had been present. For two or three days after the onset of symptoms the temperature was raised to 100°-101°.

II. Possibility of Rupture by Pressure.

It is generally supposed that rupture of a cyst of the pancreas can only be produced "artificially" by some direct and violent blow. In this case the force was not of this nature. The man's own statement, confirmed by the opinion of other men present, make it strongly suggestive that the accident, producing indirect force, may have been the cause of the rupture. If not, the coincidence is remarkable; and why should it have occurred at such a time as that when he was subjecting himself to a strain of an unusual nature and degree?

I suggest that it is right to consider, under the very definite circumstances, whether the cause of rupture may not have been due to a severe and violent contraction of all the abdominal muscles, and especially the upper ones, increasing the tension in a previously tight cyst, probably very thin-walled. I recognize the improbability, but we are dealing with a very marked and unusual condition, which, to my mind, is very difficult to explain in any other way.

I have been unable to find any record of a pancreatic cyst being ruptured in any other way than by direct force, neither do I, personally, find it easy to come to any other conclusion, especially when we consider the mechanical conditions of fluid enclosed in a movable, more or less elastic bag. All I state is, that such force was not present in this case—that a rupture of some sort undoubtedly occurred—and that it is very unsatisfactory to dismiss the fact as a mere coincidence, in the face of the various statement of witnesses. The results of suddenly increased intra-abdominal pressure are sufficiently definite in other conditions, such as hernia.

III. Medico-Legal Considerations.

The man naturally claimed compensation; he was not advised to do so, but he thought he would "take his chance." The case came before Judge Templar. Owing to its unusual nature and uncommon occurrence, it attracted some interest, and medical evidence for the man was chiefly based upon the assumption that the onset and severity of symptoms was more than could be accounted for by mere independent coincidence—where a possible cause was so plainly and unmistakably present. No more than this could be said. The cause was described as possible (not probable) unless associated with the proved genuineness of the particular definite circumstances of this individual case.

Medical evidence for the defence maintained chiefly that no such accident was on record, as it was impossible to believe that force of such a nature could produce an accident of such a kind.

No explanation was attempted or offered of the nature of the condition or the cause of the rupture; no opinion as to whether the cyst was pre-existent, became suddenly inflamed, or due to a ruptured capsule of the gland.

His Honour, quite in agreement with the opinion of all fair-minded people present, prompted by his medical referee, Dr. Beatty of Stockton, gave his opinion against the man, his main reason being that no such case had previously been on record, although he did not deny that it was possible for it to occur.

Thus it remains as a coincidence, without any satisfactory surgical explanation.

REFERENCE.

Green's Encyclopaedia, Article on "Pancreas."

THE King has been graciously pleased to confer the Coronation Medal on Dr. W. Allan Jamieson, Surgeon to the Royal Company of Archers, the King's bodyguard for Scotland.

THE following office-bearers were elected at the annual meeting of the North-Western Branch of the Society of Medical Officers of Health: *President*, Dr. Sydney Marsden; *Treasurer*, Dr. H. H. I. Hitchen; *Secretary*, Dr. T. W. N. Barlow; *Librarian*, Dr. M. A. Arnold. A committee of four members was also elected, and Drs. J. J. Buchan and Meredith Young appointed representatives of the Branch on the General Council of the Society. The Branch meets in Manchester on the third Friday of each month from October to June.

ON THE OCCURRENCE OF AN INTRACELLULAR STAGE IN THE DEVELOPMENT OF TRYPANOSOMA LEWISI IN THE RAT-FLEA.

BY

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(Preliminary Note.)

IN studying the early phases of the developmental cycle through which the rat-trypanosome passes in the rat-flea, we have found that the trypanosome penetrates into the cells of the epithelium lining the stomach (mid-gut) of the flea, and there goes through a process of multiplication. Since no such phase has been observed hitherto, so far as we are aware, in the development of any trypanosome in its invertebrate host, and since, moreover, this discovery may throw some light on certain peculiar features of the development of the pathogenic trypanosomes, we consider ourselves justified in bringing forward a brief account of our observations, so far as they have gone, without further delay, hoping to give later a full and detailed account, with figures, of this and other phases of the development.

The intracellular phase of the trypanosome has been seen by us in fleas taken from the breeding-cage, not previously exposed to infection, and fed on infected rats during a known period of time, as early as twelve and as late as thirty-six hours after feeding; but our observations are not yet sufficiently extensive to enable us to place precise limits of time to the duration of this phase. We can only say at present that we find it most abundant about twenty-four hours after the flea has taken up the trypanosomes from the rat, and that it occurs in all parts of the epithelium of the stomach, from close behind the proventriculus to the pyloric region; that is to say, over the whole extent of the true mesenteron or mid-gut, lined by the embryonic endoderm or hypoblast. In this region of the digestive tract the epithelium, as is well known, does not secrete a chitinous cuticular lining to the gut, as in the regions before and behind (stomodaeum and proctodaeum).

The actual penetration of the epithelial cell by the trypanosome has not been observed by us up to the present, but trypanosomes of quite ordinary appearance, which have, apparently, effected an entrance very recently, have been seen frequently within the cells. The earliest change which such a trypanosome undergoes is that the body assumes a bulbous form which may be compared to that of a pear with a stalk, or of a tadpole with a long tail. The pear-shaped body is easily seen to be produced by the doubling on itself of the posterior two-thirds or three-fourths, approximately, of the body of the trypanosome, while the anterior portion of the body, with the flagellum and undulating membrane, forms the stalk or tail. In stained preparations it is seen that the folding-up of the body brings the kinetonucleus in front of the trophonucleus; the result is a flagellate of pseudo-crithidial form, easily distinguished from the true crithidial forms both by the fold of the cuticle running down the middle of the body, and by the fact that the flagellum does not pass straight to the kinetonucleus along the undulating membrane, but curves round the rounded posterior end of the body to run forward (apparently) to the kinetonucleus. Seen in the living state, these pear-shaped forms appear slightly flattened, as is to be expected from their mode of formation; they are in incessant movement within the cell, exposing now their flat surface, now their edge, to the view of the observer; and the flagellum and undulating membrane can be made out plainly, as a rule, giving an appearance as if the stalk of the pear tapered to a fine point, but in a few cases the stalk appears of even thickness, and evidently consists of the flagellum alone in the early stages. The body itself is far from being fixed and rigid in its contours; on the contrary, it shows continual changes of form of the kind that are termed, in the Flagellata generally, "metabolic," as distinguished from true amoeboid movements, form-changes

due to the incessant, restless movements of a contractile, protoplasmic body, within a thin, yielding envelope or cuticle. In preparing the stomach wall for microscopic examination it frequently happens that epithelial cells are ruptured or burst by the pressure of the cover-glass, setting free the trypanosomes, of which there may be several, four or five, within one cell. Then these pear-shaped forms, if watched carefully, can be seen to uncurl themselves and assume the form of free trypanosomes; sometimes they curl up again and uncurl several times, swimming actively the while.

Within the cell the pear-shaped forms described in the last paragraph are seen to grow in size, becoming at the same time more uneven and irregular in their contours, so that the form of the body can only be described as block-like; the outline, so far as it is possible to describe contours which are changing incessantly, is rounded or squarish; the "tail" is distinct, tapering from a relatively broad base to a fine point, and always in motion; the metabolic form-changes proceed without interruption, so that the contours of the body undulate and change every moment, and the body as a whole assumes various shapes, often returning to the pear-like form for a brief space of time. The block-like forms grow until they reach a size relatively very large. In some cases they appear to be lodged in a more fluid, but not sharply delimited, portion of the cytoplasm of the host-cell; in other cases they appear to be within a vacuole limited by a distinct wall or membrane, and in many cases the vacuole is set free by rupture of the cell in making the preparation. Free vacuoles of this kind exhibit a degree of stability and persistence which indicate that the host-cell may secrete an envelope or capsule of some kind round the intruding parasites, of which there may be one, or several in various stages of development, in each such vacuole. When the block-like forms become of large size, the movements of the flagellum cause them to revolve and rotate within the cell in an irregular, jerky manner. It can be seen clearly that forms moving in this manner push and bump against the cell nucleus and against other forms present in the cell and cause them to move also, showing that they come into actual contact with them.

When the block-like forms have reached the limit of their growth, changes take place in them which cannot be followed in full detail in the living condition, but which can be seen to consist in a division of the large block-like body into a number of daughter trypanosomes by a process of multiple fission which goes on within the periplast of the parent form. By the time that the block-like form has attained its full size its nuclei are seen to have divided into a number of daughter-nuclei; and while still agitating its flagellum and changing its contour, the body is seen to exhibit a striated appearance in its interior. Very soon after this a marked change takes place; the body becomes spherical, and ceases to show metabolic form-changes; the tail disappears altogether, and the sphere as a whole becomes almost motionless, except for slight oscillating or trembling movements due to the increased agitation of its contents. When carefully examined, it is now seen that the spherical body contains in its interior a number of distinct trypanosomes, squirming and wriggling over each other in the confined space like a bunch of eels in a sack; to their movements are due the oscillatory movements of the sphere, which since the disappearance of the tail can perform no movements of itself. The enveloping membrane of the sphere is seen to become more and more tense, the movements of the contained trypanosomes ever more active and vigorous, and everything betokens the approach of the crisis, which comes finally with startling suddenness; the sphere bursts in an explosive manner and liberates a mass of perfectly-formed trypanosomes. The explosion can be seen best in spheres which have been set free accidentally from the host-cell in the process of manipulation; then the sphere is seen to burst suddenly, and the trypanosomes scatter in all directions. Under normal conditions, however, the spheres burst within the cytoplasm of the host-cell, and the liberated trypanosomes are seen moving actively about for some time within the cell, from which they escape one by one. In one case the formation of three spheres within the same cell was observed; each sphere grew to its full size, burst, and liberated its bunch of trypanosomes within the host-cell, first one sphere and then another.

It is difficult to estimate exactly the duration of the block-like and spherical stages, because when the parasites are under observation between slide and cover-glass their vitality is soon impaired, and they gradually become moribund. From some of our observations we received the impression that the intense illumination of the field of the microscope is injurious to them. Some parasites under observation were seen to become moribund, and at last perfectly quiescent, but on moving the slide others were found in other fields quite active; and, when these died off in their turn, active forms were found in a third field on the same slide. From a number of cases that we have observed, and especially from those which have been watched when quite freshly put up, it is clear that the final spherical stage may last in some cases from about a quarter to half an hour, but in other cases for a much shorter time, not more than a few minutes. The following series of observations, jotted down by one of us at the dictation of the other, who was watching through the microscope, may serve as an example of the changes observed and the times they take to fulfil themselves:

- 12.13. An active sphere was seen within a cell, evidently full-sized, but still metabolic; it revolved with jerky, irregular movements by means of the flagellum, which was clearly seen; its contents appeared to be divided up or in process of division.
- 12.26. Condition much as before, but the contents appeared to be more distinctly divided up, and the daughter-individuals to be performing independent and separate movements, squirming over one another like eels; movements of rotation and metabolic form-changes still continuing; flagellum still visible.
- 12.32. Flagellum still visible.
- 12.36. Revolving movements and metabolic form-changes much slower; flagellum not seen.
- 12.37. Form more perfectly spherical, alterations in contour less marked, due apparently entirely to the very active movements of the contained trypanosomes, which could be seen very clearly; no rotating movements; flagellum looked for carefully, could not be seen.
- 12.40. Contour of sphere tense, almost rigid.
- 12.41a. Burst!

The trypanosomes set free by the bursting of the spheres are normal forms, complete in all respects, and of a size equal to, or slightly exceeding, that of the ordinary *Trypanosoma lewisi* of the rat's blood; the undulating membrane extends down the body to the neighbourhood of the kinetocore, which is situated near the posterior end; briefly expressed, these forms are perfectly trypaniform, and not the least crithidial, as regards their internal structure. Their shape and movements differ slightly, however, from those of the ordinary blood-trypanosomes; the body is stiffer, less sinuous in its movements, slightly swollen towards the posterior end, which is sharply pointed; the anterior end of the body tapers very gradually, and the flagellum is long. When moving freely in the fluid medium they travel fast with the flagellum directed forwards; but they may be seen frequently with the hinder end of the body in contact with the epithelium, the flagellum undulating rapidly, and giving the impression that they are butting against the cells with their hinder ends, which may possibly be the manner in which they penetrate and enter the cells. As regards the number of trypanosomes liberated from a sphere, it is difficult to be certain; in the living state we have frequently tried to count them, and came to the conclusion that the number was about eight; but in our stained preparations we have found in one case a sphere containing thirteen couples of nuclei, each couple consisting of a trophocore and a kinetocore; and in another case there were eighteen trypanosomes in a bunch, which appeared to represent a sphere recently burst. The number produced would appear, therefore, to be irregular and indefinite, and this is borne out by observations on the living objects, since we have seen a very small sphere burst in one case, and in another we saw a sphere of very large size, far beyond the usual dimensions. We have the impression, however, that the normal or average size of the sphere is one that would liberate eight trypanosomes, and that this may be taken as the normal standard of capacity, so to speak, of the sphere, but that it may sometimes be much less or much greater.

The above account of the intracellular multiplicative phase is founded almost entirely on observations made by us on living material; it amounts, summarized briefly, to the following: Trypanosomes penetrate into cells of the epithelium of the stomach, where, retaining their flagellum

and undulating membrane, they double upon themselves and grow to a large size, performing metabolic movements and continually altering their form the while. They gradually round themselves off until a spherical stage is reached, when the flagellum and undulating membrane disappear and the metabolic form-changes cease; meanwhile the contents of the body within the periplast have divided completely into a number of daughter-trypanosomes which writhe about and twist over each other within the maternal periplast-envelope like a bunch of eels. The envelope becomes more and more tense, and finally bursts with explosive suddenness, setting free the daughter-trypanosomes, which are perfectly formed and of full size, and escape from the host-cell by their own activity.

This development is less easy to follow in full detail in stained preparations, chiefly on account of the difficulties of technique. It is not easy to get good preparations of the intracellular phases while still within the cells, and even when they are set free the spheres are difficult to stain properly; either they appear in the preparations as opaque masses, if the stain is insufficiently extracted, or on the other hand too much stain may come out, and details of structure are lost, especially as regards the flagellum, which may become invisible in consequence. We have, however, confirmed in our preparations all essential points of the development described above, and we hope soon to obtain a complete series of the stages of the development.

We defer also to a later communication a number of questions which naturally arise with regard to this developmental phase, the first of which is: How is this intracellular multiplicative stage related to the developmental cycle, as a whole, of the trypanosome in the flea? We are not prepared to discuss this point fully at the present moment, but from all that we have seen we are inclined to think that this phase marks the beginning of the development—that it is, in short, the first act, so to speak, of the cycle within the flea. The intracellular phases are by no means to be found in every flea examined twenty-four hours after it has fed on an infected rat. In the majority of the fleas the trypanosomes have disappeared altogether at this period, though in those in which trypanosomes are present there are generally intracellular stages to be found. This result corresponds with our experimental results, which show that only a small proportion of fleas fed continually on infected rats acquire a permanent infection with the trypanosomes whereby they become themselves infective to rats in their turn. We are inclined to think that whether the trypanosomes succeed in establishing themselves in the flea or not depends upon whether they succeed in penetrating the cells of the stomach wall and going through the intracellular multiplicative phase here described. In the majority of the fleas the trypanosomes taken in appear to be digested together with the blood, and never to succeed in establishing themselves in the flea or in going through their developmental cycle; only in a relatively small number of cases do the trypanosomes resist the digestive juices of the flea and succeed in holding their own. Analogous conditions have been observed by Kleine, Bruce, and others in the development of pathogenic trypanosomes in tsetse flies; only in a relatively small proportion of the flies fed on infected animals do the trypanosomes go through their full developmental cycle.

It seems to us further possible that the facts observed may also throw some light on another peculiarity in the development of pathogenic trypanosomes that has been noted by all those who have studied them. It has been observed in the development of *T. gambiense* in *Glossina palpalis*, for instance, that the trypanosomes disappear from the digestive tract of the fly at a period some five to seven days after they have been taken up; in a few flies they reappear again later in the digestive tract in enormous numbers. This temporary disappearance of the trypanosomes from the gut of the fly may perhaps find its explanation in the trypanosomes undergoing some multiplicative stage, similar to that seen in the case of *T. lewisi*, in the cells lining the digestive tract. We have written to our colleague, Miss Muriel Robertson, who has recently gone to Uganda for the purpose of studying the development of the pathogenic trypanosomes, informing her of the developmental phases that we have observed in the flea, and suggesting that similar phases may perhaps occur in the development of trypanosomes in tsetse flies.

A further question which arises, with regard to the intracellular phase described above, is whether it occurs as a single generation in the developmental cycle of the trypanosome, or whether there may be several successive generations of intracellular multiplication, before the development takes its further course. This is a question to which it is difficult to give a definite answer, since it is scarcely possible to keep the trypanosomes alive between slide and cover-slip long enough to observe more than one generation of the parasites. Not only the trypanosomes, but the epithelial cells also, soon degenerate and become moribund under such conditions. We are inclined to believe, however, that trypanosomes which have been liberated by the bursting of a sphere within a cell may, after becoming free from the host-cell, penetrate into other epithelial cells and repeat the process of multiple fission by which they themselves came into being; in other words, that several generations of intracellular multiplication in the stomach succeed each other in the beginning of the development of the trypanosome in the flea.

Intracellular stages of trypanosomes have been described by many investigators in that part of the life-cycle which takes place in the vertebrate host. Without multiplying instances or referring to the many cases, some of them very debatable, in which the occurrence of such stages has been alleged, it will be sufficient here to refer to the multiplication of *T. (Schizotrypanum) cruzi*, the parasite of human trypanosomiasis in Brazil. According to Chagas,¹ the parasite goes through a process of multiple fission in the capillaries of the lung in the main as follows: A full-grown trypanosome loses its flagellum and becomes folded on itself, first into the form of a crescent, which by fusion of its two horns becomes an oval mass; it then divides within its own periplast into eight small daughter-individuals or "merozoites," which may be with or without the rudiments of a locomotor apparatus; the merozoites then escape from the enveloping maternal periplast, and each one penetrates into a blood corpuscle, within which, in the general circulation, it develops into a full-sized trypanosome, which is finally set free from the corpuscle and swims in the blood plasma. According to Hartmann,² *Schizotrypanum cruzi* exhibits, in addition to the method of multiplication described by Chagas, a second method of multiplication, which takes place within greatly hypertrophied endothelial cells of the lungs; a final stage is figured, showing the cell containing some two dozen *Leishmania*-like bodies, each an oval corpuscle with trophonucleus and kinetonucleus, but with no flagellum. The occurrence of "schizogony" in a trypanosome is regarded by Hartmann as a further proof of the supposed affinity between trypanosomes and malarial parasites—a doctrine which is one of the foremost tenets of the neo-Schaudinnian school.

Without entering further at present into these highly controversial matters, we content ourselves by remarking, first, that schizogony—that is to say, multiple fission not following upon sexual processes—is a method of multiplication that occurs throughout the protozoa, in every class, if not in every order, and therefore cannot by itself furnish any indication of genetic affinity; secondly, that the process of multiple fission within cells observed by us follows entirely the type of such multiplication as seen in trypanosomes; it is, in fact, essentially similar to the multiplication which *T. lewisi* is known to go through in the blood of the rat. In every case in which our observations permit us to make a positive statement, whether in stained preparations or in living material, we are able to assert that flagella are present during the whole process of multiplication; the large parent form retains its flagellum up to the spherical stage, and the daughter-individuals produced within the sphere are provided with flagella at a very early stage in their formation. It is, of course, possible that in some cases flagella may be absent; we have seen in the epithelial cells trypanosomes in the form of motionless oval bodies in which no flagella could be made out, and in one such case a body which had been perfectly quiescent for a long time was seen to wake up, as it were, and to begin moving about in the cell by means of a flagellum, though it would be impossible to say whether in this case the flagellum was a new formation, or had been present all along and had escaped notice in the cell. While, however, prepared to admit that the intracellular forms may in

some cases be in a non-flagellated, resting, *Leishmania*-like stage, we venture to assert, from our observations as a whole, that the multiplication of *T. lewisi* in the stomach of the flea is typically the multiplication of a flagellate phase and perfectly different from the schizogony of a malarial parasite, which it resembles only in the broad features of multiple fission, as seen in protozoa generally. In the fact that it takes place within the periplast of the parent individual it resembles that described by Chagas in *Schizotrypanum*, but differs mainly in the following points: in *Schizotrypanum* an adult trypanosome of ordinary size, losing its flagellum, divides up to give rise to a number of minute daughter-individuals, which grow up into the adult form; in *Trypanosoma lewisi* an ordinary individual first grows to a relatively huge size, retaining its flagellum, and then divides into a number of full-sized and perfectly-formed trypanosomes.

REFERENCES.

- ¹ *Memorias do Instituto Oswaldo Cruz*, vol. i (1909), pp. 176-180.
² *Archiv für Protistenkunde*, vol. xx (1910), pp. 361-363.

SEVENTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held in Birmingham on July 21st, 22nd, 24th, 25th, 26th, 27th, and 28th.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICAL SOCIOLOGY.

GEORGE REID, M.D., D.P.H., President.

PRESIDENT'S INTRODUCTORY REMARKS.

I AM glad it is now no longer necessary for the President of a Section to deliver an inaugural address, but merely to make a few opening remarks which are limited by statute to fifteen minutes. You will be pleased to hear that I do not propose to tax your forbearance even to that extent.

In accepting the honourable position of President of this comparatively new, although important, Section, I felt I was undertaking a very onerous duty, more especially at the present time, for reasons which will occur to you; however, I know I can rely upon your loyalty and generosity to smooth over difficulties which may possibly arise through errors of judgement on my part in the conduct of the business.

Medical sociology embraces a very wide field; indeed, it may be said to constitute the pivot of the whole social movement, for the nation's health is the crux of national prosperity, and with a low health standard social progress is impossible. This being the case, who, I would ask, are better fitted to speak authoritatively on social questions than medical men? At the same time we must be careful not to be too dogmatic in expressing our views, for such questions have their political as well as their medical aspect, and expediency may sometimes dictate the placing of a temporary drag upon progress which, if too precipitate, may defeat its object and so hinder rather than advance the cause. It must also be remembered that the vital factor in all national progress is public opinion. Unless the people are roused and their sympathy secured, all agitation is futile. To this end numerous societies have been formed whose energetic work, when well directed, acts as a slowly propelling force which ultimately makes itself felt. It is a weary process, however, and those who do the spade work do not always receive the credit in the end.

That the nation is becoming more and more alive to the importance of the health factor in securing and maintaining its prosperity and social welfare is shown by recent legislative enactments—for example, the Notification of Births Act, the Education (Administrative Provisions) Act, and the Housing and Town Planning Act, not to mention the National Insurance Bill now before Parliament, which so deeply concerns the medical profession.

It is an unfortunate fact that the political power of the medical profession is practically nil. Locally, the profession cannot influence an election one way or the other, and in Parliament the group of medical members is too insignificant at present to have any weight in the division lobby—a state of affairs which ought to be altered. The

result is that, in piloting a bill through Parliament, the Minister in charge need pay no regard to this small group in his efforts to appease those who are strong enough, as a party, to assert their opinions and gain their ends. Consequently, no matter how honest his desire may be to secure the ideal, he often finds it necessary to sacrifice much in the framing of the bill, and still more in its passage through Parliament. Thus, political expediency too often leads to such a mutilation of the measure as to render it next to useless for its purpose, and the introduction of provisions which impose unfair hardship and loss upon sections of the community.

Again, it is sometimes apparent that, in devising machinery for accomplishing, it may be, a very useful purpose, the Minister has not availed himself of such expert advice as is needful to ensure that what he desires to arrive at can be brought about in the manner proposed. As an example of this, I would refer you to Clause 46 of the National Insurance Bill, in which an attempt is made to devise a means for penalizing individuals or authorities, as the case may be, in the event of the sickness-rate of a locality being excessive by reason of their having neglected their responsibilities. Now, there can be no question regarding the wisdom of the intention in this case, but when one considers the basis for determining what may be regarded as excessive sickness, it is obvious that this provision, if carried through, may lead to great injustice. On paper, and to the lay mind, nothing could be simpler than the proposal that an amount of sickness 10 per cent. in excess of a standard—to be fixed by a body of Insurance Commissioners—should justify proceedings for penalty being instituted; but how, I would ask, are the Commissioners in the first instance to arrive at a standard sickness-rate for a particular locality in order that it may be ascertained when the 10 per cent. increase is reached? We have the means of ascertaining the death-rate of a locality, but at present we have no reliable data upon which to base anything approaching an accurate estimate of the sickness-rate.

The consideration of the bill I have just referred to, as it more immediately concerns medical practitioners, will occupy much of the time at the disposal of the Section. This is to be regretted; it is not our custom to wrangle over politics, we prefer to devote our attention to medical questions of scientific interest, but "needs must when the devil drives." When, as is the case now, the Legislature proposes to tamper with our interests to an extent which will practically ruin a large section of the hardest workers in the profession, it is high time that we woke up, as, indeed, we at last seem to have done.

Our aim should be to do all we can to make the scheme of invalidity insurance a success, and as a first step in that direction we must endeavour to secure such reasonable amendments in the bill as will promote content among members of the profession, and thereby ensure their loyal co-operation. Through our Association, under the able and highly successful generalship of the Medical Secretary, to whom we are greatly indebted, we are now in a position to speak with one voice, and success depends upon the individual members of the profession steadfastly adhering to the undertaking arrived at by the body as a whole. There can be no invalidity insurance without our co-operation, and unless we receive fair treatment, we must not hesitate to exercise our veto.

DISCUSSION ON
THE MEDICAL ASPECTS OF THE POOR LAW QUESTION.

OPENING PAPERS.

I.—J. SMITH WHITAKER, M.R.C.S., L.R.C.P.,

Medical Secretary, British Medical Association.

MR. SMITH WHITAKER stated that in opening the discussion he had thought it would be most useful for him to devote the time at his disposal to observations purely prefatory to those of the remaining speakers, and not to attempt an exhaustive treatment of any special aspect. He would endeavour to indicate briefly, in their true relation to one another and to broader social problems, the various parts of the problem of medical provision for the poor. From the report of the Royal Commission on the Poor Law in 1832, and the labours