An endocarditis with fever as its only symptom may be prolonged for weeks or months under many different circumstances. Following rheumatic fever in a child an endocardial complication may keep up a temperature of from 100° to 101° for several months, during which time there may be no other symptoms and the general condition may remain fairly good. In chronic valvular disease in the stage of broken compensation slight irregular fever may persist for months, associated with the presence of fresh endocarditis. As a rule, the form of endocarditis to which we give the term infective, septic, or ulcerative runs its course under three months. That occasional instances were characterized by a very protracted course was noted by Wilks, Bristowe, Coupland, and Lancereaux. In my Goulstonian Lectures 1885, I stated that this type had the following characteristics: the fever was irregular and intermittent, resembling ague; the cold, hot, and sweating stages might succeed each other with great regularity; in the intervals fever might be absent; two or three paroxysms could occur in the course of a day. In many of the instances the disease was prolonged to three or four months, and I give the notes of a case of Bristowe's, in which the condition persisted for five months. The recurring chills usually led to the diagnosis of malaria and also gave rise to the opinion widely held, particularly by French writers, that ulcerative endocarditis could be caused by this disease. The cases to which I wish to call attention in this communication are of this chronic character, not marked specially by chills, but by a protracted fever, often not very high but from four to twelve months' duration. At the time of the delivery of the Goulstonian Lectures I had not seen a case of this type. In the past twenty years I have seen ten cases of this form, two of which I have already reported (Practitioner, 1893). I have put them together in tabular form to indicate their main features.

1 Read at the Association of Physicians of Great Britain and Ireland, Edinburgh, June 12, 1908.

[Q. J. M., Jan. 1909]
## SUMMARY OF TEN CASES OF CHRONIC INFECTIOUS ENDOCARDITIS.

<table>
<thead>
<tr>
<th>No.</th>
<th>NAME</th>
<th>AGE</th>
<th>DATE</th>
<th>Former Rheumatic Fever</th>
<th>Old Valve Lesion</th>
<th>Early Symptoms</th>
<th>Type of Fever</th>
<th>Skin Symptoms</th>
<th>Embolism</th>
<th>Heart Lesions</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>J. M.</td>
<td>25</td>
<td>July, 1888</td>
<td>Yes</td>
<td>Mitral</td>
<td>Fever</td>
<td>Remittent and intermittent</td>
<td>Painful nodular erythema</td>
<td>None</td>
<td>Mitral endocarditis</td>
<td>13 months</td>
</tr>
<tr>
<td>2</td>
<td>T. B.</td>
<td>43</td>
<td>March, 1892</td>
<td>No</td>
<td>Mitral</td>
<td>Chills and fever</td>
<td>Remittent</td>
<td>Purpura</td>
<td>None</td>
<td>Mitral endocarditis</td>
<td>10 months</td>
</tr>
<tr>
<td>3</td>
<td>Florence D.</td>
<td>21</td>
<td>March, 1899</td>
<td>Yes</td>
<td>Mitral</td>
<td>Chills and fever</td>
<td>Remittent</td>
<td>Painful nodular erythema</td>
<td>Brain</td>
<td>No p.m.</td>
<td>7 months+</td>
</tr>
<tr>
<td>4</td>
<td>Mary B.</td>
<td>19</td>
<td>June, 1890</td>
<td>Yes</td>
<td>Mitral</td>
<td>Chills and fever</td>
<td>Remittent</td>
<td>Painful nodular erythema</td>
<td>Brain</td>
<td>No p.m.</td>
<td>5 months+</td>
</tr>
<tr>
<td>5</td>
<td>R. B.</td>
<td>53</td>
<td>May, 1902</td>
<td>No</td>
<td>Aortic</td>
<td>Chills and fever</td>
<td>Remittent with chills</td>
<td>—</td>
<td>None</td>
<td>No p.m.</td>
<td>4 months+</td>
</tr>
<tr>
<td>6</td>
<td>Dr. B. T.</td>
<td>33</td>
<td>Sept., 1902</td>
<td>No</td>
<td>Aortic</td>
<td>Arthritis, chills, fever</td>
<td>Intermittent and remittent</td>
<td>Painful nodular erythema</td>
<td>None</td>
<td>No p.m.</td>
<td>8 months</td>
</tr>
<tr>
<td>7</td>
<td>Dr. R. T.</td>
<td>53</td>
<td>Feb., 1903</td>
<td>Yes</td>
<td>Mitral</td>
<td>Fever and sweats</td>
<td>Remittent</td>
<td>Painful nodular erythema</td>
<td>Retina, spleen, kidney</td>
<td>Mitral, aortic, and tricuspid endocarditis</td>
<td>8 months+</td>
</tr>
<tr>
<td>8</td>
<td>R. W.</td>
<td>36</td>
<td>Nov., 1906</td>
<td>Yes</td>
<td>Mitral</td>
<td>Chills and anaemia</td>
<td>Remittent</td>
<td>Purpura</td>
<td>None</td>
<td>No p.m.</td>
<td>6 months</td>
</tr>
<tr>
<td>9</td>
<td>Dr. C.</td>
<td>52</td>
<td>May, 1907</td>
<td>No</td>
<td>Mitral</td>
<td>Fever</td>
<td>Remittent</td>
<td>Painful nodular erythema</td>
<td>Brain</td>
<td>No p.m.</td>
<td>7 months</td>
</tr>
<tr>
<td>10</td>
<td>Alice A.</td>
<td>20</td>
<td>Jan., 1908</td>
<td>Yes</td>
<td>Mitral</td>
<td>Fever</td>
<td>Remittent</td>
<td>Painful nodular erythema</td>
<td>None</td>
<td>No p.m.</td>
<td>7 months</td>
</tr>
</tbody>
</table>
It has long been recognized that malignant endocarditis is really an acute septicæmia with localization on the endocardium, but the symptoms are not necessarily due to the local lesion. The clinical picture is a septicæmia sometimes of a typhoid type, sometimes like a pyæmia—then again with predominant meningeal symptoms, occasionally with pronounced cardiac features. The pneumococcic, the gonorrheal, and the streptococcic forms present, as a rule, a picture in which the heart-symptoms are in the background. Cases of infection with these organisms may run an identical course without any endocarditis. On the other hand, there is a large group of cases in which the endocarditis plays a more important rôle and the vegetations and ulcerations appear to be directly responsible for the fever and the associated symptoms. As a rule, the valves involved are already the seat of a sclerotic change. The source of the infection is rarely to be determined. Thus, in only one of the series here reported was there an external lesion. The patients in this series were all adults, five women and five men. In six there was a past history of rheumatic fever; eight had old mitral lesions, two aortic, well compensated, and not giving any trouble at the time of the onset of the symptoms. It was not always possible to get a definite history of how the attacks began. In five of the cases there were chills and fever, mistaken for malaria. Cough and loss of weight in some cases suggested tuberculosis. The slight fever without any localizing symptoms may raise the suspicion of typhoid fever. In my series these have been the three diseases the diagnosis of which has been suggested. Once established the fever becomes the dominant, and for months may be the only symptom. This is the most striking peculiarity of the cases. Week after week, month after month, the daily rise of one and a half or two degrees may be the only indication there is of an existing mischief. In Case I, in which the fever lasted for thirteen months, the patient's sister, a trained nurse, had decorated the room with yards of the temperature charts; fever with an occasional sweat were the only symptoms. The appetite remained good and she lost very little in weight. There were no embolic features and from month to month there were few, if any, changes in the cardiac condition. In this very protracted form chills are not nearly so common as in the more acute cases, nor is the fever so high, not often reaching above 102·5° or 103°. It is of a remittent type, not falling to normal at any period of the day. With the occurrence of a chill the temperature may rise to 104° or 105°, but in none of the cases was there the type of fever in which the paroxysms recur with great regularity—quotidian or tertian, as we see so often in the acute forms of ulcerative endocarditis. Another peculiarity is the occurrence of periods of apyrexia, usually towards the end, but in one or two of the cases there were afebrile interludes which gave deceptive promise of recovery. It is well recognized now that fever is not an invariable accompaniment of endocarditis. Following pneumonia there may be for months a slight toxaemia with little or no fever in connexion with a patch of endocarditis.

The cardiac features in this group are usually well marked, but as a rule
there are no symptoms. The patients complain neither of palpitation nor of pain. There is no dyspnoea except towards the close, and in no case did dropsy occur. In eight of the ten cases there were the well-marked physical signs of a mitral lesion and the associated slight enlargement of the heart. In only six cases was there marked hypertrophy and dilatation. In two of the cases there was aortic insufficiency. One of the most striking circumstances is the very slight change in the character of the heart murmur in spite of the fact of most extensive vegetations and alterations in the valves. Thus in the case of Dr. R. T., with the condition of whose heart I had been familiar for fourteen years, the comparison between my first examination in 1889 and that in 1893 showed very little change beyond the slightly greater dislocation outwards of the apex beat. In several of the cases the absence of any change in the character of the heart murmur and the remarkably quiet, negative state of the organ were urged strongly against the existence of endocarditis. It is rather remarkable, considering the anatomical changes, that so little alteration may occur in the physical signs. In Case VI, Dr. B. T., the murmur of aortic insufficiency became more intense towards the close, but in no instance was there the development under observation of alterations in the physical signs such as are sometimes seen in acute ulcerative endocarditis.

Emboli, to cause symptoms, occurred in four cases of the series—in Cases III, IV, and IX in the brain with haemiplegia, Case VIII in the retinal arteries and in the spleen and kidneys. This is in striking contrast to the frequency of this complication in the more acute types of endocarditis.

One of the most interesting features of the disease and one to which very little attention has been paid is the occurrence of ephemeral spots of a painful nodular erythema, chiefly in the skin of the hands and feet, the nodosités cutanées éphémères of the French. My attention was first called to these in the patient of Dr. Mullen of Hamilton, whose description is admirable: 'The spots came out at intervals as small swollen areas, some the size of a pea, others a centimetre and a half in diameter, raised, red, with a whitish point in the centre. I have known them to pass away in a few hours, but more commonly they last for a day, or even longer. The commonest situation is near the tip of the finger, which may be slightly swollen.' Spots of this character occurred in seven of the cases and in three at least they were of importance in determining the diagnosis. Thus in the case of Dr. Carroll, the well-known American Army Surgeon, the collaborator with Dr. Reid in the brilliant work upon yellow fever, the presence of these spots appeared to me to clinch the diagnosis. They are not beneath but in the skin and they are not unlike an ordinary wheal of urticaria. The pads of the fingers and toes, the thenar and hyperthenar eminences, the sides of the fingers, and the skin of the lower part of the arm are the most common localities. In one case they were present in the skin of the flank. I have never seen them haemorrhagic, but always erythematous, sometimes of a very vivid pink hue, with a slightly opaque centre.

The diagnosis in this group of cases may offer great difficulties. For weeks,
indeed for several months, there may be only fever, and unless there have been special features pointing to the heart, such as the development of a diastolic murmur or the great intensification of a mitral bruit, it may be impossible to settle the diagnosis. There are, indeed, cases in which from beginning to close no heart murmur has been present. By far the most suggestive features are: (1) a knowledge of the existence of an old valve lesion. This was present in every one of my series. (2) The occurrence of embolic features, sudden swelling of the spleen, with friction in the left flank, sudden attack of haematuria, embolism of the retinal arteries, hemiplegia or the blocking of a vessel in one of the limbs. (3) The onset of special skin symptoms, purpura, and more particularly the painful erythematous nodules to which I have referred. Present in seven of the ten cases, these are of definite diagnostic import. They are in all probability caused by minute emboli. (4) The progressive cardiac changes, the gradual increase in the dilatation of the heart, the marked change in the character of a mitral murmur, the onset of a loud rasping tricuspid murmur, or the development under observation of an aortic diastolic bruit.

With carefully made blood-cultures one should now be able to determine the presence of the septicaemia. This was easily done in three of my more recent cases. An onset with chills and fever and slight swelling of the spleen almost always leads to the diagnosis of malaria, more particularly in regions in which this disease prevails, but in not one of my cases was there any difficulty in excluding this by careful microscopical examination of the blood. It was not always possible to convince the physician. With slight cough tuberculosis may be suspected, as happened in two or three cases of my series. For many weeks the patient may present nothing but a pyrexia, of doubtful origin, or a crypto-genetic septicaemia, and as he may look very well and may feel very well, and there are no special symptoms, and with a heart-condition that may have remained unchanged for years, it is not easy to reach a positive diagnosis. The blood-cultures and the presence of the painful erythematous nodules and the occurrence of embolism furnish the most important aids.

The anatomical condition in these cases is quite unlike that of the ordinary ulcerative endocarditis. In the three specimens I have had an opportunity of studying there was no actual ulceration, but large proliferative vegetations, firm and hard, greyish yellow in colour, projected from the endocardium of the valves like large condylomata, encrusting the chordae tendinae and extending to the endocardium of the auricle. The condition is quite unlike the globose vegetations of the pneumococcal and gonorrhoeal endocarditis or the superficial ulcerative erosions of the acute septic cases.

The organisms responsible for this condition have been carefully studied. In my series cultures were made in six cases. In three they were negative. In two streptococci were present, in one a staphylococcus. While, as a rule, this condition is much more commonly caused by the streptococcus other organisms may be present. Thus Fraenkel has reported one instance of a pneumococcus endocarditis persisting for nearly six months (Deutsche med. Woch., 1900). Of
sixteen cases of this chronic form, the clinical course of which extended from four to eight months, Harbitz (Deutsche med. Woch., 1899) found pneumococci in four, streptococci in nine, and in eight other micro-organisms. Lenhartz (Deutsche med. Woch., 1901), who has reported sixteen cases with a duration of from three to seven months, found staphylococci and streptococci the common organisms, the pneumococcus once and the gonococcus once. In the majority of cases it seems to be a mild streptococcus infection, possibly by a special form. Possibly in some instances there may be a special resistance on the part of the host, but these are points which must be settled by future investigations. These are cases in which the possibility of successful vaccine treatment should be considered. It was tried in two cases of my series, but in both rather late, and in neither did it seem to have special influence. Horder has treated a case of this chronic type with a vaccine prepared from the patient’s organism, but without success. The results in the acute forms are discussed by him in the Practitioner, May, 1908. Abstracts of the cases are here given.

Case I. J. M., aged 28. I saw this patient with Dr. Mullen of Hamilton, Ontario, in 1888, during my occasional visits to that town, on my way to Toronto. A point of special interest is that the sister of the patient, a trained nurse, had kept a very accurate temperature chart from July 17, 1888, to July 7, 1889, nearly twelve months. Sheets of the four-hourly temperature charts, pinned up on the wall of the bedroom, provided a very remarkable picture.

The patient had had good general health, but at twelve years of age had had rheumatic fever. In February, 1888, she got cold and had pain in the chest. Early in the summer she began to feel badly and had attacks of faintness and the fever came on in the afternoon. When she returned to her home in the first week of July the temperature was as high as 104° in the evening, and she was thought to have typhoid fever. The fever persisted and she had profuse sweats. I saw her in the end of September, and though a systolic murmur was present I did not appreciate that the condition was one of endocarditis. I saw her again at Christmas time, when she seemed very much the same, except that she had been having severe rigors followed by very high fever and profuse sweating. This was the first case in which I noticed the remarkable skin lesions. She had a great many crops which were at first thought to be urticaria. Dr. Mullen’s description is most characteristic: ‘The spots continue to appear at intervals. They are erythematous, some as small as a pea, others a centimetre and a half in diameter with a white point in the centre. They often pass away in a few hours and rarely last longer than the evening of the day on which they appear. They are not numerous. The commonest situation is near the tips of the fingers, which for a short time become swollen.’ These spots were seen more or less throughout the illness, less towards the close than at the early part. At this visit at Christmas we made up our minds that the condition was one of endocarditis. The heart murmur had intensified and there were signs of dilatation of the organ. I saw her again in April, 1889, when there was little or no change, except that she was weaker. She died July 7, 1889, more than thirteen months from the onset of the illness. Dr. Mullen very kindly sent me the heart for dissection. The mitral valves were a little thickened; the orifice admitted two fingers. The margins on the auricular side were covered with large vegetations, many of them extending on to the wall of the left auricle. The chordae tendinae were shortened and thickened and encrusted with vegetations. There were signs of old infarcts in the spleen and kidneys.
CHRONIC INFECTIOUS ENDOCARDITIS

Case II. T. B., aged 43, admitted to the private ward, Johns Hopkins Hospital, March 13, 1892, complaining of weakness and fever. He had had very good health, with the exception of an attack of typhoid fever twenty years previously and chronic malaria when a lad. Early in December, 1901, he began to have loss of appetite, malaise, and fever with enlargement of the spleen. The fever was of an intermittent type, ranging from 102° to 103°. He had occasional sweats. The spleen was enlarged, and very naturally the condition was thought to be malaria. Throughout the winter the temperature persisted and he had cough, and there was a loud systolic murmur detected at the apex. When admitted to hospital the examination was everywhere negative, except in the heart, the impulse of which was in the sixth interspace, three centimetres outside the nipple line. There was a loud systolic murmur of a musical quality heard as far as the angle of the scapula. The sounds at the aortic cartilage were clear. There was no anaemia. The patient was under observation from March 15 to May 10. The temperature rose daily to between 102° and 103°; about four or five o'clock in the afternoon he sweated. He gained slightly in weight. He complained a little of pain on the left side in the splenic region. Throughout May and June the temperature range was from 97° to 103°. In July the fever was less marked. There were several days when the temperature was almost normal. Early in July for the first time the petechiae appeared. At intervals there were very profuse sweats. Throughout August and September there were groups of days in which the temperature was normal or subnormal, sometimes as low as 95°. He died September 16, about ten months from the onset of his illness. The autopsy by Dr. Block showed an extensive mitral disease. The ventricular surfaces of the valves were studded with enormous masses of vegetation. The chordae tendinae were thickened and encrusted with firm yellow outgrowths. The aortic valves and those of the right side were normal. The spleen and kidney showed infarcts.

Case III. Florence M. D., aged 21, seen March 16, 1899. The patient was well and strong as a girl; at seventeen she had severe anaemia. Through the summer she was very well, but tired easily on exertion. In October she began to have feelings of chilliness and irregular fever, and sometimes the joints were a little stiff and sore, but never red. The doctor thought she had slight rheumatic trouble and gave her salicylates, but she never got perfectly well and grew pale and nervous. She had a little cough and it was suggested that she might have tuberculosis. Early in February she had a severe chill. Subsequently she had slight ones at intervals, following which the temperature would rise to 103°. It was then discovered for the first time that she had heart trouble. As she had a cough as well, it was decided to send her South and she was brought to see me on the way through Baltimore.

She was a tall, well-nourished girl, looking a little pale. I was surprised to find the temperature above 103°. The pulse was rapid. The heart's action was violent, the apex beat in the fifth space outside the nipple line. There was a very intense apical systolic murmur, transmitted loudly to the back and also heard in the left sternal margin. There was a soft bruit at the aortic cartilage. There was no swelling of the joints, but on the radial side of the first phalanx of the right index finger were three raised red spots, each about a centimetre in diameter and very tender. They appeared that day, and she stated that they came at various places on her hands and feet and lasted two or three days. The patient was so ill that they were not able to proceed on their journey, and I saw her at intervals for the next six weeks. Symptoms of severe endocarditis increased. Early in April she had left hemiplegia and the spleen enlarged. Numerous crops of the painful spots of the skin came out, four or five at a time, usually about the hands and feet, occasionally in the forearms and legs. She could tell at once when a fresh one started because of a peculiar hot and tingling
sensation. Then it grew red, became swollen and very tender. After lasting from twenty-four to thirty-six hours they gradually faded. They were not specially connected with the tendons. They were in the skin and perhaps a larger number occurred in the palmar surfaces of the hands, particularly about the pads of the fingers. She died April 25, between seven and eight months from the onset of the illness. There was no post mortem.

Case IV. Mary B., aged 19, seen with Dr. J. K. Mitchell of Philadelphia, June 16, 1890. The patient had had rheumatic fever as a child but had got fairly well and strong. Her illness began with chills and fever which were thought to be malarial, but no parasites could be found in her blood. When I saw her there were signs of an old mitral lesion—apex beat outside the nipple, impulse forceable, and a loud systolic murmur propagated to the back. The spleen was enlarged. The temperature ranged from 102° to 103° and she had profuse sweats. Crops of painful spots appeared from time to time upon the hands and feet, and a few on the skin of the flanks. This was the second case in which I had seen them. They were red, raised, from 3 to 5 mm. in diameter, and often very painful. The fever in this case lasted about seven months. Towards the end embolic symptoms occurred, with hemiplegia.

Case V. July 16, 1902, I saw with Dr. Samuel Ward of Albany, Mr. B., of Cincinnati. I had seen Mr. B. about for several days and noticed that he was not looking very well, but was surprised to find on examining him that he had an old heart lesion, well-marked aortic insufficiency, a loud aortic systolic murmur, and a rough murmur of mitral regurgitation. The patient stated that he had been having malarial fever since the end of May. He had been subject to the disease since 1879. In 1884 he had typhoid fever. He had had attacks of arthritis which were called gout, in one of which in 1898 he had some affection of the heart. The attack at the end of May did not yield to the usual remedies of quinine and Warburg’s tincture, and early in June he had a severe chill followed by fever and sweats. He had been up and about, but he had had fever ever since, the temperature occasionally rising to 103°.

From the outset I had no doubt of the nature of the trouble, and had no belief in the malarial theory of the fever, though he came from a malarial district and he had had attacks. Under these circumstances it is always possible to have malarial complications, but there were no crescents in the blood and no pigmented leucocytes. Dr. Ward ascertained that in the second week of April he had bruised his foot on one side, which became red and inflamed, and hot poultices had to be applied. He was in bed for four days. It is quite possible that this may have been a local focus of infection. I saw the patient at intervals with Dr. Ward through August. He had three severe chills. The temperature became more irregular and reached a higher point. He was removed to his home at Cincinnati under the care of Dr. R. W. Stewart. A pure culture of staphylococcus aureus was obtained from the blood. There were no embolic features. He died September 16, 1902, about four months from the onset of the fever.

Case VI. Dr. B. T., aged 33, seen September 25, 1902. Early in May while hard at work he began to have fever. As he had been to the eastern shore of Maryland, it was thought to be malaria. Once or twice a week his temperature would rise to 101° or 102°, sometimes with a chill. He lost in weight, but was able to continue work, and in July while away for a holiday he seemed better, though he still had occasional attacks of fever and sweats. For the previous six weeks he had had daily temperature from 100° to 101° and had sweated at night. Occasionally he would feel very cold and at night when getting into bed the teeth would chatter. He had consulted one or two professional
friends who thought he possibly had chronic malaria, and pulmonary tuberculosis was suggested. He had become a little thinner and paler.

He had been a remarkably healthy man with a very good family history. He never had had rheumatic fever or chorea. He had not had gonorrhea. On close questioning he stated that in April or May, he forgot which, he had a little swelling and tenderness in some of the joints, but it was quite trifling. In 1890 in an examination for Life Insurance Dr. Chew found aortic insufficiency, but he had never had the slightest cardiac inconvenience.

The patient was a very well-built, well-nourished man, looking a little pale. The right wrist-joint was a little tender on pressure, there were no subcutaneous fibroid nodules. There was a well-marked collapsing pulse. The apex beat was outside the nipple line, not forcible. There was a little diffuse pulsation to right of sternum and second interspace. At the apex the heart-sounds were flapping and clear. At the second right intercostal space there was a short, rough systolic, and a well-marked diastolic murmur of slightly wiry quality was heard down the sternum. The spleen was not enlarged. The patellar tendons on either side were tender on pressure. He assured me that the heart features were very much like those which Dr. Chew had noted in 1900, and I felt convinced that the case was one of endocarditis. Throughout October he became worse and was confined to bed. On November 26, when I saw him, he had changed remarkably. He was very pale. Visible pulsation was seen everywhere in the smaller vessels. The spleen was enlarged. The heart had become more dilated, but there was very little change in the murmurs, except that there was now a loud apical systolic. He had had several very painful spots about his fingers and toes, lasting for a day or two. The blood-cultures were negative. I saw him again on December 8, and he was much worse. His feet were oedematous, with petechial spots here and there. He died in January, about eight months from the onset of the fever.

Case VII. Dr. R. H. T. In 1889 and again in 1890 I was consulted by Dr. T. for an old mitral lesion which was associated with slight enlargement of the left ventricle. As a boy he had had a mild attack of rheumatic fever. For the next ten or twelve years I saw Dr. T. at intervals and never found any special change in his heart. He was a man who lived a very active life and was able to do a great deal of work, though with limitations. During the year 1903 he was not very well and throughout February he had an irregular fever, never very high, not often reaching 102°. He felt very well and he had no chills. From early in March until his death, October 3 (eight months), he was confined to bed and was under the care of Dr. H. B. Thomas, to whom I am indebted for the copy of the temperature chart. I saw him at intervals. Briefly summarized, the main features were, first, fever, which rarely rose above 102°. After June it became a little higher and a little more irregular and sometimes reached 103°. In August and September it was lower, and after September 17 until his death it was normal. There were no chills. He had occasional sweats.

The condition of the heart was very interesting. In June and July when I saw him the pulse was good, heart's action regular, and there was very little change in the mitral murmur, which presented practically the same characteristics with which I had been familiar since 1889. He had no cardiac distress, as a rule, but just before he was moved in the summer there were two attacks of what were supposed to be angina.

The only embolic features were two attacks in the vessels of the retina in July. He had no painful spots on the skin, but he had painful fingers. On one of my visits he had a well-marked, localized red spot about three millimetres in extent on the pad of one finger. He died suddenly October 3, after an illness of more than eight months. The post mortem, by Dr. MacCallum, gave the
following: vegetative and ulcerative endocarditis affecting tricuspid, mitral, and aortic valves and wall of left auricle; rupture of chordae tendinae and encrustation with vegetations; embolic occlusion of anterior coronary artery at orifice; embolic necrosis of myocardium, cardiac hypertrophy and dilatation; infarctions of various ages in the spleen and kidney; focal haemorrhages in the intestines; acute splenic tumour; the vegetations everywhere were firm, yellowish white, and from the mitral orifice a great mass projected into the auricle and there were large irregular masses on the aortic valves. The cultures showed a streptococcus.

Case VIII. In November, 1906, I saw with Dr. Fuller England in Winchester Mr. W., aged 36. He had been under the doctor's care many years previously for acute rheumatism which had left his heart damaged. There was a loud mitral systolic, but there was perfect compensation. Through the summer of 1906 he was not very well and complained of shortness of breath, and in July had frequent attacks of shivering. He began to have inability to rest comfortably at night in the recumbent posture. He lost in weight and became anaemic. He had also slight fever. When I saw him he had been for some weeks in a nursing home. His temperature had ranged from 100° to 101.5°. It was very frequently subnormal in the morning. He had profuse sweats. There was some little doubt at first in the diagnosis, as he had tenderness in the region of the spleen and a dilated stomach. There was a history of tuberculosis in his family.

The patient was very pale and looked thin and ill. There were the signs of old mitral disease with moderate hypertrophy of the heart, a loud thrill and a very intense apical systolic murmur. There was slight infiltration of the bases of both lungs. The spleen was enlarged, but at the time of my visit there were no embolic features. Cultures were made from the blood and a streptococcus was obtained. Numerous injections of a polyvalent serum were made which seem to have reduced the fever slightly, and it caused a good deal of drowsiness. For a month before his death there were numerous embolic patches on the skin with purpura. The patient lingered until December 8. The temperature chart is very interesting. The fever was never high, not once passing above 102°. Towards the end, for the month before his death, it was rarely above 100°. Anti-streptococcic serum seemed to have reduced the fever very much.

The entire duration was about six months. A point of interest in the diagnosis is that the case began with symptoms of shivering, sometimes a definite chill, and as he had an enlarged spleen it was suggested at first he had malaria. Then the distension of his stomach and indefinite swelling in the left side of the abdomen aroused the suspicion of cancer. Later, a slight cough, the fever, the infiltration of both bases, and the man's general appearance suggested tuberculosis.

Case IX. May 8, 1907. I saw in Washington, with Dr. Hardin, Dr. J. C., aged 52, well known in connexion with his work on yellow fever. He had had the ordinary diseases of childhood, typhoid fever in 1886, yellow fever in 1900. He passed the physical examination for the Army in 1902. For several years he had known that there was a lesion of the mitral valve which was detected in a Life Insurance examination. On the evening of February 18 he felt chilly and did not rest well. The next forty-eight hours he was depressed, had cough, and his temperature rose to 102-8°. From that time until the day I saw him he had had regular fever, rarely reaching above 102-5°. He had sweats, more particularly in the early morning hours. As he had a little cough and had lost in weight, it was very natural that tuberculosis was suspected. Dr. Ruffin, Dr. Thayer, Dr. Barker, and others saw him and it did
not seem possible to arrive at a satisfactory diagnosis, as the physical signs were so slight and there was nothing but the fever.

He looked very well, not specially changed in appearance since I had last seen him. There was no alteration in the skin. I made a careful examination, which was negative everywhere except the heart. There was slight enlargement of the left ventricle and there was an apical systolic murmur propagated beyond the mid axilla, and there was a loud pulmonic second sound. His physicians could not determine that there had been any special change in the condition of the heart or in the murmur. He complained of very peculiar spots on his skin, chiefly about the arms and fingers, sometimes on the toes and feet. They came in crops, lasting from one to five days. Each spot was raised, a little red, and felt like a localized infiltration of the skin. They were chiefly on the fingers and on the palms of the hands, sometimes along the forearm. When I saw him, two or three were just disappearing. I did not think that there was any question as to the nature of the case. The mitral lesion, the irregular, persistent fever, and the spots suggested strongly the chronic septic endocarditis. Throughout the summer the condition remained practically the same. The fever persisted, the oscillations of temperature a little greater; he continued to have occasional eruptions of the spots on his fingers, the crops lasting for two or three days. There were no other signs, no audible change in the heart lesion. On September 15, 1907, he suddenly lost power of speech and got right hemiplegia, and he died in fourteen hours. About fifteen blood cultures were taken, all negative. The duration of this case was exactly seven months.

Case X. January 13, 1908. I saw, with Dr. Ward and Dr. Powel of Southampton, Alice A., aged 20. Five years previously she had rheumatic fever, a severe attack with cardiac complications and very slow recovery. Twelve years previously she had a very deep-seated gland removed from the right side of the neck. It was probably tuberculous. The hypoglossal nerve was involved and it had left her with atrophy of one side of the tongue. The previous winter she 'came out' and had a very busy season. She danced and skated and seemed very well. In February she had tonsillitis, not a very severe attack, but she had not been quite well since. She was pale and was often weak and nervous. This was attributed by her mother and the doctor to a love affair which had worried her. Some weeks later she began to have a slight fever and the doctor at first suspected that she might have tuberculosis, but the lungs were negative. Then through the summer she was not well, and on and off had febrile attacks, which increased in September. In October it was thought best that she and her mother should go abroad and spend the winter. On the steamer she got very much worse and it was found she had a temperature of 103°. She landed about the end of October and had been in a nursing home ever since. The symptoms had been—(1) Fever, which had ranged from 100° to 102°, only within the past week had it crossed the 103° limit; (2) she had had at times drenching sweats so that the bed-clothes had had to be changed; (3) she had lately had great irritability of the stomach, constant nausea; (4) on several occasions on the tips of the fingers there had appeared red spots, exceedingly tender swellings, looking very angry and almost, as Dr. Ward said, as though they would suppurate and then they gradually subsided.

There was no pain and no distress about the heart; the urine was clear; the sputum had been examined, as, of course, tuberculosis was at first suspected. She had wasted a good deal. I found a girl looking a little pale, but not so thin in the face as in the body. There was marked general anaemia of the skin, much more so than the face would indicate. The pulse was small, about 110. There were no petechiae. The heart was moderately enlarged, the impulse forcible, wavy, and extended from the second interspace to the fifth, an inch
outside nipple line. There was a very intense mitral systolic heard everywhere over the heart, loudly up the left sternal margin and transmitted to the spine. Though rough and harsh, Dr. Ward did not think it had specially changed in character. The second sound was everywhere clear.

Within three or four days there had been a slight infiltration at the lower lobe of the left lung. The percussion note was impaired and the breath sounds tubular. The apices and other parts were clear. The abdomen was a little swollen, nowhere tender, slightly tumid in the epigastric region; the liver was not enlarged, the edge of the spleen only just palpable. She died about seven months from the onset of the fever. It is quite possible that the onset of the attack may have been in February, when she had tonsilitis, in which case the duration was over a year.
Tuberculosis Exhibition & Conferences
Oxford, Nov. 8–13, 1909

What the Public can do in the Fight Against Tuberculosis

BY

THE REGIUS PROFESSOR OF MEDICINE

OXFORD: PRINTED FOR PRIVATE CIRCULATION
BY HORACE HART
WHAT THE PUBLIC CAN DO IN THE FIGHT AGAINST TUBERCULOSIS

That was a very happy remark of Tennyson, 'knowledge grows but wisdom lingers.' After all, the greatest difficulty in life is to make knowledge effective, to convert it into practical wisdom. We often confuse the two, thinking they are identical. But it was another poet—Cowper—who said that far from being one they often have no connexion whatever. Now, wisdom is simply knowledge made efficient; and you are asked in Oxfordshire to join in a campaign of efficiency, a campaign of education, against one of the most dreaded foes of the race.

There is a grisly troop of infections that we all know only too well, called the fevers, with which two of the greatest illustrations of human efficiency may be said to be connected; for if you look over the record of human achievement there are not more than four or five which can be placed in the same category with antisepsis or asepsis and preventive medicine—the two most important victories of science in the last half century. All know what Lister has done in introducing cleanliness in wounds and operations, what we call asepsis, and how it has revolutionized the practice of our hospitals. Of the other victory, that of preventive medicine, a special glory of England—let me give one example. Until about the middle of the last century typhus fever ravaged the country. Even in the decade from 1871 to 1880 there were 7,495 deaths from this disease in Ireland alone; but in 1905 there were only 68! Of this victory many of you
are not aware. You do not remember it, but perhaps your fathers have told of the terrible days in the forties, when the awful plague of typhus almost decimated Ireland. If there is one record of which the medical profession may be proud, it is that of their battle with typhus fever. Let me illustrate it by one fact. In 1847—the year of the great epidemic—one-fifteenth of the entire medical community of Ireland died. According to Stokes's investigation on causes of mortality among 743 physicians in Ireland, the deaths of 331 were caused by typhus fever—nearly 45 per cent. Not only has this disease disappeared, but enteric fever is gradually going, and within the next twenty-five years a case will be as rare as is now one of typhus. And in other directions this victory of human efficiency may be illustrated. I will mention another disease, the greatest, perhaps, that the white man has had to contend with—namely, malaria. The victory over it is to-day practically complete, and we may say that the solution of the white man's position in the tropics has been solved by the scientific investigations of Laveran and Ross and of others.

A great scourge remains—'the white plague,' as Oliver Wendell Holmes calls it—a disease which kills, it is estimated, at least a million annually—the terrible malady tuberculosis, which this exhibition serves to illustrate. This, too, is a disease upon which we may entertain a full measure of optimism: just as full, indeed, as about enteric fever. In the past twenty-five years there has been an extraordinary increase in our knowledge relating to it. We know eight things about the disease.

In the first place, we know the germ—the cause. We can pick it out as easily as you pick out a beech-nut from other nuts. Give to any professor of Pathology a group of these germs and he will pick out that of tuberculosis as a farmer will sort oats from wheat.
Secondly, we know whence it comes—its two great sources, the sputum of persons affected with consumption, and the milk of tuberculous cows.

Thirdly, we know how it gets into the body—through the breath and swallowed with the food.

Fourthly, we know what happens to the germ when it enters the body. Like seed sown in any other way, it illustrates the old story—the parable of the sower. Some of the seed, you remember, fell by the wayside, and the birds of the air picked it up. Fortunately, a great many of the germs of tuberculosis fall by the wayside and never get into us. Some of the seed falls on stony ground, and it does not flourish because of the lack of depth of earth. And just so, into a certain number of us these seeds of tuberculosis enter; but fortunately we are of rocky constitutions, and they do not develop. And some of the seed fell among thorns, and the thorns sprang up and choked it. Now, it is a very fortunate thing for some of us that we have thorny constitutions, and when the germs get in there may be a growth for a short time, and they may thrive and develop, but in a little while thorns spring up. In other words, the constitutional resistance is so great that the germs are killed, and the patient is cured. But, alas! too much, indeed, falls on good ground, and you know then what happens. It brings forth a hundredfold, and tuberculosis in some form results.

Fifthly, we know how the good ground is prepared. It is well to remember that the seed is not everything—the seed is everywhere—it is the soil that is important. Now, how do we prepare the ground for the seed that it may grow to tuberculosis? There are the three ‘bads’—bad food, leading to ill-nutrition, which is the great preparation of the ground; bad air in wretched habitations and miserable cabins; and bad drink, alcohol. Those are
Sixthly, we have learned how to recognize the disease. Upon this point I need not enlarge further than to say that we now see the cases earlier, and are able to advise treatment in the curable stage.

Seventhly, we have learned how successfully to prevent it. And it seems so easy—first by the destruction of the germ, and secondly by making the soil unsuitable.

Then, eighthly, we have learned how to cure the disease. The all-important matter is to get the cases early.

And, lastly, to the great consolation of the public, we know that the disease itself is not directly hereditary.

Within half a century the death-rate from tuberculosis in England and Wales has fallen from 3.3 per thousand living to 1.6, and yet in 1907 56,101 persons died of the disease. In Oxfordshire there died 255, which means that there are about 2,500 cases in the county.

What can the public do to still further reduce the mortality from this disease, and hasten the day, which is well within the vision of sanitary science, when there will be no more tuberculosis?

First, help in a campaign of education. This is being undertaken by the National Association for the Prevention of Tuberculosis, and the Exhibition to be held in the Schools for the week beginning November 8 will do much to teach just what the people should know about the disease. Through the press, the pulpit, by private effort, by lectures and pamphlets, a campaign of incessant activity must be waged.
FIGHT AGAINST TUBERCULOSIS

All who can should join the National Association, 20 Hanover Square, London. Annual subscription, 5s.

Secondly, notification of all cases to the Health Authorities. The only possible way to get at a disease is to know where it is, and this may be done without personal inconvenience or discomfort to anybody.

Thirdly, in each county provision should be made for the care of advanced cases of tuberculosis among the poor.

Fourthly, special dispensaries for tuberculosis should be established. It is well known that a great many early cases do perfectly well in their own homes, if they are taught how to live properly. The questions as to how to provide accommodation for the tuberculous poor will be discussed at the Public Meeting by Drs. Newsholme and Phillip, two of the leading authorities on this subject.

Tuberculous patients should not be looked upon as social outcasts, to their own great distress and to the alarm of their families. For this feeling there is no justification. So long as a patient with tuberculosis takes the proper precautions there is no risk in close contact. If you are afraid of taking consumption, and desire a place of safety free from the germs of the disease, live in a first-class sanatorium, where fewer germs are scattered about than in the cities.

Finally, in this crusade against tuberculosis there are two indispensable factors, enthusiasm for the work, which should not be hard to maintain, since we are everywhere fighting a winning battle; and the second essential factor is perseverance. It is not a year’s work, nor five years’ work; a decade will make a great difference; a generation should see a reduction in the mortality of 50 per cent., and your children and grand-children should be able to point at a victory over tuberculosis as memorable as that which our fathers have won against typhus and typhoid fevers.
OLD AND NEW.


BY WILLIAM OSLER.

Regius Professor of Medicine, Oxford.

In the collegiate churches and cathedrals of England before the sermon, the preacher, in what is known as the "bidding prayer," asks the people, often in very quaint phraseology, to pray, among other things for the estates of the realm, and then he offers a special prayer of thanks for the
liberality of founders and benefactors, "men in their generation famous and in ours never to be forgotten." At Oxford in the University church every Sunday in term it is interesting to hear recalled the memory of the Duke Humphrey, the Lady Margaret and other worthies. And whoever the preacher may be he finally mentions the founders and famous men of his particular college. Following this happy custom I would ask you in the first place to be profoundly thankful to the men of 1799 who gave this Faculty to the country and who made this day possible. Out of the speechless years let us recall their good deeds, and I would ask that this occasion be blessed by invoking their memory. Part at least of the success of this Faculty may be attributed to the pious care with which their example has been cherished. Long before I knew this city, Dr. Quinan's History of the Medical Profession of the State of Maryland was familiar to me; and we have to thank our indefatigable colleague, Dr. Cordell, in whose Annals (by far the most complete history of the profession of any State in the Union) we can read of the planting of the acorn, of the day of small things in which we had our origin. As Emerson says, "we cannot over-state our debt to the past." The plans, the money, the anxious thought, the long hours spent in meetings, the labors of the various committees represent but the completion of a great work, the foundations of which were laid in other generations. All the same let us be profoundly grateful to the Building, Finance and Arrangement Committees, and to our Presidents of the past five years—Dr. Brush, Dr. Earle, Dr. Woods, Dr. C. O'Donovan and Dr. Goldsborough for their extraordinary efforts. I hope somewhere in this building a brass tablet will permanently record their names.

It would take a long bidding prayer to express the thanks of an academic wanderer like myself, who has had so much given to him in so many places. In deeds rather than in words I have tried to be thankful, but it is hard to find gratitude enough to go round. My heart resembles one of those old manuscripts, the parchment of which has been used over and over again and while it looks as if there was only one writing, the expert is able to decipher beneath the palimpsest, as it is called. It is hard on the parchment and it is not always easy to decipher the writing, but the characters traced by my associations in this city must ever remain fresh and clear. A unique opportunity indeed was the founding of the Johns Hopkins Hospital. That those of us entrusted with its organization should have won your esteem and should have been adopted by the city and by the State is by far the best testimonial of our character and of our work. Considering the circumstances it might easily have been otherwise. But the success of that experiment must not be attributed altogether to the professional side. Such men as Francis T. King, Judge Dobbin, Dr.
Carey Thomas and Francis White were equal to the occasion and we owe much to their wisdom and good management. But to one man more than all others I would like to express my personal thanks—Daniel C. Gilman, whose name will be forever associated with fundamental reforms in American educational methods. And at the Johns Hopkins Hospital we shall always cherish his memory for the work done in connection with its organization, and for his unfailing interest in the work of the medical school. When I heard of his happy death the words of Elisha rose to my lips, "My father, my father! the chariot of Israel and the horsemen thereof." It is one of my deep regrets to miss on this occasion the greetings of a man whose encouragement and support meant so much in my life here.

I would recall with gratitude the kind reception given to me and to my colleagues by the older men of this Faculty, to whose genial influence it was that we were soon made its devoted children. This might indeed have been no easy matter had not the way been prepared by a man whose Galenic touch has ever been an "open sesame." Better men than Frank Donaldson, Christopher Johnson, Allan Smith, George Miltenberger, Henry P. C. Wilson, John Van Bibber, John Morris, Aaron Friedenwald, Francis T. Miles and A. B. Arnold never served the State. And there were the younger generation with whom the work of the Faculty brought me into close contact. Brune, cut off so prematurely; Michel, devoted to its interests; Rohé, so versatile and energetic; Chatard, whose family in this city forms a sort of hereditary Æscupalian guild; Atkinson, type of the ideal physician; George Preston, always faithful and hopeful, and the lovable Ridge Trimble. How glad would they have been to see this day.

The living well know how deeply I appreciate your friendship of which you have given this new and enduring testimony. It does not often happen that a man is called upon to participate in the dedication of a Hall to himself. More often it is a posthumous honor for which the thanks are tendered by relatives or friends. It is difficult for me to express the deep gratitude I feel for this singular mark of affection on your part. The distinction is not a little enhanced by the association with corresponding halls in other cities of the names of some of the most distinguished of American physicians, Oliver Wendell Holmes in Boston, David Hossack in New York, and S. Weir Mitchell in Philadelphia. If by any process from the large lump of your gracious kindness the grains of merit on my part could be extracted they would be found to consist of that all precious material faith—the pure gold of faith which I always had in the future of the Faculty. Just twenty years ago I joined this society and began my professional life here by giving the Annual Oration. Its history and tradition appealed to me strongly and I soon began to find my way to the old quarters under the Historical Society’s Hall. Dismal, dark and dusty
yet the rooms contained much of interest and there were always a few choice spirits to be found, most often our learned historian, then the librarian, George Preston, Bond, Brune and others.

We liked the old place with all its dust and dirt, and it represented much solid effort on the part of better men than ourselves. For years there had been a strongly expressed wish to move to larger quarters, and with many misgivings and by a not very large majority it was decided in 1895 to buy the house, 847 N. Eutaw Street. Our optimistic Treasurer, Dr. Ashby, really made us move. Knowing frenzied finance thoroughly and running the Faculty on credit, yet he inspired faith in his colleagues who were financial babies in his hands. No one knows how he succeeded in paying for No. 847 and for the Hall we there built. We were always hard up, always spending more than our income and Dr. Ashby had to meet our ever-increasing extravagances, but you all know how well it was done, and how in a few years, somehow, the house and the Hall were paid for. With our increasing library it was soon found that we needed skilled assistance and one extravagance, as some thought, has proved a great blessing. In securing a well-trained librarian, Miss Noyes, to take charge of our books we did one of the best strokes of business ever done for the Faculty, and it appeals to one’s sense of the fitness of things that after years of labor in very cramped surroundings she should now have library accommodations equal to the best in the country. How much the success of this meeting is due to the efforts of Miss Noyes and her staff the members of the various committees can testify.

It is an immense gratification to think that my name will remain permanently associated with this Faculty. Among many kind tributes for which I have to thank my friends none has ever touched me so closely. As a boy some of my happiest recollections, in the early sixties, are of school days in a small Canadian town, where in the summer evenings we paraded the streets, company formation, with a bonnie blue flag bearing a single star and singing “Maryland, my Maryland.” Little then—or later—did I dream that my affiliation would be so close with this State, and that with it, through your gracious act today, my name may find its most enduring remembrance. These festivals illustrate how quickly the memory of a name perishes. In how many minds did the mention of David Hosack arouse a thrill of remembrance? His works—and they were good ones—have perished, and his most enduring association is with the Hall of the Academy of Medicine which bears his name—and this is likely to be my fate. We can imagine a conversation in a library—2009—between two assistants wearily sorting a pile of second-hand books just sent in. “What are we to do with all this old rubbish by a man named Osler? He must have had very little to do to spoil so much paper. Where did he live any
way?"  "Oh, I don't know. Baltimore, I think. Anyhow they have a Hall there that bears his name."

And now that you see fulfilled the desire of your eyes in the possession of the beautiful new building, what is the special message of such an occasion? A double one—to the profession at large and to ourselves in particular. This is the home of the physicians of this State, with all the advantages and association which we connect with that word. The Faculty, as has already been remarked upon, represents a unique type of organization in this country. State societies exist everywhere, state examining boards are universal, and libraries are multiplying rapidly, but only in this State are the three so combined as to give to the profession its proper solidarity. This means much more than is represented by the Academy of Medicine, New York, the Library Association of Boston and the College of Physicians, Philadelphia, which are local civic institutions. Here the organized profession of the entire State is in control. It is to be hoped that the good example of Maryland may be followed, and that other state medical societies may secure in each capital a building for the accommodation of the Examining Board, the State society and a library. The leaven of progress and of unity has been working and the reorganization of the American Medical Association has aroused great activity in the State and county societies. And to the energy and business skill of one man may be attributed much of the phenomenal success of late years of the American Association and its Journal. Dr. Simmons has done a work of which every member of the profession should be proud. In part this building may be attributed to the new spirit and we may hope to see before long in Trenton, Richmond, Harrisburg, Albany and other capitals homes on similar lines. No one can have participated as I did in the work of this society without feeling that it is one of the most potent factors for good in the city and State. The annual and semi-annual meetings, benefiting alike hearts and heads, have brought us together in friendly rivalry, and have strengthened the bonds of good fellowship. All crave companionship and encouragement, particularly when young, and these gatherings help to counteract the sterilizing influence of that isolation in which so many men have to work. Look about and ask who are the happiest men in our ranks! Those who do not neglect the gathering of themselves together at our meetings. Who are the busiest? Those who are the most faithful in the discharge of their duties to the society. Who are the most prosperous? Those who have given to it much of their time and substance. I could enumerate other benefits, but we are fortunate to have this year as our President one of those typical products of the Faculty, a man whose family has had affiliation with it since the foundation, and who represents in his character the highest type of physician and the best stamp of citizen-
ship. It is one of the great merits of this society that it holds up to emula-
tion and delights to honor men of this stamp, who have loyally maintained
our best traditions while living the exacting lives of general practitioners.

This Faculty represents an organic pattern in which the old and the new
form the warp and the woof of the life of the profession of this State. Father
Time, who plies the shuttle to and fro, has inserted webs of innovation as
in 1895 and 1909, but the pattern remains essentially the same. We,
the members, pass on, the Faculty endures, the lives which make it die,
but its life survives. The past has a charm and a use not always evident to
ordinary eyes. In the orderly evolution of nature the old and the new are
never dissociated. Of this our bodies offer many illustrations. In the
very temple of the mind itself, stowed away in its depths, lies the mysterious
pineal gland, the seat of the soul, said the old philosophers; but to him who
can read, here, in the presence of the latest and most complicated bit of
nature's mechanism is a remnant of the very old, of a third eye which was
of use to an early vertebrate ancestor as he flopped about in the primeval
marshes. Why should it be there? Of what use? Why should we be
full of these vestiges, useless, often harmful? It is part of the purpose of
life ever in this way to blend the old with the new. Habits, customs,
opinions, beliefs influence us out of the past, sometimes helpfully, at
others hurtfully. For example, in any medical organization on such an
occasion as the present, when a device was needed for the beautiful medal
which has been designed by Max Broedel, it was not possible to use any-
thing else but the Æsculopian serpent, an emblem which speaks to us of
a long past, when we took our origin in the most gracious and useful of
the Grecian cults. Every prescription we write tells of the days when the
Arabian was our master, when Avicenni swayed the profession to a unit.
And still more does our every day language call back theories and opinions
which have long since passed into oblivion and are as useless as the pineal
gland or the vermiform appendix.

The secret of success in an institution of this kind is to blend the old
with the new, the past with the present in due proportion, and it is not
difficult if we follow Emerson's counsel: "We cannot overstate," he says,
"our debt to the past, but the moment has the supreme claim; the sole
terms on which the past can become ours are its subordination to the
present." Let me indicate very briefly how the old and the new may be
interwoven in the life of this Faculty.

The written records of the profession of the State will be found on our
shelves. Let it be known that collections of letters and of documents of
all sorts will here be housed in a fireproof building, catalogued bound and
indexed, and there will soon be additions of value to the interesting papers
already in our possession. The Nathan Smith letters should be here on
deposit with the story of that noble man’s work at Dartmouth and at Yale. Perhaps it might be more fitting to see them in the library of one or other of those institutions, but for three generations the family has been intimately associated with this Faculty and with the life of this State. Let people know that we are not greedy in this matter, but only anxious that such priceless treasures should be on deposit where they are absolutely safe. From these records, the private letters of the old doctors written to their friends, patients and relatives, we get a vivid picture of the past and are enabled to reconstruct their lives and their times. Throughout the State there are scores of documents which it is to be hoped will gradually find their way to our archives. In each generation some one man knows the value of such documents and is willing to collect and classify them. It makes one sad to think what we missed in American medical history when the Toner collection slipped out of our hands, and I am glad to think an accident of that sort could never happen again. A good start has been made and you will see treasures which the care of former librarians has preserved. The first medical diploma issued in America, to Dr. John Archer, a Maryland man, hangs on the wall, and a picture of his old Medical Hall, a sort of private cross-roads medical school. I would urge upon the Library Committee the importance of fostering this side of its work. Nowadays the arrangements for binding, cataloguing, and displaying letters and manuscripts have reached a high grade of perfection and the knowledge that there is here a fireproof building should attract many important documents relating to the profession. The Library has more than doubled since our removal to 847 N. Eutaw Street, and now contains 17,533 volumes and 10,869 monographs and reprints. A great majority of these additions are new, the books having been bought by the Frick Fund, and by The Book and Journal Club.

Nothing neutralizes the new more effectively than the presence of old books. An Aldine here and there, a few fine parchment-bound Juntas, an Oporinus or a Froben in the original boards and stamped pigskin, a fine Paris Stephanus, an Elzevir or a Plantin give tone to the shelves, just as do the Stuarts and Copleys to the dining-room in an old mansion. The difficulty is that for library purposes nearly all books are old. Nothing ages so quickly as a book—no life so short. Often still-born from the press, not one in ten thousand has the life of its generation, not one in a hundred thousand lives out the allotted years of its author; one or two in each generation are immortal, having in them that potency of life of which Milton speaks. On what principle then should a library of this character select old books? For reading purposes a decade will age every book issued from the press this year; that, no doubt, is the hidden meaning of the old proverb about every book having its fate. Under such circumstances
deliberately to buy old books may seem a superfluity of naughtiness on the part of a librarian. There is an immense old literature which it is not worth while to seek. In our large collections miles, literally miles, of shelves are filled with books as dry as the bones in the catacombs. Some one library in the country must have all the books, and in the Surgeon-General's library there is a collection which aims at completeness. If you wish to see all the Junta editions of Galen, go there; if you wish to see a pamphlet by John Smith, of New Orleans, on the treatment of yellow fever by the application of sulphur to the soles of the feet, go there; all the odd and out of the way literature may there be consulted, and the student who wishes to know the story of Valentine Greatrakes and of Perkins Tractors has only to go to Washington. We cannot be too grateful to the men who have established this great national institution, one of the most successful of modern libraries—to Surgeon-General W. A. Hammond, the founder, to Dr. Billings, the maker, to successive Surgeons-General, the promoters, to Dr. Billings and to Dr. Fletcher for the Index Catalogue, one of the most important works on bibliography ever undertaken. To the national library then may be left the duty of indiscriminate purchase, on the principle that it should have everything that any one can possibly ask for. The local libraries have a much more limited, but not less interesting field to cultivate. In the first place all the medical literature of the State should be here—the Journals, the Reports, the Transactions and the editions of all the books written by men who have been connected with the State. By no means an easy task; it takes years of anxious hunting to fill gaps. This work generally falls to the lot of some enthusiast on the Library Committee. Fortunately keen eyes for many years looked out for these items and this part of our collection is on a fair way to completion. Then there is a group of books which may be called American medical classics, the more notable contributions to medicine and surgery made in the eighteenth and nineteenth centuries; Morgan's Essay, which led to the foundation of the University of Pennsylvania; Jones' Manual of Military Surgery; Nathan Smith on Typhus Fever—works of this sort should be on our shelves. Thirdly, the bibliography of the more distinguished American physicians and surgeons should be made as complete as possible. Of the writings of some forty or fifty men every scrap deserves to be sought for—men of the stamp of Nathan and Nathan R. Smith, the Bigelows, Samuel D. Gross, Austin Flint, Henry I. Bowditch, W. A. Gerran, Daniel Drake, and Oliver Wendell Holmes.

And, lastly, a library with any ambition will wish to have the original editions of the great medical books of the world. Care must be exercised not to allow a library to be made the dumping ground for all the old quartos and folios of the seventeenth and eighteenth centuries. There are plenty
of very handsome volumes not worthy of shelf room. This part of the work takes time and money and more of both than are usually at the disposal of the Library Committee. In every city of this size there is usually a physician with the happy combination of literary tastes, leisure and a long purse—to whom should be entrusted this part of the literary work. With only the taste and the knowledge he can use his colleagues’ purses and induce Dr. Blank to give an original Harvey de motu cordis or a Jenner pamphlet or an early Mundinus. The fine old books on exhibition show that much has been done already in this direction and I have no doubt that within a few years this department will grow rapidly. To mark this happy occasion, and to rejoice Miss Noyes’ heart I could not resist buying in Rome the original edition of Vesalius, 1543—one of the two medical works which has most powerfully influenced modern medicine. Special collections are of exceptional interest and we are fortunate to have the library of Dr. Upton Scott, our first President, of Dr. Charles Frick and a unique group of 120 Edinburgh theses by American students of the colonial and early 19th century days.

With manuscripts and books, pictures are naturally associated, and our gallery, old and new, grows rapidly. You remember how the centennial celebration brought out a group of fine portraits and we benefited in getting the Baker, the Buckler, Miltenberger, Wilson, Frick, Arnold, Friedenwald, Archer, Stokes, N. R. Smith, Atkinson, Rohé, Preston and other pictures. There are many others in the State and city whose ultimate destiny should be these walls—if not the original, good copies supplied by our families are very welcome. This is our Pantheon in which there should be a memorial of some sort to every distinguished Old Maryland physician. When we look about and see what has been done since the removal to Eutaw Street the Faculty may well feel encouraged. One of the most fortunate events of the past fifteen years was the memorial room and library given by Mr. W. F. Frick in memory of his brother Charles, a most distinguished physician of this city and a devoted member of the Faculty. To the Frick family we are under a deep debt; not only has the special library been an inestimable boon, as with the money annually given a large proportion of the new books have been bought, but it has been also a happy example followed in the new building and there rooms are devoted to the memory of Dr. Aaron Friedenwald and Dr. Samuel Baker. In what happier way could these families have paid for themselves and for us the debt of the past?

But let us not forget that the moment, the Now, the Present has, as Emerson says, the supreme claim to which the Past must be subordinate. The most important single function of this corporation is educational. This is really a post-graduate college of which the members remain students.
I am delighted to see that a room has been provided, through the liberality of Dr. Hugh Young, in which members may do their own laboratory work. This is a feature in the life of the Faculty which should develop and be most helpful. It should be the ambition of every young man as soon as possible after registration, to join the Faculty. Until within the fellowship he can scarcely be called a member of the guild. Take the group which has joined recently, bringing in youth and enthusiasm; year by year they will grow into the life of the Faculty and upon them time will stamp the slow insensible changes which hall-mark the generations, but which shade so gradually that there is no sharp cleavage, but the seniors and the juniors, the new and the old are blended into one homogeneous body.

By far the most important channel through which the new pours in to mingle with the old is the current literature of all lands with which our shelves groan. An important function of this Faculty is to furnish first-hand information from every medical center in the world, and this it does through journals, transactions and reports. A library such as this has to cater to three groups—the laboratory workers, the specialists, the general practitioners. and it has become increasingly difficult to meet their demands. In a city with large laboratories there should be close cooperation, so that expensive journals are not duplicated, and workers should know just where to look for sets of rare proceedings or transactions. In the present congested condition of medical literature only Washington can hope for completeness and the laboratory men and specialists must not complain at the large size of the lacunae on our shelves. It is not so difficult to keep up with the demands of the man in active practice, who wants the current journals, the new editions, the monographs and the systems, and it is upon these the main energies of the library must be spent, but it passes the capacity of all but a few great libraries to deal with the perfect avalanche of special literature at the present day. In certain directions the Index Medicus is an immense help and meets a pressing demand, but we have reached the stage when every tenth year, or indeed every fifth year, stock should be taken by some international coöperative organization which should deal with the large problems of analyzing the data pouring in from every quarter, upon every possible subject.

During the next century the new and the old will fight it out in these rooms in keen discussions, just as they have done since the days of Hippocrates. Time and again it will happen that the new will not be true and the true will not be new. The yesterday is forever being brought to trial at the bar of today and the verdict is rarely unanimous, often it is wisely a case of judgment deferred. Look over the questions discussed twenty years ago—some are dead, judgment gone by default; some are still pend-
ing; a few are settled, or we think they are; many seem antiquated. Turn to the programme of the present meeting and we find new problems propounded, sometimes in language which requires interpretation, old problems that the present seems never able to get rid of, and in others we recognize old friends in disguise. How interesting to look back over the Faculty attitude towards the subject of tuberculosis, with the modern history with which it is coeval! Brought up in the hazy pre-tuberculosis days, what did Upton Scott, our first President, think of the young men fresh from Paris, and their demonstrations of Laennec's views? A generation or two later Power and Buckler and Charles Frick were propounding Louis. Then in the seventies the heresies of Niemeyer and Virchow were discussed by Donaldson, Chew, W. T. Howard and others. How the hosts of the past fought against the bacillus when it was announced, and did not prevail; how the public was finally awakened; how tuberculosis was put in the list of preventable and curable diseases that are questions of recent history. In this quintette of problems in but one disease, which it has taken a century to solve, the new and the old are curiously blended again; they are not in clear-cut strata. The idea of contagion in tuberculosis goes back to Fracastorius and even earlier, while you will find in Celsus excellent direction for the fresh-air cure combined with a milk diet. To meet the educational side of the Faculty the entire organization has been changed and the special sections and the publication of its own journal are important new departures.

Amid these hopeful and splendid surroundings, which cannot but influence it profoundly, the old organization enters a new era. Do not forget that it takes some time for the domestic machinery to get into good working order, but the rapidity with which the rooms have been prepared, the books moved and the whole place made comfortable speaks for the great efficiency of the staff.

In one of his Hibbert lectures last year at Oxford, William James made a remark that clung—"We live forward, we understand backwards. The philosophers tell us that there is no present, no now—the fleeting moment was as we try to catch it." In the opening of this new building we have today made a happy addition to a happy past. Towards this day we have all lived forward, and the future should still be in our thoughts. This old Faculty must continue to be our rallying ground—once inside its portals, schools, colleges, hospitals, societies, all other affiliations are absorbed in something vastly greater, which includes all and claims from all devoted service, the united profession of the state. The progressive evolution of such an organization demands the loyal support of every member. In all societies differences of opinion are not only inevitable but salutary. From time to time many of you will not approve the policy of
the officers of the day—do not let your annoyance dim your loyalty. Professional politics have never been, and I hope may never be, a marked feature of this body, but whenever any of you feel sore at the action of those in charge let me ask you to find a cure in devotion to the scientific work of the sections or to the library.

The best of all old things about this Faculty is that subtle force by which the men of the past influence us today—not by tradition, by the spoken word, handed on from father to son, teacher to pupil; not by the written record in which one generation reads of the deeds of another, but by that intangible, mysterious force hard to define but best expressed in the words _noblesse oblige_—that obligation to act in a certain way, to foster certain habits, to conform to certain unwritten laws—a sacred obligation, as potent now as in the time of Hippocrates, the alchemy of which at once turns to gold whatever may be leaden in the new of today.

Friday, May 14, was devoted mainly to scientific sessions of the Faculty, many interesting and instructive papers being read. In the evening the Annual Dinner was served in Osler Hall, about 150 members being seated. Dr. Goldsborough presided and Dr. Robert W. Johnson acted as Toastmaster. After-dinner speeches were made by Mayor Mahool, Hon. Charles J. Bonaparte, and Drs. William H. Welch, Thomas A. Ashby and Charles O'Donovan.

On Saturday, May 15, a special train carried the members of the Faculty and state officials to Sabillasville to participate in the dedication of the new State Sanatorium for Tuberculosis. The dedicatory address was delivered by United States Senator John Walter Smith. On returning, in the evening the closing exercises of the annual meeting of the Faculty were held, the principal business being the final reports of the Building Committee, presented by Drs. Brush and Linthicum.
THE MEDICAL LIBRARY
IN POST-GRADUATE WORK.

An Address delivered at the Inaugural Meeting of the Medical Library Association held at Belfast, July 28th, 1909.

BY
WILLIAM OSLER, M.D., F.R.S.,
President of the Medical Library Association.


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Remarks
ON
THE MEDICAL LIBRARY IN POST-
GRADUATE WORK.*

BY
WILLIAM OSLER, M.D., F.R.S.,
PRESIDENT OF THE MEDICAL LIBRARY ASSOCIATION.

With collectivism the order of the day it is very natural
that those interested should associate themselves in an
organization which has for its object the welfare of the
Medical Library. As stated in the circular, the Provisional
Committee has given the new society a wide basis. The
objects are:

(a) To bring together those engaged in or interested in
medical libraries and medical literature, and for the
discussion of matters associated with their fostering
and care;
(b) To maintain an exchange for the distribution of duplicate
books and periodicals;
(c) To increase the facilities for reference work;
(d) To encourage the study of the history of medicine;
(e) To issue publications dealing with medical library work;
(f) To form a library union amongst those of the medical
libraries between which the exchange of books can be
arranged—

all unexceptionable objects, and with the additional merit
of being within reach of accomplishment.

Let me say at the outset that this is not to be simply a
society for those whose work is more or less officially con-
cerned with libraries, but it is for all interested in the
book as a living factor in the education of the members of
a learned and consequently of a very bookish profession.
Whether the British doctor has been a better book-lover or
book-maker is an open question, but from the first Oxford
movements in the thirteenth and in the early fifteenth
centuries we find him ever in the ranks of the keenest
bibliophiles. He has never been a great student of the
book as such, and it is strange not to find in the long line
of splendid bibliographers, from the lovable Conrad

* Delivered at the inaugural meeting of the Medical Library Associa-
tion, held at Belfast, July 28th, 1909.
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Gesner to the encyclopaedic Billings, an Englishman of the first rank. I do not forget the useful books of Douglas, of Young, and of Forbes, nor the Rabelaisian (in the mirth-loving sense) two-letter bibliography of Atkinson; but they are feeble efforts in comparison with the works of our foreign and American brethren. But the Englishman has made up by being a great book-lover. Some of the best known of collections have been made in this country by physicians. It would be impossible to parallel elsewhere the libraries of Mead, Askew, and William Hunter. The sale catalogues of the former tell of treasures (and of prices) that send a thrill of regret through the book-lover that his lot was not cast in those happy days. The William Hunter Library met a better fate, and in the University of Glasgow is an enduring and worthy monument to the elder of the two great brothers, so unlike in mind and manners, so like in the capacity to see the true value of collections. It is to be hoped that a complete catalogue of this library may be issued before long, in companion volumes to the splendid catalogue of the manuscripts recently edited as a memorial to the late Professor Young.

It is safe to say that in proportion to population there are more medical libraries in these islands than in any other country in the world. We hope before long to have a proper census of them, and meanwhile I base the statement on casual observation. One of the first questions I ask on visiting a new town is, "Where is your medical library?" and I have been astonished at their extent and value. Usually in connexion with the county hospital or the medical society, or both, many of them go back to the middle or later part of the eighteenth century, and bear witness to the culture and intelligence of the provincial physicians of those days.

There are three groups:

First, in the national libraries of the capitals and of the universities, such as the British Museum and the Bodleian, are large collections of medical books—that of the British Museum the largest in the country. Upon these public storehouses of bibliographical knowledge we all draw freely. In many of the small libraries there are special collections of great intrinsic or historical value. The college libraries of Oxford and Cambridge contain manuscripts and old books of exceptional interest. Diel's topographical catalogue shows how rich some of the colleges are in the Greek medical manuscripts, particularly Balliol, New, Merton, All Souls, and Caius. Stowed away on their shelves are many fine folios, the gift of old members. Gulston's books are at Merton; New College has a very choice collection, including some of Walter Bayley; Floyer's books are at Queen's, Paddy's at St. John's, Coggan's at Oriel—indeed there is scarcely a college library without interesting medical associations.

† The only man, so far as I know, who has had the courage to write a diverting bibliography, but unfortunately he only got through A and B.
Secondly, the medical libraries proper, among which those of the Royal Colleges of the three capitals are the most important. Easily first in extent and in the wide sphere of its influence is that of the Royal College of Surgeons of England, which is a model of good management. The library of the Royal Society of Medicine is the largest, I believe, connected with any medical society, and with the new organization is rapidly growing. The libraries of the Faculty of Physicians and Surgeons of Glasgow, of the Medical Institution of Liverpool, of the Birmingham Institute, of University College, Bristol, the Worth Library of the Steevens Hospital, and the Manchester Medical Society, form collections of the first rank. One of the most valuable of professional libraries is that of the British Medical Association, under whose auspices, so to speak, we meet today. Founded in 1889, it now possesses more than 20,000 volumes, with a card catalogue. The books are chiefly modern, with a large proportion of monographs and valuable sets of foreign periodicals. It receives also, and this is a very important point for borrowers, the theses of the French universities. Through it the Association has already done good work by aiding in the formation of local libraries, and between 6,000 and 7,000 duplicates have already been distributed. An important step has recently been taken to make this a lending library for members of the Association, who will be able to borrow expensive works and periodicals such as are only occasionally required for consultation. Having frequently visited the library in the old building, I very gladly bear testimony to its usefulness and to the admirable way in which it is managed by the librarian, Mr. Honeyman. I am not surprised to hear that the annual number of readers is very large, more than 6,000 in 1906. In the new building the arrangements are excellent, and I have no doubt that provincial members visiting London will more and more resort to this library. In all matters of management and detail these large libraries will be able to guide and assist us with their experience. Certainly we shall get much more from them than they from us, but theirs will be the richer blessing of the giver. With a well-managed exchange we may be able to help them fill the lacunae on their shelves, and it should be our aim to make these national collections more and more complete.

By far the best work we can do is in the organization, preservation and extension of the smaller libraries already existing in the provincial cities and towns. Many of these are already well housed and well arranged, as for example the Reading, York and Norwich libraries, to speak of those which I know personally. There are scores of hospitals with good collections, some of the greatest value, as those of Exeter and Bath and the Brackenbury Library, Preston. Some of them have associations of exceptional interest. I have always been an admirer of Caleb Hillier Parry of Bath, type of the old naturalist-physician, more common a few generations ago than now.
His library in the Royal Hospital remains a fitting monument to a scholarly man of wide sympathies, and who left a deep impression on that part of the West Country which has given us such men as Jenner, Pritchard and Symonds. In those days life was not so full, and competition was less keen, so that men had more time to read and to think. Many of the best of these smaller libraries date from the latter part of the eighteenth century and the beginning of the nineteenth century. Some of them have died into cupboards and barrels, and sadly need the kind care of a Philip, de Bury, one of the founders of Oxford libraries, who, in the fourteenth century, complained bitterly that he found precious volumes defiled and injured by mice, worms and moths. A collection of this sort, offered me a few years ago, I was able to buy through a friend, for the Johns Hopkins Medical School. It had associations with Joseph Priestley, with John Aikin, Thomas Percival and James Kendrick, well-known names in the North. As illustrating how valuable may be some of these out-of-the-way collections, there were in this one scores of seventeenth and eighteenth century pamphlets which were not in the London libraries.

Our best work will be in stimulating an interest in these smaller libraries, either in connexion with the medical society or with the hospital, and in helping to organize them; and from every one of them we hope to have in our society a representative.

And, lastly, there is the private library of the practitioner, the scope of which will depend on his training, his tastes, and his purse; and this brings me to the subject of my remarks, "the value of the library in post-graduate study."

Some of the best of men have used books the least, and there is good authority for the statement that shallowness of mind may go with much book-learning. Descartes, one of the most brilliant of thinkers and observers, had no library. At Egmond, asked by a friend the books he most read and valued, he took him into his dissecting room and showed him a calf—"There is my library." An identical anecdote is told of John Hunter. But these were exceptional men; and few will be found to doubt the importance of books as a means to what the same author called the end of all study—the capacity to make a good judgement.

It cannot be denied that many men practise, and do so successfully, with few journals and still fewer books. Radcliffe, whose memory is enshrined in two of the finest library buildings in the kingdom, and whose travelling Fellows are supposed to have at least a triennial thirst for new knowledge, neither read nor wrote books; and he is credited with the famous motto that he could set down the whole art of medicine on a sheet of paper. But conditions have changed, and medicine is now a rapidly progressive science, as well as an exceedingly complicated art, of which, at qualification, a man has only laid the foundation; and if he is to develop his intelligence—that is, get an education—it must be by systematic post-
graduate study. Out of leading-strings he must himself be at once teacher and pupil, and make and keep certain self-made laws. Whether he will get this education, whether, indeed, he will be able to keep what he has, will depend in part upon the sort of training he has received, and in part upon the type of mind with which he has been endowed. Unless as a student he has got that "relish of knowledge" of which Locke speaks; unless he has got far enough to have his senses well trained to make accurate observations; unless he has been taught how to use his intelligence so as to form a good judgement, the teacher will have more or less of a fool for a pupil, and between them make a sad mess of an education. After a few years such a man gives up in despair, and without mental exercise grows stale and is fit to do only the ordinary reflex practice, in which cough means an expectorant mixture, and heart disease digitalis, just as surely as a tap on the patellar tendon brings out the knee-jerk. A glance at the consulting-room suffices for the diagnosis of this type: the *British Medical Journal* or *Lancet* lies uncut in heaps on the table, and not a book is in sight! Some of the men of this type play a good game of tennis, others shoot and ride well, more play a good game of bridge, but they are lost souls, usually very dissatisfied with the profession—the kickers, the knockers, the grumblers, without a glimmer of consciousness that the fault is in themselves.

Post-graduate study is a habit of mind only to be acquired, as are other habits, in the slow repetition of the practice of looking at everything with an inquiring spirit. A patient with pneumonia has grass green sputum. "Have I ever seen it before? Have I a note of it? Where can I get a good description of it? What does it signify?" These are questions preliminary to getting a bit of clinical education, trifling in itself apparently, but when stored up and correlated with other facts may become the basis for an intelligent judgement on an important case.

There are many factors in this training—note-taking, reading, the medical society, and the quinquennial brain-dusting at a hospital or a post-graduate school. But I am only here concerned with one—books. I would like to speak of the value of notes, however brief, collected through long years as the sole means whereby a man gets his experience codified and really helpful; but I cannot wander to-day from the book, in which I include The *Journal.*

But how can a busy man read, driven early and late, tired out and worried? He cannot. It is useless to try, unless he has got into the habit when he was not so busy; then it comes easy enough, and the hardest-worked man in the land may read his journals every week, even if he has to do it in his carriage. My old teacher and colleague at McGill, Palmer Howard, was the busiest practitioner in Montreal, but the weeklies and the monthlies, English and French, the good old Quarterly, the hospital reports, the new monographs—nothing escaped him, and I have
often heard him say that he did his best reading as he drove from patient to patient.

It is not so much a question of when but of what and of how. What sort of reading will best help a man in his education, will help him to keep up with the times and to develop into a thinking, reasoning practitioner? Let him get rid of the notion that much has to be read; one or two journals, a good weekly—the *Lancet* or the *British Medical Journal*—a good monthly—the *Practitioner* or the *American Journal of the Medical Sciences*—suffice; but let them be read thoroughly. Then each week strip the husk of advertising sheets, and keep on the desk a file of reasonable proportions, and to the articles which have been of interest refer again and again. At the end of the half-year bind your journals and insert slips where you have found articles bearing directly on your cases.

Carefully studied, a couple of journals are the very basis of post-graduate work, and year by year the files on the shelves become not simply the nucleus of, but actually a good working library, and, well marked in his mind, he has in them volumes on every special disease and a complete summary of the progress of medicine.

Let him follow the same practice with books. Buy with discrimination, and not too many, as here again it is a question of reading. If, as is said, the man of one book is dangerous, the man of a few books is more useful and more apt to keep the open, plastic mind. A good "System" of medicine and of surgery, an occasional monograph or work on special diseases, a new edition of a favourite textbook (when you can trust that it is really an editor's, not a publisher's, edition!), should suffice, and do not mean a large annual expenditure.

It is much simpler to buy books than to read them, and easier to read them than to absorb their contents. Too many men slip early out of the habit of studious reading, and yet this is essential to a man if he is to get an education. To be worth anything it must be associated with concentration—with that mental application which means real effort. Of the new Allbutt and Rolleston "System" I can read comfortably about twenty pages in an hour—sometimes of a tough author not more than fifteen. Half an hour a day would finish the six volumes already published within a year.

More than once I have referred to the three essentials in the house of the general practitioner—the library, the laboratory, and the nursery—and of these the first is much the easiest to get, as he starts with a nucleus in his students' textbooks. Effort and system gradually train a man's capacity to read intelligently and profitably, but only while the green years are on his head is the habit to be acquired, and in a desultory life, without fixed hours, and with his time at the beck and call of everybody, a man needs a good deal of reserve and determination to maintain it. Once the machinery is started, the effort is not felt in the keen interest in a subject. As Aristotle remarks, "In the case of our habits we are only masters of the
beginning, their growth by gradual stages being imperceptible, like the growth of a disease”; and so it is with this habit of reading, of which you are only master at the beginning—once acquired, you are its slave.

So far as the library is a factor, the greater part of a man’s post-graduate education must be at home. In this country no man practises very far from a county town in which there is a medical society or a general hospital with a library attached. A notebook for special points to look up, or for certain books of reference, will get him into the habit of frequenting it, and he should become a subscriber, as in this way not only does the library widen its influence, but finds means for its support. The county library, wherever situated, should be the much-esteemed consultant of the general practitioner.

But it is in the towns of 20,000 in population and upwards that the library is of the greatest value, and where it becomes a factor of the first importance in the development of the progressive man. These are days of great opportunities, when we have discovered other ways to the top, toilsome all the same, than up the old rungs of the academic ladder, or the weary climb of the stairs of a London hospital. We are waking up to the fact that the man may make his own environment, and may make it just what and where he pleases; he may even perform a miracle—the mountain may come to Mahomet. Let me give you a notable illustration.

A few years ago when two young Irish-Americans called Mayo began to frequent the surgical clinics of Europe, no one knew where they came from; no one had ever heard of Rochester, Minnesota, and when informed that it was on the “Prairies,” about 1,000 miles north-west of Chicago, there was a shrug of the shoulders and “Oh!” Self education, post-graduate study, books, journals, laboratory work, have enabled these remarkable men to build up one of the largest and in some respects the most important surgical clinic in the world, and a town of less than 20,000 inhabitants has become the Mecca of all surgeons.

To the man who is ambitious to use his opportunities in a town or city, a well selected library is essential, and whether he be surgeon, physician, or specialist, he needs as a rule more than his own shelves supply, often indeed a good deal more than the library can offer. As I have already stated, the library of the British Medical Association is offering great facilities to its members. In England, too, he can and should join the Royal Medical Society, from which monographs and special journals may be had, but he cannot always wait, and there is no reason why in the larger towns there should not be a library which ministers to the ordinary wants of all ranks. The journals at once become a serious consideration—French, German, and American—but a few of the best suffice when supplemented by the admirable German Centralblätte. By means of an exchange this association can render great assistance, while in the thickly populated districts a system of exchanges between libraries would cut in half
the cost of the more expensive journals. In this matter, too, a central library like that of the British Medical Association may be most helpful.

In large cities the profession should have its own home in connexion with the leading medical society, and of such an organization the library forms an important part. Belfast has set a good example, and through the munificence of Sir William Whitla you have a splendid building for the Medical Institute. About such rooms or buildings should centre the life of the profession, present and past. Portraits of the old worthies, memorials of friends, and to our heroes (such as the beautiful stained-glass window in the Institute here to Dr. William Smyth), show-cases full of the interesting relics of the profession, with manuscripts and books illustrative of local history—all these memorials make the past live again. At York you may see in the medical library the actual forceps with which Dr. Slop broke the bridge of Tristram Shandy's nose, and in every county there are relics of the profession well worth preserving.

It should be the ambition of the men in each county to have well-equipped rooms, such as those I have visited with much pleasure at York and Norwich. If, as at Reading, Exeter, Preston, and Dublin (Steevens' Hospital), rooms have been furnished in the hospital, see that the equipment is attractive; many libraries have deservedly fallen into disuse because men will not seek books or journals in dull, dark, cold, dusty, uninviting rooms.

Like everything else that is worth having, a library costs money. Do not try to do too much, strive to have a large membership, which enables the fees to be low; and when the library is in connexion with a hospital, the current English journals should be furnished by the governors to the staff. In towns with a tax for the upkeep of a public library, a grant should be made for the medical library. But the financial and other questions of organization and support will be discussed, I hope, at an early meeting.

Were there time I should like to say a few words on the subject of how to read, but the essence of the whole matter I found the other day in the Bibliotheca Lancisiana, Rome (founded in 1711, and containing the books of the famous Lancisi). In the opening address, 1714, De recto usu Bibliothecae, the Abbé Carsughbi discusses the subject in three sections, and gives some good rules. The first section, Librorum scilicet delectum, need not detain us, but in the second, Legendi methodum, he urges two important points—to read in a certain order and with a definite object, and lente festinans, "unhasting but unresting." In the third section, Adnotandi modum, he urges the necessity of careful note-taking, quoting the praise of Clement of Alexandria, "Oblivionis medicaamentum, monumentum senectutis et adjumentum memoriae." He dwells upon the importance of study in the morning, which was all very well in those days, but is not one hour after six in the evening worth now two before
eight in the morning? (I am sure it is to me!) With half an hour's reading in bed every night as a steady practice, the busiest man can get a fair education before the plasma sets in the periganglionic spaces of his grey cortex.

But there is another side of the question of books and libraries—man does not live by bread alone, and while getting his medical education and making his calling and election sure by hard work, the young doctor should look about early for an avocation, a pastime, that will take him away from patients, pills and potions. One of the best features I find in my "old country" colleagues is the frequency with which they have hobbies. No man is really happy or safe without one, and it makes precious little difference what the outside interest may be—botany, beetles or butterflies, roses, tulips or irises, fishing, mummieering or antiquities—anything will do so long as he straddles a hobby and rides it hard. I would like to make a plea for the book, for the pleasant paths of bibliography, in which many of us stray to our great delight. Up on this how charming is old Burton (really one of us, "by profession a divine, by inclination a physician," he says), whose Anatomy of Melancholy is the only great medical work ever written by a layman. "For what a world of books offers itself, in all subjects, arts and sciences, to the sweet content and capacity of the reader! In arithmetic, geometry, perspective, optics, astronomy, architecture, sculpture, painting, of which so many and such elaborate treatises are written; in mechanics and their mysteries, military matters, navigation, riding of horses, fencing, swimming, gardening, planting, great tomes of husbandry, cookery, falconry, hunting, fishing, fowling, etc., with exquisite pictures of all sports, games, and what not! In music, metaphysics, natural and moral philosophy, philosophy in policy, heraldry, genealogy, chronology, etc., they afford great tomes, or those studies of antiquity, etc., et quid subtilius Arithmeticis inventionibus, quid judicandius Musicis rationibus, quid divinibus Astronomics, quid rectius Geometricis demonstrationibus! What so sure, what so pleasant?"

Our society will, I am sure, be very helpful to men who take up this study. We hope to have two groups, mutually helpful—the professional bibliographers, the men in charge of our libraries, who have to do with the book, as such, and who care little or nothing about its contents; and amateurs, like myself. As Professor Ferguson says in his charming essay:

He (the bibliographer) has to do with editions and their peculiarities, with places, printers, and dates, with types and illustrations, with sizes and collation, with binding and owners, with classifications, collections and catalogues.

There are scores of book collectors whose hobby also takes them in this direction, but we should have a large amateur group who will be happier in following other lines. Personally, I collect on two principles—first, interest in an author, which is a good guide, as the book
illustrates the biography, a principle which has the advantage of helping at least to keep you within the limits of purse and shelves, more the latter than the former. Take, for example, the two small groups of books I have placed in our exhibition, the one illustrating Servetus, the other Ulrich von Hutten. Valuable as they are from the standpoint of the professional bibliographer, this is nothing to the interest awakened in the men themselves, in their aspirations, their labour, and their tragic fates. For the amateur this personal note clothes the dry bones of bibliography and makes them live. And my other principle is this: a student of the history of medicine, I look out for books which have left their impress on it in some special way. If one is particular to examine carefully into the claims of a book before admitting it to the select company on your shelves, you here again cultivate a due regard for purse and space. For example, five or six books illustrate the whole subject of auscultation and percussion, only the masterpieces are chosen. I confess there may be a certain satisfaction in tracing out the biography of a book, but it is cold work unless you love the author.

Judiciously cultivated, bibliography has many advantages as a pastime for the doctor; a little patient care, a very small expenditure of money, and a constant look-out for the books wanted are the essential requisites. Nor is there ever any difficulty in the choice of a subject—anything he may be interested in has its bibliographical side. One friend (Dr. Turrell), a very busy man, is a keen fisherman, and has found the time to collect a library on this subject, and has written the article on it for the County History of Oxfordshire. Another man has kept up his classics, and collected everything relating to Horace. Another has a library relating to the order of St. John. Another friend in large general practice has found time to make a collection of the masterpieces of English literature, which has not only been a diversion and an education, as it has brought him into the best company of the past four centuries, but he tells us there is another side—it has been a better investment than life insurance. A member of our profession, the late Professor Corfield, made one of the best modern collections of bindings, the sale of which at Sotheby's in 1904 was one of the bibliographical features of the year. Once in a subject it is extraordinary how it grows and develops. As Atkinson says, "It is an art of itself, which is not easily sought into or acquired, but which, if so acquired, may stand both his pleasure and profit in very great stead in a very long or a short life." And the busiest general practitioner may find the time for first-class work. Many of you may have seen a book issued two years ago from the Oxford Press on Greek and Roman medical and surgical instruments, the only separate treatise on the subject which has appeared in English. It illustrates the hobby of a very hard-worked practitioner in the town of Hartlepool—John Milne, whose spare time and whose vacation have been spent in studying this aspect of Greek and Roman archaeology.
We shall hope to have in our society both the professional and the amateur—the man whose life-work is in libraries, and those of us who are fond of books, either from a biographical or a bibliographical standpoint. We should be able to encourage library organization, and once established as a common meeting ground for all interested, the society should be of great value to the profession. We look for a large membership, and many will join who do not belong to either of the above-mentioned groups, the men who feel that, as a matter of policy, such a society should be supported. *Non sibi sed toti*—let us work in the spirit of this motto, and our future is assured.

In starting an organization of this sort the work always falls on one or two men. We have to thank Dr. Stanley Hall, of Bristol, and Mr. C. E. A. Clayton, of the Manchester Medical Library, to whom is due entirely the success of this preliminary meeting. We have also to thank the university authorities for allowing us to meet here, and furnishing us with rooms for the exhibit.

**Reference.**

1 *Some Aspects of Bibliography*, Edinburgh,
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THE TREATMENT OF DISEASE

THE ADDRESS IN MEDICINE BEFORE THE ONTARIO MEDICAL ASSOCIATION
TORONTO, JUNE 3, 1909

BY

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As true to-day as when Celsus made the remark, 'The dominant view of the nature of disease controls its treatment.' As is our pathology so is our practice; what the pathologist thinks to-day the physician does to-morrow. Roughly grouped, there have been three great conceptions of the nature of disease. For long centuries it was believed to be the direct outcome of sin, *flagellum Dei pro peccatis mundi*, to use Cotton Mather's phrase, and the treatment was simple—a readjustment in some way of man's relation with the invisible powers, malign or benign, which had inflicted the scourge. From the thrall of this 'sin and sickness' view man has escaped so far as no longer, at least in Anglo-Saxon communities, to have a proper saint for each infirmity. Against this strong bias towards the supernatural even the wisdom of Solomon could not prevail; was not the great book of his writings which contained medicine for all manner of diseases and lay open for the people to read as they came into the temple removed by Hezekiah lest out of confidence in remedies they should neglect their duty in calling and relying upon God? And the modern book of reason, which lies open to all, is read only by a few in the more civilized countries. The vast majority are happy in the childlike faith of the childhood of the world. I am told that annually more people seek help
at the shrine of Ste. Anne de Beaupré, in the Province of Quebec, than at all the hospitals of the Dominion of Canada. How touching at Rome to see the simple trust of the poor in some popular Madonna, such as the Madonna del Parto! It lends a glow to the cold and repellent formalism of the churches. In all matters relating to disease credulity remains a permanent fact, uninfluenced by civilization or education.

From Hippocrates to Hunter the treatment of disease was one long traffic in hypotheses; variants at different periods of the doctrine of the four humours, as dominated by some strong mind in active revolt it would undergo temporary alteration. The peccant humours were removed by purging, bleeding, or sweating, and until the early years of the nineteenth century there was very little change in the details. To a very definite but entirely erroneous pathology was added a treatment most rational in every respect, had the pathology been correct! The practice of the early part of the last century differed very little from that which prevailed in the days of Sydenham, except, perhaps, that our grandparents were, if possible, more ardent believers in the lancet.

In the past fifty years—in the memory, indeed, of some present—our conception of the nature of disease has been revolutionized, and with a recognition that its ultimate processes, whether produced by external agents or the result of modifications in the normal metabolism, are chemico-physical, we have reached a standpoint from which to approach the problems of prevention and cure in a rational way. Let me indicate briefly the directions in which the new science has transformed the old art.
In the first place, the discovery of the cause of many of the great scourges has changed not only its whole aspect, but, indeed, we may say, the very outlook of humanity. No longer is our highest aim to cure, but to prevent disease; and in its career of usefulness the profession has never before had a triumph such as we have witnessed in the abolition of many fearful scourges. Great as have been the Listerian victories in surgery, they are but guerrilla skirmishes, so to speak, in comparison with the Napoleonic campaigns which medicine is waging against the acute infections. These are glorious days for the race. Nothing has been seen like it on this old earth since the destroying angel stayed his hand on the threshing-floor of Araunah the Jebusite. For seven years Cuba, once a pest-house of the tropics, has been free from a scourge which has left an indelible mark in the history of the Englishman, Spaniard, and American in the New World. To-day the Canal Zone of Panama, for years the graveyard of the white man, has a death-rate as low as that in any city of the United States. In the island of Porto Rico, where many thousands have died annually of tropical anaemia, the death-rate has been cut in half by the work of Ashford and others. But, above all, the problem of life in the tropics for the white man has been solved, since malaria may now be prevented by very simple measures. These are some of the recent results of laboratory studies which have placed in our hands a power for good never before wielded by man.

Secondly, a fuller knowledge of etiology has led to a return to methods which have for their object, not so much the combating of the disease germ or of its products,
as the rendering of conditions in the body unfavourable for its propagation and action. How fruitful in practical results, for example, have been the new views on tuberculosis! Not that the discovery of the bacillus itself modified immediately our treatment of the disease, but, as so often happens, a combination of circumstances was responsible for the happy revolution—the recognition of the widespread prevalence of the infection, the great frequency with which healed lesions were found, and the knowledge of the importance of the character of the tissue soil, led to the substitution of the open-air and dietetic treatment for the nauseous mixtures with which our patients were formerly drenched. We scarcely appreciate the radical change which has occurred in our views even within a few years. Contrast a recent work on tuberculosis with one published twenty-five or thirty years ago. In the latter the drug treatment takes up the larger share, while in the former it is reduced to a page or two. And it is not only in the acute infections that the use of the ‘non-naturals’, as the old writers called them, has replaced other forms of treatment, but in diet, exercise, massage, and hydrotherapy, we are every day finding out the enormous importance of measures which too often have been used with greatest skill by those outside or on the edge of the profession.

Thirdly, the study of morbid anatomy combined with careful clinical observations has taught us to recognize our limitations, and to accept the fact that a disease itself may be incurable, and that the best we can do is to relieve symptoms and to make the patient comfortable. The relation of the profession to this group, particularly
THE TREATMENT OF DISEASE

to certain chronic maladies of the nervous system, is a very delicate one. It is a hard matter, and really not often necessary (since Nature usually does it quietly and in good time), to tell a patient that he is past all hope. As Sir Thomas Browne says: 'It is the hardest stone you can throw at a man to tell him that he is at the end of his tether'; and yet, put in the right way to an intelligent man it is not always cruel. Let us remember that we are the teachers, not the servants, of our patients, and we should be ready to make personal sacrifices in the cause of truth, and of loyalty to the profession. Our inconsistent attitude is, as a rule, the outcome of the circumstances that of the three factors in practice, heart, head, and pocket, to our credit, be it said, the first named is most potent. How often does the consultant find the attending physician resentful or aggrieved when told the honest truth that there is nothing further to be done for the cure of his patient! To accept a great group of maladies, against which we have never had and can scarcely ever hope to have curative measures, makes some men as sensitive as though we were ourselves responsible for their existence. These very cases are 'rocks of offence' to many good fellows whose moral decline dates from the rash promise to cure. We work by wit and not by witchcraft, and while these patients have our tenderest care, and we must do what is best for the relief of their sufferings, we should not bring the art of medicine into disrepute by quack-like promises to heal, or by wire-drawn attempts at cure in what old Burton calls 'continuate and inexorable maladies'.

Fourthly, the new studies on the functions of organs
and their perversions have led to most astonishing results in the use of the products of metabolism, which time out of mind physicians have employed as medicines. The old recipe-books are full of directions for the use of parts of animals or of various secretions and excretions. Much of the humbuggery and quackery inside and outside of the profession has been concerned with some of the most unsavoury of these materials. The seventeenth-century pharmacopoeias were full of them, and in his oration at the Hunterian Society, 1902, Dr. Arthur T. Davies has given an interesting historical sketch of their use in practice. Metabolic therapy represents one of the greatest triumphs of science. The demonstration of insufficiency of the thyroid gland is a brilliant example of successful experimental inquiry, and as time has passed the good results of treatment in suitable cases have become more and more evident. Before long, no doubt, we shall be able to meet, in the same happy way, the perverted functions which lead to such diseases as exophthalmic goitre, Addison's disease, and acromegaly; and as our knowledge of the pancreatic function and carbo-hydrate metabolism becomes more accurate we shall probably be able to place the treatment of diabetes on a sure foundation. And it is not only on the organic side that progress has been made. Important discoveries relating to the metabolism of the inorganic constituents, such as those relative to acidosis, have opened a new and most hopeful chapter in scientific medicine.

But the best of human effort is flecked and stained with weakness, and even the casual observer may note dark shadows in the bright picture. Organotherapy illus-
trates at once one of the great triumphs of science and the very apotheosis of charlatanry. One is almost ashamed to speak in the same breath of the credulousness and cupidity by which even the strong in intellect and the rich in experience have been carried off in a flood of pseudo-science. This has ever been a difficulty in the profession. The art is very apt to outrun or override the science, and play the master where the true rôle is that of the servant.

And, lastly, we have advanced firmly along a new road in the treatment of diseases due to specific microorganisms, with the toxic products of which we are learning to cope successfully. The treatment with antitoxins and bacterial vaccines, so successfully started, bears out the truth of that keen comment of Celsus: 'He will treat the disease properly whom the first origin of the cause has not deceived.' We are still far from the goal in some of the most important and fatal infections, but any one acquainted in even slight measure with the progress of the past ten years cannot but have confidence in the future. Considering that the generation is still active which opened the whole question, we cannot but feel hopeful in spite of disappointments here and failures there. But in our pride of progress let us remember cancer and pneumonia. The history of the latter disease affords a good illustration of the truth of the remark of Celsus with which I began this address. Year by year the lesson of pneumonia is a lesson of humility. For purposes of comparison statistics are not available, but it is not likely that the great masters from Galen to Grisolle lost a larger number of cases than we do.
Pneumonia has always been, as to-day, a dreaded and a fatal disease. For one thing let us be thankful. We have had the courage to abandon the expectorant mixtures, the depressants, the cardiac sedatives, the blisters, the emetics, the resulsives, the purges, the poultices, and, to a great extent, the bleedings. Surely our forefathers must have killed some patients by the appalling ferocity of their treatment, or to have stood it the constitutions of those days must have been more robust. We still await, but await in hope, the work that will remove the reproach of the mortality bills in this disease. I say reproach because we really feel it, and yet not justly, for who made us responsible for its benign or malignant nature? We can relieve symptoms, but we must find the means which will, on the one hand, limit the extension of the process, loosen the exudate, minimize the fluxion, control the alveolar diapedesis, and, on the other hand, diminish the output of the toxins, neutralize those in circulation, or strengthen the opsonic power of the blood.

But some one will say, Is this all your science has to tell us? Is this the outcome of decades of good clinical work, of patient study of the disease, of anxious trial in such good faith of so many drugs? Give us back the childlike trust of the fathers in antimony and in the lancet rather than this cold nihilism. Not at all! Let us accept the truth, however unpleasant it may be, and with the death-rate staring us in the face, let us not be deceived with vain fancies. Not alone in pneumonia, but in the treatment of certain other diseases, do we need a stern, iconoclastic spirit which leads, not to nihilism, but to an active scepticism—not the passive scepticism...
born of despair, but the active scepticism born of a knowledge that recognizes its limitations and knows full well that only in this attitude of mind can true progress be made. There are those among us who will live to see a true treatment of pneumonia; we are beginning to learn the conditions of its prevalence, it may yet come within the list of preventable diseases, and let us hope that before long we may be able to cope with the products of the pneumococcus itself.

II

Along these five lines the modern conception of the nature of disease has radically altered our practice. The personal interest which we take in our fellow creatures is apt to breed a sense of superiority to their failings, and we are ready to forget that we ourselves, singularly human, illustrate many of the common weaknesses which we condemn in them. In no way is this more striking than in the careless credulity we display in some matters relating to the treatment of disease. The other day the Times had an editorial upon a remark of Bernard Shaw that the cleverest man will believe anything he wishes to believe, in spite of all the facts and textbooks in the world. We are at the mercy of our wills much more than of our intellect in the formation of our beliefs, which we adopt in a lazy, haphazard way, without taking much trouble to inquire into their foundation. But I am not going to discuss, were I able, this Shavian philosophy, but it will serve as an introduction to a few remarks on the Nemesis of Faith which in all ages readily over-
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takes doctors and the public alike. Without trust, without confidence, without faith in himself, in his tools, in his fellow men, no man works successfully or happily. For us, however, it must never be the blind unquestioning trust of the devotee, but the confidence of the inquiring spirit that would prove all things. But it is so much easier to believe than to doubt, for doubt connotes thinking and the expenditure of energy, and often the disruption of the status quo. And then we doctors have always been a simple, trusting folk! Did we not believe Galen implicitly for 1,500 years and Hippocrates for more than 2,000? To have the placid faith of the simple believer, instead of the fighting faith of the aggressive doubter, has ever been our besetting sin in the matter of treatment.

In the progress of knowledge each generation has a double labour—to escape from the intellectual thralls of the one from which it has emerged and to forge anew its own fetters. Upon us whose work lay in the last quarter of the nineteenth century fell the great struggle with that many-headed monster, Polypharmacy—not the true polypharmacy which is the skilful combination of remedies, but the giving of many—the practice of at once discharging a heavily-loaded prescription at every malady, or at every symptom of it. Much has been done and an extraordinary change has come over the profession, but it has not been a fight to the finish. Many were lukewarm; others found it difficult to speak without giving offence in quarters where on other grounds respect and esteem were due. As an enemy to indiscriminate drugging, I have often been branded as a therapeutic
nihilist. That I should even venture to speak on the subject calls to mind what Professor Peabody, of Harvard, remarked about Jacob Bigelow, that, 'for his professorship of Materia Medica he had very much the same qualifications that a learned unbeliever might have for a professorship of Christian theology. No other man of his time had so little faith in drugs.' I bore this reproach cheerfully, coming, as I knew it did, from men who did not appreciate the difference between the giving of medicines and the treatment of disease; moreover it was for the galled jade to wince, my withers were unwrung. The heavy hands of the great Arabians grow lighter in each generation. Though dead, Avicenna and Averroes still speak, not only in the Arabic signs which we use, but in the combinations and multiplicity of the constituents of too many of our prescriptions. We are fortunately getting rid of routine practice in the use of drugs. How many of us now prescribe an emetic? And yet that shrewd old man, Nathanial Chapman, who graced the profession of Philadelphia for so long, used to say: 'Everything else I have written may disappear, but my chapter on emetics will last!'<br>How much less now does habit control our practice in the use of expectorants? The blind faith which some men have in medicines illustrates too often the greatest of all human capacities—the capacity for self-deception. One special advantage of the sceptical attitude of mind is that a man is never vexed to find that after all he has been in the wrong. It is an old story that a man may practise medicine successfully with a very few drugs. Locke had noticed this, probably in the hands of his friend Sydenham, since
he says: 'You cannot imagine how far a little observation carefully made by a man not tied up to the four humours . . . would carry a man in the curing of diseases, though very stubborn and dangerous, and that with very little and common things and almost no medicine at all.' Boerhaave commented upon this truth in a remark of Sydenham 'that a person well skilled in cases seldom needs remedies'. The study of the action of drugs, always beset with difficulties, is rapidly passing from the empirical stage, and this generation may expect to see the results of studies which have already been most promising. It is very important that our young men should get oriented early in this matter of drug treatment. Our teachers used to send us to the works of Forbes (Nature and Art in the Treatment of Diseases) and to Jacob Bigelow (Nature and Disease) for clear views on the subject. A book has been written by Dr. Harrington Sainsbury, the well-known London physician and teacher (Principia Therapeutica, Methuen), which deals with these problems in the same philosophic manner. It opens with a delightful dialogue between the pathologist and the physician. He lays his finger on the weak point of the pure morbid anatomist who thinks of the lesion only, and not enough of the function which even a seriously damaged organ may be able to carry on. The book should be in the hands of every practitioner and senior student. Some of you may have heard of the lecture-room motto of that distinguished pathologist and surgeon, and the first systematic writer on morbid anatomy in the United States, S. D. Gross: 'Principles, gentlemen, principles! principles!!' And it is upon these funda-
mental aspects that Dr. Sainsbury dwells in his most suggestive work, which I would like to see adopted as a textbook in every medical school in the land.

And we are yet far too credulous and supine in another very important matter. Each generation has its therapeutic vagaries, the outcome, as a rule, of attempts to put prematurely into practice theoretical conceptions of disease. As members of a free profession we are expected to do our own thinking; and yet the literature that comes to us daily indicates a thraldom not less dangerous than the polypharmacy from which we are escaping. I allude to the specious and seductive pamphlets and reports sent out by the pharmaceutical houses, large and small. We owe a deep debt to the modern manufacturing pharmacist, who has given us pleasant and potent medicines in the place of the nauseous and weak mixtures; and such firms as Parke, Davis & Company, of the United States, and Burroughs & Wellcome, of England, have been pioneers in the science of pharmacology. But even the best are not guiltless of exploiting in the profession the products of a pseudo-science. Let me specify three items in which I think the manufacturing pharmacists have gone beyond their limit and are trading on the credulity of the profession to the great detriment of the public. The length to which organotherapy has extended (not so much on this side of the water as on the European continent) beyond the legitimate use of certain preparations is a notorious illustration of the ease with which theoretical views place us in a false position. Because thyroid extract cures myxoedema and adrenalin has a powerful action, it has been taken almost for granted.
that the extract of every organ is a specific against the diseases that affect it. This forcing of a scientific position is most hurtful, and I have known an investigator hesitate to publish results lest they should be misapplied in practice. The literature on the subject issued by reputable houses indicates, on the one hand, the pseudo-science upon which a business may be built up, and, on the other, the weak-minded state of the profession on whose credulity these firms trade. A second most reprehensible feature is the laudatory character of literature describing the preparations which they manufacture. Foisted upon an innocent practitioner by a travelling Autolycus, the preparation is used successfully, say, in six cases of amenorrhoea; very soon a report appears in a medical journal, and a few weeks later this report is sent broadcast with the auriferous leaflets of the firm. A day or two before I left England a pamphlet came from X. & Co., characterized by brazen therapeutic impudence, and indicating a supreme indifference to anything that could be called intelligence on the part of the recipients. That these firms have the audacity to issue such trash indicates the state of thraldom in which they regard us. And I would protest against the usurpation on the part of these men of our functions as teachers. Why, for example, should Y. & Co. write as if they were directors of large genito-urinary clinics instead of manufacturing pharmacists? It is none of their business what is the best treatment for gonorrhoea—by what possibility could they ever know it, and why should their literature pretend to the combined wisdom of Neisser and Guyon? What right have Z. & Co. to send on a card directions for
the treatment of anaemia and dyspepsia, about which subjects they know as much as an unborn babe, and, if they stick to their legitimate business, about the same opportunity of getting information? For years the profession has been exploited in this way, until the evil has become unbearable, and we need as active a crusade against pseudo-science in the profession as has been waged of late against the use of quack medicines by the public. We have been altogether too submissive, and have gradually allowed those who should be our willing helpers to dictate terms and to play the rôle of masters. Far too large a section of the treatment of disease is to-day controlled by the big manufacturing pharmacists, who have enslaved us in a plausible pseudo-science. The remedy is obvious: give our students a first-hand acquaintance with disease, and give them a thorough practical knowledge of the great drugs, and we will send out independent, clear-headed, cautious practitioners who will do their own thinking and be no longer at the mercy of a meretricious literature which has sapped our independence.

Having confessed some of our own weaknesses, I may with better grace approach the burning question of the day in the matter of treatment. An influenza-like outbreak of faith-healing seems to have the public of the American continent in its grip. It is an old story, the oldest, indeed, in our history, and one in which we have a strong hereditary interest, since scientific medicine took its origin in a system of faith-healing beside which all our modern attempts are feeble imitations. Lincoln's favourite poem, beginning 'We think the same thoughts
that our fathers have thought', expresses a tendency in the human mind to run in circles. Once or twice in each century the serpent entwining the staff of Aesculapius gets restless, untwists, and in his gambols swallows his tail, and at once in full circle back upon us come old thoughts and old practices, which for a time dominate alike doctors and laity. As a profession we took origin in the cult of Aesculapius, the gracious son of Apollo, whose temples, widespread over the Greek and Roman world, were at once magnificent shrines and hospitals, with which in beauty and extent our modern institutions are not to be compared. Amid lovely surroundings, chosen for their salubrity, connected usually with famous springs, they were the sanatoriums of the ancient world. The ritual of the cure is well known, and has been beautifully described by Pater in *Marius the Epicurean*. Faith in the god, suggestion, the temple sleep and the interpretation of its dream were the important factors. Hygienic and other measures were also used, and in the guild of secular physicians which grew up about the temples scientific medicine took its origin. No cult resisted so long the progress of Christianity; and so imbued were the people with its value, that many of the practices of the temple were carried on into the Christian ritual. The temple sleep and the interpretation of its dreams were continued long into the Middle Ages, and, indeed, have not yet disappeared. The popular shrines of the Catholic Church to-day are in some ways the direct descendants of this Aesculapian cult, and the cures and votive offerings at Lourdes and Ste. Anne are in every way analogous to those of Epidaurus.
As I before remarked, credulity in matters relating to disease remains a permanent fact in our history, uninfuenced by education. But let us not be too hard on poor human nature. Even Pericles, most sensible of men, when on his deathbed, allowed the women to put an amulet about his neck. And which one of us, brought up from childhood to invoke the aid of the saints and to seek their help—which one of us under these circumstances, living to-day in or near Rome, if a dear child were sick unto death, would not send for the Santo Bambino, the Holy Doll of the Church of Ara Coeli? Has it not been working miracles these four hundred years? The votive offerings of gold and of gems from the happy parents cover it completely, and about it are grateful letters from its patients in all parts of the world. No doll so famous, no doll so precious! No wonder it goes upon its ministry of healing in a carriage and pair, and with two priests as its companions! Precious perquisite of the race, as it has been called, with all its dark and terrible record, credulity has perhaps the credit balance on its side in the consolation afforded the pious souls of all ages and of all climes, who have let down anchors of faith into the vast sea of superstition. We drink it in with our mother's milk, and that is indeed an even-balanced soul without some tincture. We must acknowledge its potency to-day as effective among the most civilized people, the people with whom education is the most widely spread, yet who absorb with wholesale credulity delusions as childish as any that have ever enslaved the mind of man.

Having recently had to look over a large literature on
the subject of mental healing, ancient and modern, for a new edition of my textbook, just issued, I have tried to put the matter as succinctly as possible. In all ages and in all climes the prayer of faith has saved a certain number of the sick. The essentials are first a strong and hopeful belief in a dominant personality, who has varied naturally in different countries and in different ages. Buddha in India, and in Japan, where there are cults to match every recent vagary; Aesculapius in ancient Greece and Rome; our Saviour and a host of saints in Christian communities; and lastly, an ordinary doctor has served the purpose of common humanity very well. Faith is the most precious asset in our stock-in-trade. Once lost, how long does a doctor keep his clientèle? Secondly, certain accessories—a shrine, a grotto, a church, a temple, a hospital, a sanatorium—surroundings that will impress favourably the imagination of the patient. Thirdly, suggestion in one of its varied forms—whether the negation of disease and pain, the simple trust in Christ of the Peculiar People, or the sweet reasonableness of the psycho-therapeutist. But there must be the will-to-believe attitude of mind, the mental receptiveness—in a word, the faith which has made bread pills famous in the history of medicine. We must, however, recognize the limitations of mental healing. Potent as is the influence of the mind on the body, and many as are the miracle-like cures which may be worked, all are in functional disorders, and we know only too well that nowadays the prayer of faith neither sets a broken thigh nor checks an epidemic of typhoid fever.

What should be the attitude of the clergy, many of
whom have been drawn into the vortex of this movement? I feel it would be very much safer to hand over this problem to us. It is not a burden which we should ask a hard-working and already overwrought profession to undertake or to share. It might be a different matter if it were really a gift of healing in the apostolic sense, but we know this was associated with other signs and wonders at present conspicuous by their absence. Then think of the possibilities for self-deception—of the saintly Edward Irving and the gift of tongues; of Monsieur de Paris, the French Priest, and the miracles at his tomb, to the truth of which two fine quarto volumes, with 'before and after' pictures, attest! The less the clergy have to do with the bodily complaints of neurasthenic and hysterical persons the better for their peace of mind and for the reputation of the Cloth. As wise old Fuller remarked, Circe and Aesculapius were brother and sister, and the wiles of the one are very apt to entrap the wisdom of the other.

III

It adds immensely to the interest in life to live in the midst of these problems which concern us so closely. We must meet them with an intelligent cheerfulness, in the full confidence that the Angel of Bethesda never stirred the waters without happy results. It is for us to see that the soldiers we are training for the fight against disease, bodily and mental, are well equipped for the battle; and let me briefly, in conclusion, indicate how I believe we should teach the art—the management of patients and
the cure of disease. To know how to deal with disease is the final goal, to reach which the whole energies of the student should be directed. We all recognize that it is in the out-patient departments and in the wards—I wish I could add in the homes of the general practitioners—that he must get this part of his training, not in an elaborate course of lectures on the properties and action of drugs. In the congested curriculum it is by no means easy to find the proper amount of time even for this, the most essential part of his education. But as we learn the futility of the lecture-room as an instrument of teaching men the Art, so, I think, we shall gradually be able to adapt the courses so that plenty of time may be given to the practical study of the treatment of cases under skilled direction. We should take over to the hospital side of the school the whole subject known in the curriculum as therapeutics. The composition of drugs, the method of their preparation, and the study of their physiological action should be taught in practical classes in the pharmaceutical laboratories. In the out-patient departments and in the wards much more systematic practical instruction should be given how to treat disease and how to manage patients. If we could only get the students for a sufficiently long period in the hospital, what helpful courses could be arranged in the senior years! Certain aspects of the subject must be ever kept before the assistants and the students, considered, per-

1 A post-graduate course in medical pedagogy would be most helpful organized by five or six of the large colleges and conducted by them in rotation with teachers selected from the different schools. Many able young fellows take years to acquire methods to which they might be introduced in a six-months' course.
haps, by different men associated with the clinic according to the special capacity of each one. The fundamental law should be ingrained that the starting-point of all treatment is in the knowledge of the natural history of a disease. Typhoid fever, tuberculosis, pneumonia, and, where possible, malaria, should be used for this important lesson, and in the everyday routine observation of cases the student would learn to know the course of the disease, its obvious features, the complications likely to arise; and he would be taught how to discriminate between the important and the unimportant symptoms of a case. This work should form the very basis of his course in medicine, and it should be accompanied by a seminar to take the place of set lectures, in which the features of all the common diseases would be discussed.

The hygienic and dietetic management of patients has now come to be such a prominent part of the work of our hospitals that the student may become acquainted with the open-air treatment, the various modifications of diet suitable to different diseases, and the use of massage, electricity, and other physical agents. But too often he is allowed to pick up this information in a haphazard, irregular fashion. One assistant of the clinic should be detailed to see that every member of the class knows, for example, how to arrange the open-air treatment for a tuberculous patient, and how to supervise the diet of a diabetic case. The student should prepare personally the various nutritive enemata, and be able to give the different kinds of massage, and I would have him thoroughly versed in all branches of hydrotherapy. A serious difficulty is that nowadays the nurse does
a great many things that it is essential the medical student should know how to do—the administration of hypodermics, the giving of a cold pack, &c.

Much more attention should be paid to the important subject of psychotherapy. It is not every teacher who has a special gift for this work, but if the professor himself does not possess it, he should, at any rate, have sense enough to have an assistant familiar with and interested in the modern methods. How many of our graduates have been shown how to carry out a Weir Mitchell treatment or to treat a patient by suggestion? The student should be taught that the very environment of a well-managed clinic is in itself an important factor in psychical treatment. A Philadelphia friend once jokingly defined my practice at the Johns Hopkins Hospital as a mixture of hope and nux vomica, and the grain of truth in this statement lies in the fact that with many hospital patients once we gain their confidence and inspire them with hope, the battle is won.

And lastly, from the day the student enters the hospital until graduation, he should study under skilled supervision the action of the few great drugs. Which are they? I am not going to give away my list. A story is told that James Jackson, when asked which he considered the greatest drugs, replied: 'Opium, mercury, antimony, and Jesuit’s bark; they were those of my teacher, Jacob Holyoke.' 'Yes,' replied his interlocutor, 'and they were those of Holyoke’s master, James Douglas, in the early part of the eighteenth century.' Mine is a much longer one! The student should follow most carefully the action of those drugs the pharmacology of
which he has worked out in the laboratory. He should be sent out from the hospital knowing thoroughly how to administer ether and chloroform. He should know how to handle the various preparations of opium. Each ward should have its little case with the various preparations of the ten or twelve great drugs, and when the teacher talks about them he should be able to show the preparations. He should study with special care the action of digitalis on the circulation in cases of heart disease. He should know its literature, from Withering to Cushney. It should be taken as the typical drug for the study of the history of therapeutics—the popular phase, as illustrated by the old woman who with it cured the Principal of Brasenose; the empirical stage, introduced by Withering in his splendid contribution, a model of careful clinical work of which every senior student should know; and the last stage, the scientific study of the drug, which he will already have made in the pharmacological laboratory. He should day after day personally give a syphilitic baby inunctions of mercury; he should give deep injections of calomel, and he should learn the history of the drug from Paracelsus to Fournier. He should know everything relating to the iodides and the bromides, and should present definite reports on cases in which he has used them. He must know the use of the important purgatives, and he should have a thorough acquaintance with all forms of enemata. He should know cinchona historically, its derivatives chemically, and its action practically. He should study the action of the nitrites with the blood-pressure apparatus, and he should over and over again have tested for himself the action,
or the absence of action, of strychnine, alcohol, and other drugs supposed to have a stimulating action on the heart and blood-vessels. While I would, on the one hand, imbue him with the firmest faith in a few drugs, 'the friends he has and their adoption tried,' on the other hand, I would encourage him in a keenly sceptical attitude towards the pharmacopoeia as a whole, ever remembering Benjamin Franklin's shrewd remark that 'he is the best doctor who knows the worthlessness of the most medicines'. You may well say this is a heavy contract, and one which it is impossible to carry out. Perhaps it is with our present arrangements, but this is the sort of work which the medical student has a right to expect, and this is what we shall be able to give him when in his senior years we give up lecturing him to death, and when we stop trying to teach him too many subjects.