turn to account the active principle; after they had been extracted in this fluid, the bacilli again extracted with the glycerine solution gave a fluid which exerts only a very slight action on tuberculous guinea-pigs. The cultures used for extraction must be fully ripe—from six to eight weeks old; they must be absolutely pure, to ensure which each vessel must be examined microscopically. These pure cultures are evaporated in a suitable vessel over a water bath to one-tenth part of their original bulk; they are then kept for an hour at a temperature of about 100° C., in order completely to kill the tubercle bacilli, which are then removed by filtering the fluid through a clay or silica filter. Tuberculin so produced contains from 40 to 50 per cent. of glycerine, by which it is protected against the entrance of bacteria; it is only necessary further to guard against fungi settling on its surface. So preserved and protected it keeps its original properties for a considerable time, remaining perhaps even for years in an active condition. Of course before being used its strength must be tested by administering graduated doses to a large number of tuberculous guinea-pigs. Two animals are taken for each dose, the doses are then carefully graduated, from which the strength of the tuberculin can be measured with sufficient accuracy. In the choice of animals it is well to take care that the tuberculosis shall, as far as possible, be in about the same stage of development.

DR. S. WINOGRADSKY, of Zürich, has been appointed director of the Scientific Bacteriological Section of the new Bacteriological Institute at St. Petersburg.

PARLIAMENTARY BILLS COMMITTEE.

A MEETING of the Parliamentary Bills Committee of the British Medical Association was held at the offices of the Association on October 20th, when there were present: Dr. Roberts Thomson (President); Dr. Withers Moore (President of Council); Mr. H. T. Butlin (Treasurer); Mr. S. H. Agar (Henley-in-Arden); Mr. Balding (Royston); Dr. T. Bridgewater (Harrow-on-the-Hill); Dr. J. W. Browne (London); Dr. J. S. Cameron (Leeds); Dr. P. M. Deas (Exeter); Dr. W. Dixon (Upper Norwood); Dr. J. Langdon Down (London); Mr. G. Eastes (London); Dr. R. Esler (London); Mr. E. H. Galton (London); Dr. Bruce Goff (Bothwell); Dr. Ogilvie Grant (Inverness); Mr. Ernest Hart (London); Mr. Hemming (Kimbolton); Dr. Holman (Reigate); Dr. Robert Jones (Redhill); Dr. W. J. Mickle (London); Mr. C. H. W. Parkinson (Wimborne Minster); Mr. J. Prankerd (London); Mr. Walter Rivington (London); Mr. W. D. Spanton (Hanley); Dr. Urquhart (Perth); Mr. F. Wallace (London).

The resolution of Council appointing Committee was read. On the motion of the President of Council (Dr. WITHERS MOORE), Mr. Ernest Hart was re-elected Chairman for the year.

IRISH DISPENSARY DOCTORS.

THE CHAIRMAN said it was important that they should endeavour energetically to assist the Irish dispensary doctors. They had never been able to do anything for them, although they had done a good deal for the English Poor-law Medical Service. He had encouraged a vigorous discussion on the subject in the *BRITISH MEDICAL JOURNAL*, and he had been able to publish a most excellent series of letters from representative men. Some of the Irish dispensary doctors had proposed to reprint the whole of that correspondence among themselves. Then the question arose as to how to give effect to the important information collected. He (the Chairman) asked a good authority to draw up a memorandum indicating what were the special abuses proved to exist, and asking for remedies. He proposed that this memorandum [printed below] should be circulated to every Irish dispensary doctor, with a schedule of questions the answers to which would be carefully analysed, and a further report would be presented to the Committee at its next meeting for further action. This resolution was unanimously adopted.

DRAFT MEMORANDUM ON THE POOR-LAW DISPENSARY SERVICE IN IRELAND.

PREPARED AT THE REQUEST OF THE CHAIRMAN OF THE COMMITTEE BY MR. WILLIAM THOMSON, F.R.C.S., Surgeon to the Richmond Hospital, Dublin.

THE letters from Irish Poor-law dispensary doctors which have been appearing for the past few months in the *BRITISH MEDICAL JOURNAL* show how great is the discontent which pervades the service; severe work, bad pay, harsh treatment, and the irritating tyranny of dispensary committees have at last forced what looks like united protest from the unhappy medical officers. So far the complaints represent very well the whole of Ireland. The shoe does not pinch only in the wilds of Connemara, or Donegal, or Kerry; it is only more bearable in the big towns and home districts.

The Poor-law relief system is administered under the Local Government Board in Dublin. One of the members of this body is a medical man of high position (Dr. McCabe), who has himself served in a dispensary; and he is aided by several inspectors. Its function is largely one of distant supervision. The actually powerful body is the dispensary committee of each district. In the towns the composition of this committee is often unobjectionable, but in out-of-the-way country districts its members are, in the main, small farmers of large prejudice and deficient education, to whom some of the most important powers under the Poor Law are entrusted. They appoint their doctor, and having given him the honour of their support, they often worry him by a system of petty despotism.

The Dispensary Doctor's Duties.—His duties are multifarious and ceaseless. He must attend his dispensary at fixed hours, personally visit all persons who present a "red ticket," keep and duly enter up his relief register, compare the medicines with the invoice, compound them in many cases, vaccinate all who come to him for that purpose, inspect these in a week afterwards, send in a report of his results, report and prosecute those who have not been vaccinated, report to his committee the hours of his attendance and departure from the dispensary, send a quarterly return to the Local Government Board, etc.

The Red Ticket.—Every "poor" person who requires attendance at his own home must procure what is known as the red ticket. This is an order to the medical officer to visit the individual named on the face of the ticket. It may be signed by any member of committee, by the relieving officer, or by the warden. In many cases the people who issue these tickets are small shopkeepers. It is a useful attraction when these persons can give tickets which will compel the doctor to travel, it may be a dozen or more miles, to see the applicant, and all for nothing. Frequently the tickets are signed in numbers by the persons authorised to

sign, and are then given to all comers by some irresponsible apprentice behind the counter.

What is a "Poor" Man?—Here a principal grievance comes in. Who is a "poor" man, and who is to determine the question? At present, the grossest abuses are perpetrated. People who notoriously are comfortably off, and able to pay a reasonable fee to the doctor, have his attendance for nothing. Farmers, shopkeepers, well-to-do artisans, and others alike follow this plan of getting free medical advice through the good offices of a friendly member of committee or a warden. The doctor may bring the matter before the next meeting of his committee to have the ticket cancelled; but until that body meets, he must go on with his attendance, or the attendance may have finished before it is possible to cancel the ticket at all. Under this evil the dispensary officer groans. Yet the machinery to deal with this scandal is so cumbrous that he often finds it better to say nothing. If he defeats his committee on an appeal to the Local Government Board, he is only laying up for himself in the future the hostility of some members of these local authorities.

Districts.—The dispensary districts differ in size and character. In the towns they are of manageable dimensions; in the country districts, especially along the western and northern coasts, they are large and difficult to work. There are districts more than twelve miles in length by the same or more broad—that is to say, the medical officer has charge of the sick poor in 144 square miles of country. In the mountainous parts the work is sometimes terrible. He drives ten or more miles in one direction; then in another for a like distance. He may have to cross a bog or go up a mountain slope on foot to see one who is quite capable of travelling into the village to see him. At all hours, day and night, summer and winter, he must turn out to obey the order of a red ticket, or take the consequences in the shape of censure or dismissal.

Salaries.—His pay averages about £100 a year. Some have £130 with vaccination fees, some have less. What does this mean in a district in West Mayo or West Cork, where people are few and scattered, and, in the great majority, really poor? It means that he must keep a horse, perhaps a trap, pay house rent and feed himself, buy books, appear well dressed, and bear himself generally as a member of a learned profession at a salary which a good working man would spurn. When to all this is added that he may be a married man with children, the picture of his misery is completed. Should he fall sick he may nominate a substitute, whom the committee often allows him the privilege of paying out of his scanty salary. When he has spent most of his life in the service he may receive a retiring allowance, but committees frequently refuse to give any pension, and the unfortunate doctor may be sent away at the age of 70 or more without a shilling.

When I was treasurer of the Royal Medical Benevolent Fund of Ireland I had frequently before me letters from dispensary officers, written in the depths of despair, telling of children who could not be clothed or properly fed, or taught, for want of money. Of course, it will be said that these doctors were allowed to practise. But a man cannot practise medically upon stone walls and bogs. The inhabitants, such as they are, are poor, and to the bulk of them payment of a fee is an impossibility. It will be noted that I am not speaking of the dispensary doctors in towns or well-populated and cultivated districts, where private practice is available; but where, nevertheless, the other grievances are as vital as elsewhere.

Pensions and Holidays.—Retiring allowances already stated are only optional. The power of granting them is given to the boards of guardians or dispensary committees. If a doctor has in any way earned the enmity of his masters, the hope of a pension is slight. He must place himself entirely at their mercy by resigning, and then they will consider the question of pension. Cases are known where medical officers have gone on holding grimly to their small income, when age had made them unfit to do their duty, because they dare not trust themselves to the mercy of their committee. It is an atrocious system. The Irish Medical Association, under the guidance of its late distinguished secretary, Dr. Chapman, agitated upon this grievance for years, but successive Governments have allowed it to go on without remedy. Holidays are not recognised. A dispensary doctor is supposed to have plenty of fresh air in his daily work, and some of his masters, who have never been outside the borders of the county, do not understand why he should want to go to Dublin or elsewhere. If he does so want, he must in most cases pay his substitute at the rate of two or three guineas a week, and be very much obliged to the Committee for having let him off at all.

Remedies.—In the first place action lies with themselves. The Irish Medical Association has done a great deal to fight their battles, and has often been victorious. But the difficulty has been that the country dispensary men have not attended the meetings, for the reasons in many instances that they could not leave their work, but more often, I fear, because of hopelessness of any good to be gained. They appear, however, to be awakening, and if anything is to be done it is to be done now.

Suggestions.—It appears that legislation is required in the following directions:

1. That means should be taken to make the meaning of the word "poor" more definite, so as to prevent the present scandalous abuse of the red ticket system.
2. To revise the districts so as to make them of small size and within the scope of a doctor's reasonable power.
3. To increase the salaries of the dispensary doctor in those districts where he is practically unable to supplement his income by private practice.
4. To make the granting of retiring allowances compulsory in all cases, proportionate to the length of service.
5. To compel the giving of a month's holiday to every dispensary doctor, the substitute to be paid by the dispensary committee.
6. To compel the payment of a substitute by the committee, in all cases of illness, within certain limits.
7. To make such changes as will prevent the present indiscriminate issuing of medical relief by persons who abuse their privileges.
8. To change the whole medical relief system into a public service, to which admission shall be gained by public competition. This has for years appeared to me to be the corner-stone of improvement in the Poor-law Medical Service. It would get rid of all objections on the score of

religious and political opinions. At present, what a man thinks in religion and politics is very often the first consideration with a committee, not what he knows of practical medicine. The public examination would destroy the plotting of partisans. There could be a supernumerary body of men, who could be sent throughout the country to do holiday duty, or to relieve doctors who were ill. Those holding appointments in poor districts might be promoted to better districts, but I would not compel a doctor to leave a district if for any sound reason he preferred to remain. The pay should be arranged on such a scale that those who were unable to supplement it by private practice should have a sum on which they might at least live with some degree of comfort. The details of such a scheme could be easily worked out, and were it carried into effect the sick poor would be more efficiently looked after, and the position of the doctor would be made tolerable.

That the reforms indicated are necessary to the well-being of the public is certain; that there are many and great scandals in the whole system is no less certain. What is wanted is to remove these is persistent and united effort.

PROPOSED SCHEDULE OF QUESTIONS TO BE ISSUED.

1. How would you propose to define the words "poor" person in reference to Poor-law medical relief?
2. Who should have the power of issuing tickets? Ought it to be given to shopkeepers, or to clergymen, or confined to relieving officers, and why?
3. If a red ticket should be issued to a person able to pay for medical attendance, can you suggest a method by which you could be authorised to cease visiting at once, without waiting for a meeting of the dispensary committee?
4. State particulars of any case of marked abuse of the privilege of medical relief?
5. Is the constitution of the average dispensary committee satisfactory? If not, what improvements would you suggest?
6. What is the length and breadth of your district? Is it difficult to work? What conveyance do you employ?
7. What is your salary as dispensary officer? How much do you receive for vaccination and sanitary work?
8. Is private practice available to any considerable extent? (This question may be answered in a general way, or with whatever particulars you prefer to give.)
9. What proportion of your salary goes in payment of the necessary expenses attending the discharge of your duty as dispensary doctor?
10. Have you to pay your substitute when you go on holiday or are ill? If so, do you wish to state how much on the average?
11. Do you know of any cases in which a retiring medical officer has been refused compensation, or has been inadequately pensioned? Please state particulars.
12. Are you in favour of a fixed annual holiday, the substitute to be paid by the committee?
13. Do you think your district should be divided for the purposes of medical relief?
14. Do you think the condition of the medical officers generally would be improved by establishing a public competition for entrance to the service? Have you any suggestions to make as to details of carrying out such a scheme?
15. Are you in favour of having some special arrangement made, such as by a small percentage deduction from salary, to provide a fund for widows and children of dispensary medical officers, the fund to be administered by the central authority?
16. Any other observations or suggestions?

THE CASE OF DR. COLLIE.

The CHAIRMAN said they were all more or less aware of the facts in connection with Dr. Collie; the immediate facts for their consideration might be narrowed to a comparatively small compass. Dr. Collie was the medical officer of the Eastern Hospital, against whom certain charges were brought. Those charges were investigated, Dr. Collie not being represented by counsel; and to the surprise of everybody, after a considerable interval of time, a letter was issued by the Local Government Board recommending the dismissal of Dr. Collie for reasons stated. The reasons were tolerably well known to all of them: they had been fully discussed in the *Times*, *Lancet*, and *BRITISH MEDICAL JOURNAL*, and in all the daily papers, and Dr. Collie had made a reply which most people had read. It would be noted that the final statement of the Local Government Board reduced the gravamen of the charges against Dr. Collie to a very small point indeed; they made no medical charge against him at all. They recognised his skill and the way in which he had performed his duties as a physician, but as to his administrative duties as superintendent they recapitulated that there was too great a monotony of diet. He was inculpated for allowing too great a monotony of diet. The second case against him was that he allowed dancing to go on on Christmas evening in a particular ward. The third charge against him was that the disinfection was not satisfactory. Now it was admitted on both sides, by the Local Government Board, as well as by Dr. Collie, that the diet, which was a fish diet, was monotonous. On the other hand it was to be remembered that the Local Government Board has made too great a variety a

charge against him before, and that the inspectors of the Local Government Board were constantly at the hospital, and it was quite within their power at any time to have it varied. As to infection, it was admitted by the Local Government Board that there never had been, during the thirty years for which he had held office, any instance of infection conveyed by the clothes. But theoretically they disapproved of his method. It was pretty generally felt that Dr. Collie had been made a scapegoat of, and at the end of thirty years summarily to dismiss him was a very extreme act indeed. The inspectors did not, it was alleged, report in favour of his dismissal; that was an act on the part of the higher offices of the Local Government Board. As he (the Chairman) did not think the Committee would be able to go into all the details, he had referred the documents to a gentleman whom he thought they might all have confidence in; that was Dr. Steele, of Guy's Hospital, who was very intimately cognisant with the management of hospitals, and he had written a memorandum on the subject.

Mr. F. WALLACE, speaking as a member of the Hospital Committee of the Asylums Board, said he could reiterate every word their Chairman had said. With regard to the dance on January 6th, 1890, the matter was brought before the Committee and reported to the Local Government Board, who, however, took no steps whatever until eighteen months after.

The following resolution, which it was proposed to embody in a letter to the Local Government Board, was unanimously adopted: "That the Chairman be requested to make to the President of the Local Government Board and to the Metropolitan Asylums Board a communication representing the strong and unanimous opinion of this representative committee that, having regard to all the circumstances of the case, and especially to the admitted excellence and importance of Dr. Collie's services as chief medical officer of the institution during a long series of years, and to the skill, kindness, and success with which he has treated many thousands of persons in the course of his official career in the service of the Board, and to the knowledge, efficiency, and devotion with which during the whole of his long public service he has performed his medical duties, this Committee earnestly hope that in respect to the resignation of Dr. Collie, which has been called for by the Local Government Board in view of certain lapses alleged in the administration of the non-medical part of his duties, the Board will take a favourable view of the circumstances, and will not allow Dr. Collie to retire without conferring on him a substantial pension. The Committee, while not assuming to interfere with the judgment of the Local Government Board as to the course which it is their duty to take in the matter in respect to the relatively unimportant lapses so alleged, cannot refrain from expressing an opinion, to which their acquaintance with the administration of hospitals may be considered to give weight, that, even admitting the whole of the points alleged against Dr. Collie's administration, they ought not to be considered in the least degree to outweigh his invaluable and life-long services. Looking to his age, the imperfect state of his health brought about by long and wearing service, and by the anxieties due to the course of recent events, the Committee desire their Chairman to express their earnest hope that the pension granted will be on the fullest and most liberal scale."

[The further proceedings of the Committee will be published later.]

THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A MEETING of the Committee of the Association of Fellows of the Royal College of Surgeons was held on October 22nd, at 36, Grosvenor Street, W., Mr. F. J. GANT being in the chair.

The minutes of the previous meeting having been read and confirmed, a letter was read from the President, Mr. George Pollock, regretting his inability to be president. A letter was also read from Mr. R. Caldwell, of the Garrison, Barbadoes, which had been forwarded to Mr. R. Davy, calling attention to the present arrangement of sending out the voting papers for the election of the President of the College. Mr. Caldwell wrote to the Secretary of the College on March 9th last, with

the view of having a voter's paper sent to him, so that he could return it filled up in time for the election. In reply to his communication the secretary informed him that the voting papers were not issued till June 8th, and that consequently it would be useless to forward a voting paper, inasmuch as the latest date for returning them was June 30th. After some discussion the Honorary Secretary was instructed to communicate privately with Mr. Davy on the subject.

Mr. LAWSON TAIT then introduced the question of the absence of minutes at the general meetings of Fellows and Members held at the College; and with a view of obtaining an authoritative statement upon this point, he proposed the following resolution: "That the Honorary Secretary be requested on behalf of this Committee to communicate to the President of the Royal College of Surgeons that Mr. Lawson Tait will raise, as a point of order, at the meeting of the Fellows and Members at the College on November 5th, the question of the reading and confirming the minutes of the previous general meeting." This was seconded by Dr. W. J. COLLINS and carried unanimously.

Dr. COLLINS then proposed: "That in view of the fact that the General Medical Council has invited the consideration of the Colleges of Physicians and Surgeons to the details of the scheme suggested for the fulfilment of the five years' curriculum recently recommended by the General Medical Council, and in view of the fact that a scheme emanating from the Council of this College has been submitted in print to the Fellows of the Royal College of Physicians without the Fellows of this College having been officially informed of the nature of the scheme, this meeting records its regret that on so important a matter the body corporate of this College was not consulted." This was seconded by Mr. TWEEDY and carried unanimously. A copy of this resolution was directed to be sent to the Honorary Secretary of the Members' Committee, as well as to the Secretary of the College.

This concluded the business of the meeting, and the committee adjourned.

HARVEIAN SOCIETY OF LONDON.—The members of the Harveian Society dined together at Limmer's Hotel on October 22nd. Mr. Cripps Lawrence, President of the Society, occupied the chair, and was supported by many past presidents and distinguished visitors. Mr. G. P. Field proposed "The Medical Societies;" Dr. Douglas Powell, President of the Medical Society, replied. Sir W. S. Savory proposed "The Harveian Society." He observed that it might be said in respect of medical progress that the goal of to-day is the starting point of to-morrow. Mr. Lawrence replied for the Society. He said that London now boasted some 21 or 22 medical societies, the parent of all of which was the Medical Society, founded in 1773. Thirty-two years afterwards the Royal Medical and Chirurgical Society came into existence: 14 years later (1819) the Hunterian Society, and 12 years later still (1831) the Harveian Society. Altogether in 100 years from 1773, 11 societies first saw the light; whilst during the 11 years from 1876 to 1887, the births of 8 more were registered. Dr. J. E. Pollock proposed "The Visitors." Sir Andrew Clark replied, and said that all that had been spoken or heard of the Harveian Society that night was in its praise. The benefits such a gathering conferred were not only of the sensuous kind, but also intellectual and moral. Again, when men saw each other only from a distance they were apt to look askance at one another, but when they met at the social board it softened asperities and each was apt to go away thinking the other a very good fellow after all. Dr. T. Buzzard proposed "The Secretaries of the Society," and Mr. D'Arcy Power responded on behalf of himself and Dr. G. William Hill, the co-secretaries. In the course of the evening some excellent songs were given by Messrs. S. Evans, R. C. Willis, P. Bradley, and Ernest Lane, whom Dr. Scanes Spicer accompanied very efficiently on the pianoforte.

Dr. MARRIOTT, Consulting Surgeon to the Warneford Hospital, being compelled to relinquish his practice at Leamington in consequence of impaired health, was entertained at a complimentary dinner by the medical men of the town and neighbourhood previous to his departure for Reading, where he has been appointed Physician to the Royal Berks Hospital.

COMPULSORY CLASSICS AT CAMBRIDGE.

THE division on the question whether a syndicate should be appointed to consider alternatives for one or other of the classical languages in the Previous Examination was taken on Thursday, October 29th, in the Senate House at Cambridge. It was preceded by an active discussion, in which the representatives of the faculties of medicine and natural science sided with eminent classical scholars (Dr. Butler, Dr. Sidgwick, Dr. Jackson, and others) who initiated the proposal. A large number of non-resident medical graduates and of the country clergy took part in the voting, and the Grace was in the end rejected by 185 to 525.

ASSOCIATION INTELLIGENCE.

NOTICE.

THE President of Council, who is abroad and will not be back again before the second week in December, requests all communications should be addressed to the Office, 429, Strand, W.C.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are now fitted up for the accommodation of the Members in commodious apartments, at the Offices of the Association, 429, Strand. The rooms are open from 10 A.M. to 5 P.M. Members can have their letters addressed to them at the Office.

BRANCH MEETINGS TO BE HELD.

MIDLAND BRANCH: LINCOLNSHIRE DISTRICT.—A meeting will be held at Gainsborough, on Thursday, November 12th. Members desirous of reading papers, etc., are requested to communicate on or before Monday, October 28th, with W. A. CARLINE, M.D., Honorary Secretary, Lincoln.

BORDER COUNTIES BRANCH.—The autumn meeting of this Branch will be held at the County Hotel, Carlisle, on Thursday, November 13th, at 3.15 P.M. Dinner at 5.45 P.M., 5s. Members desirous of reading papers, etc., will please communicate with Dr. ALTHAM, Penrith.

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.—The annual meeting of this District will be held at the Athenæum, Camden Road, N., on Wednesday, November 11th, 1891, at 8 P.M., Dr. Cleveland, President of the Metropolitan Counties Branch, in the chair. Dr. Herman will read a paper on Dysmenorrhœa and its Treatment. Officers for the ensuing year will be elected. All registered medical men, whether members of the Association or not, are earnestly invited to attend these meetings.—GEORGE HENTY, M.D., Honorary Secretary, 302, Camden Road, N.

LANCASHIRE AND CHESHIRE BRANCH.—The intermediate meeting of this Branch will be held at Southport on Wednesday, December 9th, 1891. Gentlemen wishing to read papers or show cases will please communicate at once with Dr. GLASCOTT, 23, Saint John Street, Manchester, Honorary Secretary.

SOUTH-EASTERN BRANCH: EAST SUSSEX DISTRICT.—A meeting of the above District will be held at the Calverly Hotel, Tunbridge Wells, on Thursday, November 19th. Dr. Pardington will preside. Meeting at 3.30 P.M.; dinner at 5.30 P.M.; charge, 6s., exclusive of wine. The following papers will be read: Dr. Ranking: Ulcerative Endocarditis, with notes of two cases and specimens. Dr. Richardson: The Family History of Chlorosis. Mr. Footness: Notes of Two Cases: (a) Nephrolithotomy, (b) Suprapubic Lithotomy.—T. JENNER VERRALL, Honorary Secretary, 97, Montpelier Road, Brighton.

SYDNEY AND NEW SOUTH WALES BRANCH.

THE 102nd general meeting of the Branch was held at Sydney, on September 4th, Dr. SCOT SKIRVING, President, in the chair. There were present Drs. Twynam, Quaife, Graham, Fiaschi, Hankins, Edwin Chisholm, Manning, Rennie, Crago, W. Chisholm, Megginson, Thomas, West, Hodgson, Newmarch,

Lloyd, R. Bowman, Martin, J. Parker, Pockley, Hull, A. Parker, Edward Brady, Worrall, McCulloch, Shewen, Cohen, Jameson, Wood, Coutie, Odillo Maher, Furnival, Collingwood, Browne, Kendall.

New Members.—The minutes of the previous meeting having been read and confirmed, the PRESIDENT announced the election of the following gentlemen: Dr. James Jarvie Hood, Dr. Scott (Scone), Dr. Blackwood (Cooma), Dr. Purser (Prince Alfred Hospital).

Paper.—Dr. TWYNAM read notes on cases of Appendicitis. The paper was discussed by Drs. RENNIE, HODGSON, SCOT SKIRVING, WORRALL, NEWMARCH, THOMAS TWYNAM, and HULL.

The Leichhard Friendly Society's Dispensary.—Dr. McCULLOCH moved: "That the Honorary Secretary's letter of June 10th, 1891, in reference to the Leichhard Friendly Society's Dispensary be considered and discussed."—Dr. HULL seconded the resolution.—Drs. WORRALL, EDWARDS, MEGGINSON, QUAIFFE, CRAGO, HODGSON, WM. CHISHOLM, and COLLINGWOOD discussed the resolution, and Dr. NEWMARCH moved that the debate be adjourned.—Carried.

LEEWARD ISLANDS BRANCH.

A SPECIAL meeting of the Antigua Section of the Leeward Islands Branch was held on August 14th, Dr. W. H. EDWARDS, President, in the chair. There were present Drs. A. G. McHattie (Vice-President), G. E. Pieréz (Hon. Sec.), F. J. Freeland, J. S. Gabriel, A. Mackie, and H. A. Nicholls (visitor).

New Member.—J. S. M. Nurse, M.B., C.M. Edin., Government Medical Officer of Anguilla, was elected a member of the Association.

Medical Poor Relief.—The committee appointed at the previous meeting having been unable to frame a report upon the subject of the Medical Poor Relief Act and Estates Contract Act, the following resolution was proposed by Dr. J. S. GABRIEL, seconded by the PRESIDENT, and unanimously carried: "Whereas, under the provisions of the Medical Aid Act, No. 14 of 1870, the labourers have not derived the benefit intended by the Legislature, and the district medical officers are imposed upon by persons in good circumstances obtaining gratuitous medical attendance; and whereas the present system of contract medical aid to estates has given, and is giving, rise to disputes between the district medical officers, and is not nearly as efficient as might be wished, resolved that in the opinion of the Antigua section of the Leeward Islands Branch of the British Medical Association it is imperatively necessary that the whole system of medical aid to the people be made the subject of searching inquiry by the Governor of the Colony, and that the medical officers be afforded an opportunity of stating their opinions and detailing their grievances to his Excellency during the process of inquiry. And resolved further that the Honorary Secretary do forward a copy of this resolution to his Excellency the Governor of the Leeward Islands."

Disputes Between Members.—Dr. NICHOLLS proposed the following resolution: "That in the case of a dispute between members of the Association, the matter should be laid before the members called together by the local secretary, any three of whom shall form a quorum, in a different island to that in which the dispute occurred." Seconded by Dr. PIEREZ, and unanimously carried.

SPECIAL CORRESPONDENCE.

SHEFFIELD.

Firth College.—Ambulance Classes.—Cruelty to Children.—Legacy.

FIRTH COLLEGE is undergoing enlargement. This has become necessary in consequence of the increasing success of the institution. The new accommodation to be provided will double the number of class rooms. The action taken by the county councils to further technical education has thrown a great deal of extra work on the College, and instruction is being given by its lecturers in various districts on mining and other subjects.