or which have their origin in fibrous tissues, joints, or nerves irritated by the poison or poisons responsible for the coincident arterio-sclerotic disease.

After haemorrhage and thrombosis on the one hand, and pain on the other hand, which form the basis of the symptomatology of arterio-sclerotic disease, there follow a large group of signs and symptoms dependent on disturbance of vascular function. It is, of course, appreciated that functional disturbance may occur without structural defect; nevertheless, functional disturbance is so frequently associated with structural defect that its presence suggests a lesion. Common symptoms in arterio-sclerotic disease are flushings and blotchiness of the skin; in more marked cases there are Raynaud-like symptoms, and other circulatory disturbances. The physical sign which has received most attention is an alteration in the blood pressure. It is beyond the scope of this communication to discuss the significance of raised blood pressure in relation to arterio-sclerotic disease. In general I think that a raised blood pressure is significant of arterio-sclerotic disease; but it may be that it has no such significance in those cases in which the blood pressure though raised maintains a steady level, little affected by exercise or by medical treatment.

THE OCCURRENCE OF ARTERIO-SCLEROTIC DISEASE.

In the previous paragraphs I have attempted to present arterio-sclerotic disease as the active phase of the lesion arterio-sclerosis, and recognizable by certain signs and symptoms due to activity of the lesion. It will give the condition greater distinctness if one considers the clinical entities of which it may form part.

On the basis of its histology, diffuse hyperplastic sclerosis is the most active or acute form of arterio-sclerosis, and it is therefore in this form that one would expect the signs and symptoms of arterio-sclerotic disease to be most evident. In previous communications⁴ I have given reasons for the opinion that persistent hypertension is in itself evidence of diffuse hyperplastic sclerosis; and it is, therefore, in those clinical conditions in which persistent hypertension is present that one would expect to find arterio-sclerotic disease. This in fact is the case, and the best examples of arterio-sclerotic disease are to be found in hyperpiesia, chronic interstitial nephritis, and chronic nephritis.

There is reason to believe that the more chronic forms of arterio-sclerosis also have their active phases which may be capable of clinical recognition. In such cases, though there may be no alteration in the blood pressure, evidence of activity of the arterial lesion—that is, evidence of arterio-sclerotic disease—may be present in retinal haemorrhage and exudates, and in the presence of haematuria, either gross or only discoverable on careful microscopical examination of the urinary deposit. In one such case, that of an old man with massive retinal exudates, there have been changes in the form of the electrocardiograms taken from time to time—at one time indicating a right bundle-branch lesion, and at another time showing its recovery; it is possible that these electrocardiographic changes are the result of vascular disturbance, or it may be that they result from the action of the poison responsible for the vascular disease. It is in this direction at any rate—in the most careful examination of the cardio-vasculo-renal system, both in regard to its structure and function—that the signs and symptoms of arterio-sclerotic disease are to be sought.

TYPES OF ARTERIO-SCLEROTIC DISEASE.

In order to give the conception of arterio-sclerotic disease clearer definition, it may be usefully compared with diseases of the joints; thus, in a recent textbook of medicine Sir William Willcox divides disease of joints into two classes: those of known causation and those of obscure causation. In the first class are grouped (1) traumatic arthritis, to which there is a parallel in arterial disease in arterio-venous aneurysm; (2) specific infective arthritis, of which a number of examples are known in arthritis, and of which tuberculous and syphilitic endarteritis are the best examples in arterial disease. Under the same heading is included gout, and its parallel in vascular nomenclature, by reason of its being a

definite entity but of unknown causation, is thrombo-angiitis obliterans or periarteritis nodosa. Again, there is the neuropathic type of arthritis, and with this may be compared the endarteritis present in the late stages, at any rate, of Raynaud's disease.

The second main class—arthritis of obscure causation—has its parallel in arterio-sclerosis, and I would suggest that diffuse hyperplastic sclerosis in the most general way is comparable to the more acute forms of polyarthritis, known by such names as rheumatoid arthritis, subacute or chronic infective arthritis; while the senile type of arterio-sclerosis is again in a most general way comparable to the osteo-arthritis type of joint lesion.

To my mind the subject of arterio-sclerosis is simplified by this comparison, and I think that some of the obscurity which has surrounded the subject in the past has been due to a failure to recognize the part that the process of inflammation plays in the production of the arterio-sclerotic lesion. It has been due in part to the overemphasis of trauma as a cause of arterial disease, to the exaggerated importance attached to high blood pressure as an etiological factor. Senility has also been overemphasized, and it probably plays a more important part in determining the form of the lesion than in determining its onset.

At the present time the etiology of arterio-sclerosis is veiled in obscurity, but the opportunities of discovering its causation will be multiplied when we are in a position to recognize its onset and follow its course clinically. To do this we must study the signs and symptoms of activity of arterio-sclerosis; we must, in fact, learn the symptomatology of arterio-sclerotic disease.

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A British Medical Association Lecture.

NOTES ON MEDICAL PRACTICE.

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On Prognosis.

PROGNOSIS is one of the legs of the tripod when we are dealing with disease, the other legs being diagnosis and treatment. The patient asks, "Am I going to get well?"

I have always been interested in the dogmatism of youth, which knows and seldom hesitates to give its opinion; of course the patient likes this. Yet surely as a rule it is experience of cases, and constantly seeing them for years, that enable the doctor to give sound and wise advice in this matter of prognosis.

Increasing age has its advantages and disadvantages to the doctor. As regards active surgery there is a limit beyond which it would be foolish for a man to go. Yet, providing that a man keeps up his reading and his powers of observation, also allowing at the same time that he is seeing cases, then age is a great advantage in prognosing the particular disease under his care. A man who has watched carefully his work for forty or even fifty years ought to be, and must be, in a better position to give a sound prognosis than a man who has been in practice for a comparatively short period. There is the exception—that one man may in a few years see and observe more than another man who has been longer at work. Still, the rule I have laid down is a wise and sound one.

On Diagnosis.

I am inclined to the view that diagnosis is not thought of paramount importance, or perhaps it is more just to say that not sufficient time in thought, word, and deed is given to diagnosis. There is a tendency of late, I have noticed,

among many men, especially surgeons, to get on with the case—that is to say, treatment must be begun at once before the case is thoroughly considered. There are patients in which a lightning diagnosis is absolutely necessary, such as the acute abdomen; but let us remember that there is such a thing as a chronic abdomen, in which time and thought are required.

There is another point worth thinking over—that is, to use all our natural powers before using all the modern methods that are so much in vogue just now. The older physicians took great notice of the appearance of their patients, their history, and the manual examination. Quacks have often scored over us in these points. The new modes are of great value, often indispensable, but conditions still exist in which they are practically impossible of application on account of the expense, skill, and time required. The day may come, and probably will come, when every doctor will have the opportunity of obtaining these requisites, but for the present many men must wait in patience, and meanwhile let us use all our natural powers to their greatest extent.

Ophthalmoscopic and Laryngoscopic Examinations.

The enormous strides that the medical and surgical specialties have made renders it almost impossible for the ordinary doctor to keep in line with all the diagnostic instruments now recommended. Yet if the big things were taught, and the necessary instruments for complete diagnosis used, comparatively few mistakes would be made in practice. With the modern electric ophthalmoscope there is little or no difficulty in learning to examine the back of the eye; in my opinion it should be used by every practitioner, and the same remark applies to the laryngoscope. I can speak with some experience; for many years I have found that the use of these instruments has been of the greatest service to me in practice, and I have been able to teach my house-surgeons in a very short time the use and value of the ophthalmoscope.

I am not advising that the operations that may be necessary to perform when the diagnosis revealed by the use of these two instruments has been made should be done by the practitioner, but rather that he should be able early to detect the condition, and then be able to place the case where the treatment can be skilfully carried out.

Acidosis in Children—sometimes called Cyclical Vomiting.

I do not consider that this is a common condition, but I believe that mild cases are often overlooked. When one is called to see a child suffering from vomiting it is important to think of this condition. The attack may last three or four days, and recur at intervals varying from three weeks to three months. It may come on apparently in perfect health, and may be of an alarming character. The vomit and the breath of the patient are characteristic. Alkalis, either by mouth or rectum, and 5 per cent. glucose by the rectum should be given. I mention this condition in order that a correct diagnosis may be made early and no suggestion for operation made.

The Early Diagnosis of Appendicitis in Children.

I know of few greater difficulties in practice than the early diagnosis of appendicitis in children. Such symptoms as vomiting, furred tongue, constipation, rapid pulse, rigidity of right rectus, resistance in right iliac fossa, even superficial tenderness, are not the earliest symptoms and signs. Sudden pain, beginning often over the umbilicus, then extending into the right iliac fossa, with deep tenderness at McBurney's spot, with a rising temperature, are the most valuable signs.

One often meets with a general slight abdominal tenderness in children, or even acute abdominal pain occurring after some error in diet; for a short time the pain may be severe, but it soon passes off, and there is rarely, if ever, any rise of temperature. Another important and significant point to be remembered is that this class of case is often accompanied with diarrhoea, which does not occur in appendicitis. I think it may be said that as a rule

in children an appendicular abscess is less frequent than in the adult, and there is a practical point to remember in this connexion—that it is more important to operate early in children than in adults, so that the risk of a perforation may be avoided. As I have already made note of in another article, a prolonged operation is often avoided by operating at the earliest stage of the disease, for children cannot sustain a tedious and slow operation.

Operations on Young Children.

In watching operations for many years among patients of all ages I have been particularly struck by the fact that young children, as compared with adults, can ill stand serious and prolonged operations. I mention this important fact, for surgical books seldom or never refer to it; it is important, when operations on children are undertaken, to remember that they should not be prolonged, and only such as is needful to the required relief. Another point worth considering is whether it is right or wise to proceed with a serious operation unless immediately necessary.

I have seen a great number of cases of acute appendicitis of all sorts and conditions. My experience leads me to the conclusion that if the case is seen quite early, say within twelve or twenty hours of the attack, the appendix should be removed; but if seen when an abscess has formed, I believe that the case will do better by simply draining the abscess with a tube, rather than prolonging the operation to take out the appendix. Of course, I am speaking of children's cases.

The Operation and After.

When the operation is over the case is not then finished. No operation can be considered successful in the big meaning of the word unless the patient is benefited. Every surgeon, when thinking about the advisability of the operation, must and ought to take into account not only the direct and the immediate effect, but the ultimate benefit likely to follow. I shall be told that this vision of the future is usually thought out, but from a pretty long experience I think that often it is not. However skilful a surgeon is, much more is required of him than the time he spends on the operation.

There is no need for me to fill in those important after-details; it is sufficient to mention that they are most urgent from medical and nursing standpoints. In fact, very often more skill and real knowledge are required after than during the operation. I have added this note on account of an observation made to me a short time back by a doctor. He had had a colotomy done for malignant disease of the rectum; it was quite successful, but my friend said that the surgeon did not seem to take the same interest in the after-treatment as he had done in the operation. In this particular instance it is understandable that this might happen. What I am really driving at is this—that every surgeon should be in knowledge a physician as well as a surgeon.

Treatment of Early Mental Cases.

We are all in trouble when early mental cases come under our care. It is always difficult to tell whether the mental condition is the beginning of a real chronic illness, or whether it is only going to be a temporary state. There are certain early mental cases—such as those associated with pneumonia, puerperal states, post-operative ones—in which we can generally give a good prognosis; but we are constantly at a loss how and where to treat those connected with the so-called classic manias, such as dementia praecox, confusional insanity, etc. At present we have in this country no places, or very few, where such patients can be placed temporarily, without certification, but under skilled observation, and within reasonable prices.

We are hearing just now a good deal about detecting the earliest symptoms and signs of our patients' diseases, so that the disease may be treated at once before it becomes chronic; although the private general practitioner alone is able to treat these early cases, yet his opportunities for so doing are often hampered by the lack of means and methods.

In my opinion he should be able to watch these people, and also to treat them in institutions established for them, where the expense associated with their treatment does not exclude any class of patient. America is far in advance of us in this matter.

Rest in Rheumatic Fever.

I should say that the tendency is to keep many of our cases for too long a period in bed, but there are some where prolonged rest is absolutely necessary, and I wish particularly to draw attention to rheumatic fever, when the heart is affected. The reason is obvious, for when the valves or the walls are poisoned and weakened by the disease, they are not fit, nor are they capable of the extra exertion required of them, to maintain the body in the upright position for walking. It is often difficult to get this rest carried out, whether in hospital or in private practice, for the patient often looks and appears well. In hospitals the house-physician says that the bed is required for an urgent case, and in private the relations or friends often think that the patient is being coddled. Still, there can be little doubt that for the future welfare of our patient we must use all our persuasive powers to enforce the rule.

Should Patients be told of their Ill Condition?

This question is as old as the hills. There are two extreme views—one is never to tell a patient when ill the real condition, except when the prognosis is in his or her favour; the second is given by the "conscientious" doctor who always tries to give what is, in his opinion, the exact state of the patient, whether bad or good. However, we must not forget, when a patient consults us and asks us to give an accurate and honest opinion as regards his present and future health, that he really often only wants a favourable opinion; if the opinion is unfavourable he is annoyed and will very probably take further advice.

Most of us, I suppose, would act in the following manner. Considering hope to be one of the greatest helps to recovery from disease or operation, we should give this hope to the greatest possible extent to our patient. I may say in passing that the quality of the hope given and its effect depend very largely on the doctor himself. Some men have little or no way of expressing themselves for the help of their patient. But there are exceptions to the rule. When it is necessary that the patient should know the prognosis to be a bad one, for often he honestly desires to know this, for several reasons—these reasons may be religious or business—then an open and frank advice should be tendered.

There is one other point we should never forget—namely, that we must not compare our student days' views on the subject of prognosis with those we gather from private practice. Our private patients are in a much better health condition than are those met with in hospital practice. We find in later life that the outlook in cases we are apt to condemn as serious when we enter practice is much more favourable than we had supposed.

The Patient's Views on his Future Treatment.

There are times and conditions in the conduct of a case when it is wise that the opinion of the patient should be taken. It will be sufficient to name one or two instances in which I should always consult my patient.

I will take perhaps rather an exceptional case, which I met with just lately—the presence of a cervical rib. In such a case we should ask the patient whether symptoms are sufficiently irritating or painful enough to interfere with his work, and also if he wishes something to be done to relieve him. Again, in a case of gastric or duodenal ulcer, if the patient bitterly complains of his symptoms seriously affecting his health and his work, then their presence may weigh down the scales in favour of operating.

In speaking upon this point it is taken for granted that the case has been examined thoroughly, and all the pros and cons judiciously weighed. In some urgent treatment, whether operative or otherwise, is at once demanded, but there are others in which operative or even ordinary treatment had better be suspended. I am speaking of the borderline cases, and it is often in these that the patients may

assist us as to our treatment. There is a tendency among some to recommend operative interference too lightly, as there may be also those who delay too long. There is a chronic abdomen as well as an acute abdomen. But let us remember that no operation is performed without some risk, and it has often happened that it was in the simple or expectant cases our misfortunes occurred.

The Treatment of the Relations and Friends of the Patient.

It is always remembered that the relations of the patient often require almost as much treatment as the patient. The patient as a rule can be dealt with directly or through the nurse. There are exceptions, but providing the doctor has the confidence of the patient—and without this he had better not undertake the case—the treatment can be honestly carried out; but where the relation or friend comes in with all his suggestions and his constant questionings, then the trouble to the doctor is doubled and the conduct of the case often seriously interfered with.

I have often thought that the public do not always realize or understand what a professional fee includes. It means not only the direct treatment of the patient, but also the thought for the future welfare of the patient at times when the doctor is at home, and also the interviews, letter writing, and telephone messages by the relations. It is well sometimes that the public should be informed of these matters.

On High Temperature.

In a number of cases we find the temperature varying between 100° and 103°, without being able to discover a cause. I believe that many of these cases are best explained by the absorption of poisonous material evolved during gastric or rather intestinal digestion. Our fathers and grandfathers knew better than we do the value of a blue pill or calomel, followed by a black draught in cases of what they called, I believe rightly, gastric fever, implying that these cases were due to absorption by the stomach or intestine—probably the colon—of some offending material which, acting through the circulation on the heat centre, set up fever. To-day we call this intestinal toxæmia.

The old treatment, although empirical, was antiseptic and eliminant, and the patients almost invariably said that they were the better for it. A high temperature may or may not be deleterious, and certainly it is not to be knocked down on every conceivable occasion. If we could always find out the cause, the treatment might then become easy, but often we have to wait, and it is not unreasonable to suppose that in some instances the extra heat produced in the body is protective.

There is a point in connexion with high temperature to which I wish to draw particular attention, for it may easily be overlooked—namely, bacilluria, or the presence of *B. coli communis* in the urine. A short history of a case lately under my care in the Royal Victoria Hospital, Folkestone, will best illustrate this.

A girl, aged 17, single, not pregnant, was sent in as a case of acute appendicitis. Her past history was that she had suffered from frequency of micturition and pain during the act for three or four weeks, but, feeling quite well, had paid no attention to these symptoms.

On admission there was rigidity and tenderness in the right hypogastric and iliac regions, also in the right loin, with vomiting, but these symptoms entirely disappeared the next day, and never reappeared. I saw her two days after admission, and the only symptom or sign discoverable—apart from the urinary condition—was a high temperature, intermittent in character, reaching 104° at night. This temperature condition lasted for four days. The urine on examination was acid, albuminous, and some pus cells were present. In view of this urine condition in conjunction with the case history, a provisional diagnosis of infection of the urinary tract was made. On a catheter specimen being examined bacteriologically, a heavy culture of *B. coli* was obtained.

The pathology of this disease I need not enter into. The treatment is simple, and as a rule the result is good. Large doses of alkalis are given until the urine becomes alkaline, and when this occurs the temperature usually returns to

normal; when this takes place urotropine is given until the urine is free from bacilli. If the case is persistent—that is, if the *Bacillus coli* can be obtained from a catheter specimen of the urine after the above treatment—then if an autogenous vaccine be used a permanent cure generally results.

The case I have quoted apparently quite cleared up. Its interest to me was to note how easily one might have missed it.

Tuberculous Peritonitis.

As a rule there is little difficulty in diagnosing this condition—I am referring particularly to the form which occurs in children. I have seen a large number of such cases, and what has always struck me about them is the extraordinary recovery that takes place, even when the most extreme type of the disease has been present.

There is little doubt, I think, that the tubercle bacilli are of the bovine type, which does not seem to have the same destructive power as the human; or it may be the abdominal organs and their coverings do not afford a soil helpful for the growth of the bacilli; or, again, the protective properties of these organs may be antagonistic to the bacilli's growth. At any rate, we know clinically that when bacilli attack any organs other than the lungs and brain, the prognosis is more favourable.

We meet this disease under two conditions, or rather two types—the ascitic and the plastic—the former characterized by a large amount of fluid, and the latter by tumours and irregular masses.

I am strongly in favour of medical rather than surgical treatment. I would trust to plenty of fresh air, good food, and particularly sun whenever possible. I rarely or never recommend laparotomy. I know that this is contrary to most surgical minds, but if we only have patience and allow sufficient time for rest under favourable conditions the reward will be a very large percentage of recoveries in the full sense of the word. I have not seen the surgical success which most of our books and surgeons suggest to us.

Acute Red Rash following Wounds.

We must have all seen universal scarlet skin rashes following on wounds, whether these have been produced by the surgeon or by infectious disease. Many years ago Mr. Howse, then assistant surgeon at Guy's Hospital, wrote a paper in the *Guy's Hospital Reports* attempting to prove—which he did to his own satisfaction—that these rashes were due to the infection of scarlet fever. The diagnosis between scarlet fever and the ordinary septic causes is, of course, most important, and a mistake may lead to disastrous consequences.

I have come to the conclusion that these rashes, although exceedingly like that of scarlet fever, are almost invariably due to septic causes, but I would make the proviso that where there was a possibility of any scarlet fever infection in the immediate neighbourhood of the patient, I would take all the ordinary precautions which are adopted in an infectious case. It is almost needless to say that it is when the rash first appears that the difficulty of diagnosis arises. In a few days the diagnosis settles itself, but then it may possibly be too late.

On Difficulty of Breathing in the Obese.

In some cases we are primarily consulted for difficulty of breathing, which does not improve until a general course of treatment is adopted. The cases I am thinking of occur both in women and men, at ages between 50 and 70. These patients are stout, indolent, well-to-do, and enjoy the good things of the table. It will be found on inquiry that the shortness of breath is not permanent, and is often associated with a particular increase or unsuitability of food. On examination the left heart seems enlarged, impulse feeble, and the pulse is quick and weak; the bowels are constipated, and albumin may be present in the urine. Such patients sometimes complain of tenderness and weight over the liver, and a general lassitude of mind and body; their nights are often sleepless or restless. At first sight one is tempted to give heart tonics and stimulants. I am not prepared to say that this is wrong, but under these, without other means, the patient does not improve. The diet requires to be very carefully regulated, food given in small bulk, solid rather than fluid, and about every three

hours. The bowels must be kept free; perhaps the most valuable drug at this stage is calomel given frequently in small doses. It is advisable for the first few days, if possible, to keep the patient in bed, as the free opening of the bowels may produce faintness and syncope if the patient is up and about. As soon as the patient is better, moderate exercise should be insisted on, and a general plan of moderation in all things enjoined.

I think that the breathing difficulty is brought about by the flabby condition of the heart setting up some dilatation, and that this is followed by pulmonary and liver congestion, the original cause being overloading of the abdominal organs from excessive or unwholesome foods, together with the absence of exercise or good air, and the inability to dispose of the waste products. At any rate, my experience is that no amount of tonics, whether cardiac, nervous, or intestinal, have any real effect until the patient adopts a rational system of living.

THE USE OF LIPIODOL IN THE DIAGNOSIS OF BRONCHIECTASIS.

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In certain cases presenting clinically the signs of a cavity in the upper lobe of one or other lung the persistent absence of tubercle bacilli from the sputum and a somewhat indefinite radiograph of the thorax suggest the possibility of bronchiectasis rather than tuberculosis, and the diagnosis is often extremely difficult. In children tuberculous cavities are not uncommon in the lower lobes of the lungs, and, on the other hand, cases of hepatic abscess and of subphrenic abscess produce such obscure signs in the lungs that it is sometimes very difficult to determine whether suppuration is occurring above or below the diaphragm; here again ordinary radiographs often give little or no help. By injecting lipiodol before employing x rays, however, a clear picture of the bronchi is obtained, bronchial dilatation of even slight degree is definitely shown, and localization of vague shadows becomes very much simplified.

Lipiodol, a vegetable oil containing 40 per cent. by weight of iodine, was first introduced into radiology by Sicard, for the localization of tumours of the spinal cord,¹ and Forestier, who suggested that it might be used for the diagnosis of broncho-pulmonary affections, and it was later employed for this purpose in adults by Sergent and Cottenot.² Lipiodol has been used extensively³ by one of us (P. F. A.-D.) in the case of children clinically supposed to be suffering from pulmonary tuberculosis in whom the diagnosis was not confirmed by other means—examination of sputum, inoculation of the sputum into guinea-pigs, complement fixation tests. Signs of a cavity in the middle or lower third of the lung in such cases might equally well be due to bronchiectasis, interlobar pleurisy communicating with a bronchus, pulmonary abscess, or hydatid cyst; by the use of lipiodol definite diagnosis has been possible.

Cases of frank tuberculosis should not be submitted to this method, for the congestive action of the iodine may produce harmful effects, and even in doubtful cases an ordinary radiograph may clearly indicate a diagnosis. There remain a certain number of cases where its use is invaluable.

Method.

The patient is placed in position on an x-ray table so that a photograph may be taken immediately after the lipiodol is introduced; a preliminary injection of morphine is given half an hour previously. A pillow is placed under the shoulders so as to extend the neck, and the skin is prepared as in the ordinary tracheotomy operation. Two syringes, of 2 c.cm. and 5 c.cm. capacity, are prepared, containing 1 per cent. novocain, and the lipiodol is sterilized in a container in a water-bath. A strong syringe of 20 c.cm.