and be impervious to air. Thus the accumulation of fluid, by its pressure against the lung, by the collapse which it induces, and by preventing the alternate expansion and contraction of the lung during respiration, tends to restrain the hæmorrhage; and the blood that has already escaped, by its very accumulation, prevents the escape of further blood. You will observe that, in this case, the line of dulness increased up to about the third day, and then reached up to the third rib; so that, by that time, in all probability, this man had lost as much blood as he was likely to lose so long as the chest was left in a quiet state. The lung had become pressed back against the spine and consolidated, and the bleeding had ceased. But if we had tapped the chest, and drawn off the fluid as it escaped from the chest, the lung would have expanded, the lung-tissue would have opened up, the coagula in the pulmonary vessels would have been disturbed, and the hæmorrhage would have immediately recommenced; for, just in proportion as the fluid was drawn off and removed from the outside of the lung, and the compression exercised by it removed, the blood would have begun to pour into and out of the pulmonary vessels within the lung. If he had lived for eight or ten days, a quantity of lymph would have been deposited on the lung, the wound in the lung would have become covered over by a thick layer of plastic matter, and that portion of the lung, more or less, permanently bound down against the spine as in a case of empyema. After the lung is thus bound down, you may remove the fluid without the danger of the recurrence of hæmorrhage. The lung-tissue continues to be compressed, the blood-vessels to be walled up by coagula and plastic matter; no movement of expansion in the lung follows the escape of the fluid, no disturbance of the closed vessels, and no liability, therefore, to the displacement of clot and the recurrence of hæmorrhage. For the reasons just given, we did not think it proper to draw off the fluid from the poor fellow's chest at an early period; and, during the last thirty-six hours of his life, he was not in a condition to bear any operation; even turning him in bed gave him intense pain; and, indeed, he was evidently sinking.

The case, then, is, in many of its aspects, an important and a particularly instructive one, and one which presents many points of interest that place it in a somewhat separate category from the ordinary run of cases of gunshot injury penetrating the chest.

OBSTETRIC MEMORANDA.

UNDER this head we shall from time to time, as materials come to hand from correspondents, publish records of cases remarkable in themselves, or illustrating points of interest in obstetric practice, therapeutic or manipulative. We shall probably in this way preserve from oblivion the notes of very many useful and instructive occurrences in private practice; for the great obstetric experience is that, for the most part hitherto unwritten, of the great body of general practitioners throughout Great Britain. We will only ask those who may forward cases for record to relate them with the utmost brevity, and equally to condense any appended remarks.

LABOUR OBSTRUCTED BY A FIBROUS BAND: DISEASED PLACENTA.

By HENRY C. ROGERS, Esq., Newport Pagnell.

On September 15th, I was called to Mrs. B—, aged 20, in labour with her first child. On examination, I found the membranes protruding through the os uteri, which was soft and yielding. The membranes having been ruptured, the head quickly descended to the perineum. I then found an obstruction to its exit by what I at first thought to be the lip of the uterus over the head; but, upon passing the finger under the obstruction, I found it to be a band, apparently fibrous, attached anteriorly and posteriorly to the vagina, and which, until the pressure of the head distended the soft parts, had been lying along the side of the vagina. It was evidently an abnormal deviation of the hymen, and of so tough a character as to require division with scissors before it would allow the passage of the head, which was born with the next pain. Upon attempting to remove the placenta, I felt the cord was separating; and on passing my fingers along it, with the intention of reaching the insertion, I found the last seven or eight inches of the funis to be of an almost semi-gelatinous consistence. I then attempted, by manipulation of the uterus, to make it expel its contents; but, failing in this, introduced my hand, and grasped the placenta. It broke down readily, being in a most rotten condition. In addition to this, it was firmly adherent at the anterior portion of the fundus. The uterus contracted firmly after the removal of the placenta; and, with the exception of a slight feverish attack, the mother has had no bad symptom.

OBSERVATIONS

ON

THE FEVER-DENS OF GLASGOW.*

By W. T. GAIRDNER, M.D.,

Professor of Medicine in the University of Glasgow; Medical Officer of Health to the City of Glasgow; etc.

As Medical Officer of Health of Glasgow, I have had peculiar opportunities of becoming acquainted with the character of the localities in which typhus fever has raged there, and the specialities of these localities. Further, in the course of my official duties, it appeared to be requisite to preserve, in a more accurate form than usual, the records of all the fever cases occurring over a succession of four years, and to put these down in the form of a map, which may be called the Fever-Map of Glasgow during the years 1863, 1864, 1865, and 1866. These records having thus accumulated in my hands, and having been thrown into this somewhat precise form, it appeared to me that in merely shewing this fever-map to an Association like this, and making such casual observations upon it as might occur to me, I might do something to elicit facts or observations from others that might help to aid us in preventing the spread of fever in future.

Now by fever, for the purpose at present in view, I wish to explain that I mean typhus fever, and nothing more. Of course, we have other fevers in Glasgow. I need not say that we have had plenty of scarlet fever and measles; and, at different periods since I became an official there, plenty of small-pox. We have also had various other anomalous fevers that one does not always attempt to name or classify; and also we have had, occasionally, more or less of the disease about which there has been so much discussion lately, under the name of gastric, or typhoid, or enteric fever. The number of these latter cases, however, is in reality a very insignificant item in the general epidemic record of Glasgow. The amount of enteric fever in Glasgow is so small, that, even allowing for mistakes in diagnosis, the general results would hardly be affected. Besides, I have to remark that mistakes in diagnosis, as regards enteric and typhus fever, are rare in Glasgow—rarer, probably, than in any other town in the kingdom; because the physicians in that city, and even those practitioners who in other towns know comparatively little from personal experience of fever, have all been taught from an early period to distinguish these fevers, and do actually distinguish them in practice. Therefore, I say again, that what I am now discussing, is "typhus" fever; and when I speak of the fever-dens of Glasgow, I mean the "typhus" fever-dens of Glasgow.

From an early period of my official duties in Glasgow, as the Medical Head of the Sanitary Staff there, it appeared to me to be of singular importance to study the habitats of typhus fever—of much more importance than in any other epidemic disease. In making that remark, I go upon this principle, in which, I have no doubt, I shall be supported by the experience of the Dublin physicians, that, while scarlet fever and even small-pox are diseases that will run and spread even in families and in houses where there is a fair ordinary attention to hygienic conditions, typhus fever will not so spread to any considerable extent—not, at least, so as to cause an epidemic. Typhus, according to my experience of it, is a disease of which you may say with absolute certainty, that, in a roomy house, inhabited by a well-to-do class of people, and where proper precautions are taken on the first occurrence of the disease, it cannot spread. It is not in the nature of typhus—it is not possible for typhus, I believe, to spread under good hygienic conditions. And therefore I say, that the study of typhus fever seems of peculiar interest to the sanitarian, because, while it might be urged, as to scarlet fever, for instance, that it is brought by the visitation of God, nobody knows how or why, you may be perfectly certain, with regard to typhus, that, wherever it spreads, and affects a large number of persons in a building, the laws of health are there in some very serious and decided, nay, even very manifest way, disregarded. That is my experience of typhus, as a physician; and, putting that experience into use and operation as a sanitary officer, I thought it was on this account of peculiar importance to become acquainted thoroughly with the haunts and habitats of typhus fever in Glasgow. Besides, typhus fever is a disease which you have no difficulty, generally speaking, in arriving at a knowledge of. With regard to small-pox, and still more with regard to measles and scarlet fever, which are emphatically diseases of children, it is notorious that dozens, scores of cases of them, may occur, and never become known

* Read in the Medical Section at the meeting of the British Medical Association in Dublin, August 1867.

to the authorities at all. But typhus fever, occurring as it does almost exclusively in the homes of the poor, and affecting adults as well as children, striking down the labourer in the middle of his work, is a disease that almost always comes under the notice of the authorities by the application of the persons affected to be admitted to hospital. Accordingly, we have satisfied ourselves in Glasgow, that for the last five years we have been cognisant of, I do not say every case of typhus fever, but a very large proportion of the cases of typhus fever, other than the purely accidental cases occurring in the practice of private medical men.

The essence of my paper is the map now exhibited, which bears the record of four years of typhus fever in Glasgow; and I wish to explain on what principle it has been constructed. The daily practice of the Sanitary Office in Glasgow is to send the servants of the office round all the hospitals and all the parochial boards, and, as far as possible, to private practitioners, and others that are in the habit of seeing fever cases, and in that way to make ourselves acquainted, as far as possible with the whole fever-field of the day. These cases are reported in a book. All prophylactic measures, such as removing the patient to hospital, the disinfection of infected clothing, the prevention of overcrowding, as far as it can be done without danger, and other proceedings of a like character—in fact the common and ordinary measures of precaution, are put into immediate requisition. The locality is visited either by one of our inspectors or by the district medical officer, for the purposes just alluded to; other cases are discovered, and the whole epidemic field surveyed as far as possible from day to day. Thus it comes about that we have in our books, for practical purposes, a complete record of all the cases of fever that become known to us. As these cases from hundreds become thousands, we arranged to classify them. We have in every instance noted the precise locality of the infected tenements, and have in many instances numbered the very rooms in which the cases occurred; and, therefore on the recurrence of cases in the same place or property, we add these to those that have occurred there before, and thus we are able at the end of three or four years to tell the whole sum of fever which has occurred during those three or four years in any particular tenement which has been brought under our notice. I do not mean to say that cases have not escaped us; but still we are enabled within a certain limit to do this. We find on a review of these three or four years, that, in certain tenements, nay in whole streets, and even districts of the city, there has been almost no fever reported at all. In certain large districts of the city you will see (by the map) that there has been practically no fever. Where you see none of the red and blue marks there has been practically no fever. There may have been a very few isolated cases, but it has been practically unknown in these places as an epidemic. In other places fever has during four years affected less than five per cent. of the population, as far as we can ascertain. These I consider as not being cases of epidemic prevalence in that particular tenement, where during four years less than five per cent. of the population have been affected, that is, not more than one per cent. in any one year. Where it has been more than five per cent. during the four years, and less than twenty per cent., the spot is marked blue on the map, and where it has been more than twenty and ranging up to fifty and seventy per cent., the place is marked red. We have, therefore, on this map as near an approach as is possible to a complete statement of the amount of fever in the different localities, tenements, and properties of the city of Glasgow.

Now, having made you aware of the manner in which our cumulative observations came to be recorded in this map, I wish to take the opportunity of stating a few facts about these fever-dens, and drawing a few inferences from the facts. Can we state anything about a fever-den that would distinguish it from any other building? Are there any characteristics that belong, in the nature of the case, to what I am calling a fever-den? I would say that we must, in the first place, recognise the fact that there are two kinds of fever-dens in Glasgow, and probably in other cities also. There are fever-dens in old and ruinous property, there are fever-dens in new property; in other words, fever, although chiefly prevailing in old property, is not by any means confined to old property, but some of the worst of the fever localities have been in comparatively newly constructed places; places, which by a variety of evil influences, other than their old or ruinous condition, have come under the denomination of fever-dens.

Now, what are those common characteristics of the old and the new property which become liable to fever? I would say they are these. In the first place, the construction of the property is very often bad—bad *ab initio*; and here I would say that, judging from two visits made with my friend Dr. Mapother, to some of the worst fever localities in Dublin, the Glasgow fever-dens beat those of Dublin out and out in regard to the bad points of construction that I am now going to remark on. In fact I am pretty much inclined to back Glasgow against the

world in the matter of fever-dens. In Dublin you have very old, very ruinous property, shabby looking property, perhaps worse looking outside than the greater part of our fever-dens, with the drainage worse, often; with the scavenging perhaps even worse attended to than ours, though I do not mean to say that ours is by any means perfect; but, on going into these houses in Dublin, I remarked to myself that they are not nearly so dangerous as the worst that we have in Glasgow. And the reason is, that they are comparatively simple in their construction. I went into a large number of them to-day with Dr. Mapother, in which he said there had been a good deal of fever. These were houses mostly of one storey, and each house was entered by a door for itself. Now that of course may by chance become a fever-den; but that is not what I call a characteristic fever-den. What I call a characteristic fever-den, *i.e.*, a house in which the occurrence of one case of fever among a much crowded population is perfectly sure to be followed by multitudes of others, is this; a house three, four, or five storeys high, where each landing admits to a close noisome passage or covered way, sometimes quite dark, and always ill-lighted, always ill-ventilated, most frequently ending in an absolute *cul-de-sac*, and having its sole ventilation through the rooms; those rooms being each the habitation of a family or more, sometimes of two or three families, or a family with a number of lodgers in one room, and these rooms opening upon one single passage from the numbers of three or four rooms up to twelve or even more. That is what I call a typical fever-den; and of such fever-dens we have, I am pretty well satisfied, scores, if not hundreds, in Glasgow; and, I state again, a comparatively small number in Dublin. Now a very great number of these essentially bad constructions are in the old parts of Glasgow; but unfortunately they are not limited to those old parts. The bad principles of construction which now, under the new Police Act, the Dean of Guild would certainly refuse to allow, have been going on in constant operation in the city within the last twenty, if not ten years.

But there are specialties in the case of Glasgow which may serve to account for the bad reputation which this town has long had for fever, and its high rate of mortality. I wish to mention some of these. You are aware that Glasgow is permeated by the Clyde. That river is navigable up to Glasgow for vessels of considerable burden carrying traffic from all quarters of the world. In fact, the greatness of Glasgow at present is to a great extent as a seaport and a shipbuilding town; but it was not always so. A century, or less than a century ago, Glasgow was not a seaport. The seaport of Glasgow was twenty miles down the Clyde, and is still known by the name of Port Glasgow. Glasgow was then a town of a character intermediate between that of an old cathedral or university town, and a place of ordinary general business—of business facilitated by the neighbourhood of the Clyde, but not such business as attends a regular seaport town. The real aboriginal nucleus of Glasgow was a small ecclesiastical village, extending not half a mile round the Cathedral of St. Mungo. Both the cathedral and college were there originally, and I suppose there was next to no town at all at the river. Gradually the town crept down the hill towards the river, and far to the southwards and westwards of its original position. Therefore there are three Glasgows to keep account of; first, the original ecclesiastical Glasgow round the cathedral; next, the Glasgow of Bailie Nicol Jarvie—I suppose you will all apprehend what I mean—extending from the cathedral down to the river, inclusive; and thirdly, the modern Glasgow, which is essentially connected with the development of the seaport. The development of the seaport took place in consequence of the deepening of the channel of the Clyde, so as to allow vessels of considerable burden to come up to the Glasgow Bridge. Then a great development of the town took place, and it became expedient to shift the business nucleus altogether from its original position at the Cross, which I point out to you on the map, to a position considerably farther west; and meanwhile the development of the seaport caused the whole extension of the town to go in the direction of what was originally nothing but country villages. The result of that was to leave the original centre of the High Street and the Salt Market in a depreciated condition as property. Rents fell enormously; properties that were originally of the most highly respectable character, and commanded very high rents, both as residences and places of business, became so low in their rents that they hardly paid their expenses at all; and, as a consequence of that, again, came the making down of large houses, originally constructed for warehouses, for shops, for residences of the rich, sometimes important mansions, into miserable abodes for the poor, and thus the multiplication of rooms for separate tenancies, communicating with each other by the dark passages to which I have referred. The abundance of stone, which is, in some respects, a good thing, and gives to a town a handsome appearance, tended in fact to the production of this bad result in the case of Glasgow, because it caused the original construction of the houses to be exceedingly massive; and when

these constructions became comparatively valueless owing to the change in position of the business nucleus, then the depreciated properties fell into the hands of proprietors who were too poor to do justice to them, and allowed them to be inhabited, or—to use a more proper term—*squatted in*, by a class of tenants who neither paid their rents regularly, nor did justice to themselves or their landlords; in fact, a class of tenants that became, and still are, the curse of the whole population by their squalid and bad habits of living. This is the explanation of the peculiar liability of the central nucleus of Glasgow to fever. It is the explanation of the multitude of blue and red spots to be seen all dotted down within a distance of half a mile from the original business nucleus of Glasgow. It is the explanation of the large patch of fever-dens south of the Clyde. All these localities belong to what is called Old Glasgow, and have come to the condition of fever-dens by the gradual depreciation of property which did not pay its expenses, and which gradually fell into the hands of a class of tenants who became worse and worse the longer and the less they were looked after. But that does not explain the blue and red spots in the several places, including, for instance, the weavers' village of Camlachie, as well as Bridgeton, Milton, Springbank, and many other districts not devoid of fever, and where the property is almost all comparatively new. The explanation there must be sought in the bad construction of these new houses, which were constructed according to the old bad system, for the very purpose of giving bad accommodation to this bad class of tenants—not so as to raise them in the scale of society, but so as to meet the debased habits and wants of those who would not, and perhaps could not, pay for good accommodation, which, indeed, they were totally unable to appreciate.

This is the general explanation of the fever-dens of Glasgow; and, before leaving this part of the subject, I wish you to observe the action and reaction—if I may so speak—of the various causes of these fever-dens on each other. You have, first, the construction of a bad kind of property, or the degeneration of property from a good kind to a bad kind. Then you have the occupation of that property by a bad kind of tenant. Then, as there is never sufficient energy on the part of the landlord on the one hand to remove the causes of offence to a good tenant, or, on the other, to get rid of the bad, the property can never again get respectable tenants; and, as the tenants are perpetually in contact with bad sanitary circumstances resulting from the neglect of the landlord, they never improve, but always grow worse and worse. Bad property induces bad habits; bad habits perpetuate and extend the degeneration of property. It is an incurably vicious circle of cause and effect. That is the real secret of a great part of the degradation, both as to morals and *physique*, of the inhabitants of our towns. There has been nobody there to destroy the bad places—simply to say “these places are too bad for human habitation, and must therefore be either radically reformed or else destroyed, so as to allow places more suitable for the residence of human beings to be constructed in their stead.”

Now, having exposed the evil, let me say a word or two upon the remedies—first, the remedies that have been actually applied; and secondly, the remedies that have not been actually applied, either from deficiency of legal power or from want of time. All that may be called ordinary preventive measures against the spread of fever may be said to be in active operation in Glasgow now. We have got abundant fever hospital accommodation, quite adequate, on the whole, for the wants of the population, though it may be a little overstrained at the more extreme periods of an epidemic. We have carriages for the sick; washing-houses for the purification of the infected clothing of the sick; abundant means of whitewashing and cleansing; and these, under the advice of the medical officers, are being applied from day to day constantly, without the loss of a single moment of time, to the disinfection of all fever localities. Nothing of that kind can be said to be neglected, I think, on the whole. Furthermore, we have had, since the year 1862, a very important law in operation, tending towards the diminution of overcrowding, which, perhaps, is not applied with all the strictness that might be, but, on the whole, is applied with as much stringency as is reasonable or safe. We have a local law making it obligatory that there shall be three hundred cubic feet of space for each adult, and a hundred and fifty cubic feet of space for each child under eight years old, in every house in Glasgow; and, in order to ensure compliance with this as far as possible, we have power, in houses of not more than three apartments, to ticket or label the door of each apartment with a number, enabling it to be recognised, which number is put on our books; and also to put on the door, in such a way that it may be easily recognised, the number of inhabitants that may occupy that apartment. We have in Glasgow at this moment, I think, well nigh twenty thousand separate occupancies, or “houses”, as they called with us, under this system of ticketing, in which overcrowding can only take place by neglect of the police or evasion of the inhabitants. No doubt it does take place, but to a comparatively limited extent. We have also pushed home, though not so effec-

tually as I could wish, a system of lodging-house inspection which I hope, in the course of the next two years, to bring into more active operation, and, in fact, to render as efficient as the nature of the case admits. But, with all this, the authorities that have most to do with the matter have become convinced that it is not enough, and that we shall never uproot fever in Glasgow by even the operation of all these measures. We can almost always, to a considerable extent, check it, but we never can uproot the causes of it; and therefore it is that I propose to submit to you a statement of the remedies that still remain to be applied in Glasgow.

The authorities, having become satisfied that nothing short of a great destruction and great reconstruction of property will do in Glasgow to eliminate the fever-dens, especially from the central part of the town, applied to Parliament, during the last session but one, for a special local Act, to enable them to spend a very large sum of money in buying up house property, with the view of pulling down and reconstructing those fever dens. They got the Act without any Parliamentary opposition, singular to say. It is now a doubtful advantage that we got it without opposition. I am inclined to think that, if we had had a little opposition in Parliament, we might have been able to carry out the Act better than we have found ourselves able to do. The Act was obtained apparently under the influence of a feeling of enthusiasm, the unanimity of the authorities carrying everything before it. The only qualification of any importance was put into the Act by the authorities themselves, and was to prevent the possibility of large populations being rudely dispossessed of their dwellings in the application of this Act. That qualification was, that not more than five hundred families should be dispossessed in the course of the year, without the Sheriff (who is our chief local judge) being satisfied that there was house accommodation for them elsewhere. With that qualification we got the Act. But when the first assessment of sixpence in the pound on the rental came to be put on, then came the opposition; and we are now feeling that it is necessary to proceed with a certain amount of caution and circumspection, step by step, in the application of the Act, in order to avoid the pressure which the assessment will necessarily make upon the population, and particularly the shopkeeping classes.

The next point is this—is there no operation or alteration of the law by which we could enlist the landlords upon our side? The state of the case at present is what I endeavoured to demonstrate to you a moment ago. A bad class of population grows upon bad property. The property is so bad that no good tenants will occupy it; and the tenants are so bad that no landlord will improve the property. That is the deadlock you come to. Is there any alteration of the law by which we could engage the landlord upon the side of progress by enlisting his own pocket and his own interests directly in the matter? Now, it has occurred to me many times, and I propose it in this numerous meeting of my medical brethren with the view of its being cogitated as an innovation, and, if approved of, carried into effect, that, in the present position of things, we might go to the legislature for power—not, observe, to turn the tenants out of the fever-dens, because, I think, that would be altogether too rude, oppressive, and dangerous a proceeding in practice, unless you had other places to put them into—but to say to the landlord of a fever-den in which epidemic disease was present and manifestly spreading, “We will not turn out your tenants, but you shall not admit one single new occupant until the place is declared by the authorities to be free from epidemic disease.” Considering that the place where fever gains ground is that where tenants are altering from night to night and from week to week—considering that such places are almost always liable to be overcrowded, and that the coming in of the new uncontaminated blood is just keeping up the pabulum of the disease—I think there cannot be a shadow of doubt that it would be at once just and desirable to enlist the landlords on the side of sanitary progress, by making them feel that they cannot draw rents from fever-haunted property, except under the most stringent limitations.

Discussion on Dr. Gairdner's Paper.

The PRESIDENT (Dr. LAW): In reference to what we have just heard from Dr. Gairdner, I may truly say, *Mutato nomine de te fabula narratur*. If we had not known that it was of Glasgow he was speaking, we should have thought he was speaking of the old houses in the western part of Dublin. Although the construction of the houses is different, there has been the same depreciation of property here; and houses, that were formerly the abodes of the wealthy, are now occupied by a wretched and squalid population.

Dr. MAPOTHER: I quite concur with what has fallen from Dr. Gairdner. He has admirably pointed out the peculiarities of construction which render our fever-dens not so bad as those of Glasgow. They are more simply constructed, and therefore the contagion of fever does not

so rapidly spread in them. I take this opportunity of mentioning that the corporation of Dublin have lately erected, at an expense of £500, a disinfecting chamber upon the plan of that constructed at Liverpool under the superintendence of Dr. Trench, which succeeded so admirably. In this new chamber, the temperature ordinarily employed is 300°, and it is often raised to 350°. I regret that it is not very largely taken advantage by the hospital authorities. It has been used a few times by the dispensary physicians, but as yet has not grown much in public favour. I am not aware that there is any other disinfecting chamber in Europe on the same principle. It has been lately copied in New York.

Dr. ACLAND: Nothing could be more lucid and perfect than Dr. Gairdner's representation of the general condition of the population of the bad parts of our great cities. They are all very much alike, with, of course, certain local reservations. What struck me as a very admirable feature of Dr. Gairdner's communication, especially as a professional one, was its moderate and temperate character. I did not catch a word of attack on the landlords as unreasonable possessors of property, or any stigmatising whatever of persons who cannot help the circumstances in which they find themselves. Nothing, of course, can exaggerate the terrible nature of the evils, such as have been described, which are suffered by the poorer populations not only in Glasgow, but also in Edinburgh (which city I mention, as I am myself acquainted with it), and also, I believe, in Dublin, and especially in London. The condition of some of this property is such as to constitute an almost irremediable evil in the case of an enormously increasing population; that is, irremediable for a certain time, just as the unhealthy constitutions of some of the children that we see in great workhouses or Poor-law schools are at the moment irremediable. I have just come from one of the splendid schools conducted by the National Board in Ireland. I am very familiar with schools of that kind. One of the most affecting spectacles that a thinking man can behold in our age is that of the infant benches in one of the schools to which the poorer classes of our population go. You see most beautiful children, apparently perfectly healthy, as they often are in their childhood; and, sprinkled amongst them, strumous little creatures of low physical structure, and apparently destined to be unhealthy for life; and every one acquainted with our towns knows that this is a result of the unfavourable conditions in question, that they are and must be born so. How can this be remedied? By enlisting, as Dr. Gairdner pointed out, the owners of property on the side of sanitary improvements. As an illustration of the difficulties by which even those in that position are sometimes surrounded, I may mention that I happen to be trustee of an agricultural property of considerable value, on which there are about seventy cottages. That property has been in Chancery for many years. The cottages were in a horrible state; and yet I had no more power to touch them, though I was trustee, than you had. It is of no use to abuse persons so circumstanced. All we can do is to hope that, by God's blessing, the time may soon come when these things can be remedied. In the case brought under our notice by Dr. Gairdner, power has been obtained to deal with some of the evils; but it has taken from twenty to thirty years to bring this about. This Association has just appointed a Committee, on which Dr. Gairdner has been kind enough to consent to serve, and which will engage itself for the present in the very modest occupation of collecting facts; and, when these facts are collected and put before the Government, I feel no doubt that, though they do not in the least require any information of the sort, it will be impossible for them to resist employing all the compulsory powers that it would be safe to exercise in such a matter. I only repeat, that the point is, to get the holders of property to do what in them lies, by enlisting them on our side. For a time I fear that, do what we will, nothing short of the entire destruction of the property will uproot the evil. But there is one thing which ought not to be tolerated, because in truth it is intolerable; and that is, that in any town whatever, be it small or large, buildings should be allowed to be erected which are not fit for human habitations. I have no hesitation in saying that no Government, be its politics what they may, deserves the name of a Government, that in a country like ours, at the present time of day, does not bestir itself at once to enforce the rule that no house shall be built unfit for people to live in. That would put a stop at once to all aggravation of the evil. I have seen, in a district which I could name, miserable dwellings, miserable cottages, which I could prove to be more healthy than good modern houses; that is, I have seen fever in new cottages, when some tumble-down, horrible old houses were perfectly free from the disease. Why? Because the old houses had holes in the roofs—holes in the walls—holes every where; so that the poor occupants of them had air to breathe; whereas the new houses were plastered and built in such a way as to prevent ventilation. These things ought to be impossible; and every house ought to be certified to be fit for human habitation. During last winter, I had occasion to visit many parts of the eastern portion of London; and the magnitude of the mischief there

cannot, I think, be equalled either in Glasgow or in my old haunts in Edinburgh. I have no doubt that Dr. Mapother, who is to be on the Committee, will help it with some facts; and I trust that, at the next meeting of the Association at Oxford, we shall be able to report progress in aid of Dr. Gairdner's admirable and already richly rewarded exertions in his own district.

Dr. GAIRDNER: I have only to explain, that there is now complete protection in Glasgow against the construction of such houses as those referred to. One of the worst of the fever-dens was a comparatively new house; but none such have been constructed since 1862, the date at which the new Police Act was planned; and no more such will be constructed.

OBSERVATIONS ON THE CONSTRUCTION OF THE CEPHALOTRIBE.*

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IN 1865, during a visit to Edinburgh, I obtained one of Sir James Simpson's cephalotribes, and since then have practised cephalotripsy in all such cases as required the reduction of the size of the head to accomplish delivery. In the *Dublin Quarterly Journal of Medical Science* for February and May of the present year, I have published cases in which the operation was performed, and where there was more or less marked narrowing of the antero-posterior diameter of the pelvis. In one instance there was but one inch and three-quarters in this direction, and yet the mother was delivered safely and made a good recovery, as did the mothers in all the others, except one, where she was in a state of such extreme exhaustion when I first saw her, that I feared she would sink under any operation, and though, owing to the ease with which the head was extracted by the cephalotribe, her remaining powers were not overtaxed, she never rallied, and died in eighteen hours.

In speaking of these cases, and subsequent experience has confirmed me in the opinion, I have stated that I was convinced that the cephalotribe should be used in all cases of embryotomy in preference to all crotchets, hooks, and craniotomy-forceps, and that the use of it would reduce the dangers of embryotomy to a minimum, and allow its performance in cases where delivery could not otherwise be accomplished except by Cæsarean section, and that even though the child were known to be dead. My earliest operations were performed with Sir James Simpson's first modification of the instrument, but in the use of it I saw, from time to time, that some further changes in it were desirable, and it is my object now to show an instrument that I have found to answer all the purposes I have hitherto required. The action required of a cephalotribe is twofold:—

1st. As a compressor, to compress the head, and especially the base of the skull, so as to allow of its passing through a narrowed pelvis.

2nd. As an extractor, to hold the part to which it is applied, so as to allow of its being rotated in the smallest possible space, and of the most diminished portion of the presenting part being brought into the narrowest diameter of the pelvis. Moreover, its hold must be so secure as to allow of the use of a sufficient amount of extractive force to draw the child through the pelvis.

Authors differ as to the relative importance of the action of the instrument as a compressor and as an extractor. Hennig of Leipzig has added crotchet points capable of being projected when the instrument is applied, to increase its power as an extractor; and Depaul aims at the same object, while M. Pajot and Dr. Hodges look on its use as a compressor as the most important, and, in extreme cases, Pajot is satisfied with breaking up the head by repeated applications of the instrument, and allowing it to be expelled by the uterine contractions. I believe myself that in a very narrow pelvis the cephalotribe should be applied and re-applied so as to break up the head sufficiently to enable it to pass through with ease and safety, and that then the labour may be shortened by using a certain amount of extractive force. But, whether used as a compressor, extractor, or both, the form of the instrument should be such as to admit of its easy introduction, application, and locking, with the greatest possible facility and safety, and in the narrowest pelvis in which it could be used.

In the instrument I have had made, I have endeavoured to meet all these requirements. Instead of a blade with a pelvic curve, I have adopted a straight blade. I believe this has four great advantages. First, it permits of the head being rotated in a smaller space than with a curved blade. It seems obvious that a head seized in a curved instrument must, when rotated, either turn on the axis of the handle of

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