friendships made among our little patients, their pretty bashfulness, their ready confidence, their irrepressible cheerfulness, their graceful acceptance of what is, alas, inevitable? The combination in them of childish and heroic qualities is a daily wonder. To watch them at play is like a dream in which the birds and wild flowers are enacting a tragedy and improving the precepts of Stoic Philosophy.

Our practice is not only lacking in brilliant achievements, but it is also uninviting, because, as a rule, our patients do not make absolute recoveries. There is always, or nearly always, a residuum of disability and deformity, and in this is to be found perhaps one reason why our specialty has existence; for, what general practitioner would lightly assume the care of a case so exceptional in his practice, and so momentous as those which fall into our specialty?

The why and the wherefore of specialties, in general, and ours, in particular, are questions of interest. Some will say that we have a natural aptitude for mechanics, an inherited preference for slow and sure methods, compared with those that are quick and uncertain, or an inborn reverence for what is physically demonstrable. These personal characteristics may explain why some of us are orthopedists, but I believe the reason why our specialty exists and thrives, is to be found in the desire of the public, the final arbiter, that experts should be invited to bear the responsibility of orthopedic cases.

One very attractive feature of orthopedic practice, is its *reality*—for want of a better word. It is especially the domain of physical demonstration, where the acceptance of pathological doctrine, as well as therapeutic precept, must be preceded by absolute proof. Here, subjective symptoms are forgotten in the presence of objective signs. The data for diagnosis are visible, palpable, and measurable. Treatment is by forces whose action is nicely directed, increased, diminished, and accurately measured. The very weight of the body is duly considered in trauma and therapeutics, and finally the results of treatment are recorded in degrees of a circle and fractions of an inch. Dealing thus, as we do, with physical realities, it is well for us to keep our eyes open to the moral verities also, which no less form part of the tissue of our daily professional work. Let us remember that diligence is the price of success, and that the only desirable success is that which is reached by the rejection of error and the loyal recognition of truth.

Since our last meeting, there has occurred the death of one of our corresponding members, whose hostility to error might in all friendly criticism, be called intemperate, one whose diligence and devotion to the interests of his patients make him an exemplar worthy of our affectionate remembrance. But I will not trespass on the subject of the first paper of our session, which is by Dr. A. J. Steele, of St. Louis, on the orthopedic work of the late Mr. Thomas, of Liverpool.

Mrs. Green (to young physician, whom she has called in haste)—“Oh, doctor, doctor! I fear you have made a terrible mistake! My daughter had that prescription which you sent her last night filled, and took a dose of the medicine. Now she exhibits every symptom of poisoning. Oh”—

Young Physician.—“Prescription, madam? Why, that was an offer of marriage!”—*Puck*.

Original Articles.

MODERATELY CONTRACTED Pelves.¹

BY RAY W. GREENE, M.D., OF WORCESTER.

I BRING to your attention to-day the subject of moderately contracted pelves, in the hope that many of you will think it profitable to discuss some of the phases of this vital question. Since the department of obstetrics makes up so large a share of the work of the general practitioner, this subject deserves, it seems to me, more universal attention. Springing from this subject are questions which on the one hand affect beyond calculation the most sacred interests of the family, for the life of a mother and her child is in peril; on the other hand, the physician is confronted with complex problems, which, for their solution, appeal to the resources at his command in the art and science of midwifery, and to the sanctions of conscience as well. Indeed, no greater responsibility can come to any of us than when obliged to decide upon some action which means the sacrifice of human life though yet unborn; or when our decision by inaction may entail a more terrible calamity, because possibly a needless one, the sacrifice of the mother as well. Furthermore, are we justified in violating the course of nature by procuring a premature birth, with the hope of doing little or no injury to either and saving the life of both?

In treating these questions, let no one infer that I seek to bring into controversy the religious aspect of the case, while I keep in mind the highest duty of our profession, namely, to save life, and that the life of the mother is paramount to the life of the child. The limitation which I have put upon my subject, moderately contracted pelves, precludes those cases which we can easily decide must terminate fatally but for the prompt execution of some one of the major operations, like craniotomy or Caesarian section. Nevertheless, the pelvis of moderate contraction is not without its dangers to both mother and child, and the treatment of such cases demands closer study and more deliberate judgment than those of a more pronounced type. And here it is that the appropriate treatment brings the highest rewards.

The three cases which led me to look up this subject came under my observation within a six months, and are as follows:

Mrs. M. came under my care at the completed term of the first pregnancy. I was summoned early of the morning of February 24, 1891. She is of American birth, average height, twenty-seven years of age; been married eighteen months. Since eight years of age, she has been more or less delicate, owing to slight injury to spine at that time, “which some years later developed caries of the lumbar vertebrae, leaving a depression in that region which disappeared under treatment of many months in a New York hospital.” There followed a slight impairment of locomotion, and after a fall some three years ago from a hammock, striking on one hip and side, she has not been able to stand on her feet without help, more from fear, as she expresses it, than from any other cause. The general health has been very good of late, especially during the pregnancy. On inspection, there appeared no deformity of the spine. The pelvis was symmetrical,

¹ Read before the Massachusetts Medical Society June 9, 1891, and recommended for publication by the Society.

the hips on the same level. The thigh and leg muscles were much atrophied.

The pelvic measurements were, namely, anterior superior iliac spines, $8\frac{1}{4}$ in.; crests, $9\frac{1}{2}$ in.; exter. conj., $7\frac{1}{4}$ in.; inter. conjugate, $3\frac{3}{8}$ in. There seemed to be a greater inclination of the pelvis than usual, and the promontory of the sacrum was exceedingly prominent. The labor, which had begun at 1 A. M., February 24, and the membranes rupturing an hour later, progressed very slowly. The head was located at the fundus on right side, with back toward left. The foetal heart heard very distinctly on all sides of the umbilicus. By vaginal examination at 10 A. M., found a foot presenting, the os admitting one finger, with the cervix but little taken up.

During the evening of same day, the patient was seen by Dr. L. Wheeler, at which time the os was dilated to size of silver dollar, cervix taken up. The pains were only of moderate intensity and came at long intervals. He agreed with me as to the grave prognosis for the child. We decided that there was no indication for interference with the labor. On my first visit of the second day, 7 A. M., I found the patient had rested some, with the aid of a small dose of chloral and opium. The os was now fully dilated. During the forenoon the pains did not improve much in power or frequency, so that the patient was somewhat fatigued and more nervous. After thirty-six hours of labor, ether was given and the body was easily extracted, but the head was firmly held at the superior strait. In this work I was ably assisted by Dr. G. O. Ward, and it was with the greatest difficulty that our combined efforts succeeded in getting the head through. Attempts were made to get the extended arms down, but only succeeded in getting one out before the head. The foetal heart, which was strong and regular before the operation, beat faintly for one-half hour after birth; but all efforts (lasting nearly an hour) to resuscitate the child proved unavailing. The child, a male, weighed $6\frac{3}{4}$ lbs. The bones of the skull were firm; the bi-parietal diameter measured $3\frac{3}{8}$ in. The third stage of labor was normal. The patient recovered from ether well; the pulse was of fair strength, about 130. One hour later, the patient suddenly went into a collapse. The pulse was scarcely felt at the wrists at times, during the next two hours. The usual treatment for shock was inaugurated. For two days, the mother's condition was most critical; gradually improvement set in, and convalescence, though slow, was marked by nothing of special interest.

The second case is that of Mrs. A., American, of more than average size, twenty-seven years old; married a few years. Always had good health. In October, 1886, her first pregnancy was terminated by a difficult labor, lasting several days; delivery finally accomplished after craniotomy. In May, 1890, the patient, being about two months pregnant, placed herself under the care of Dr. Leonard Wheeler, who asked me to see the case and make pelvic measurements. Taking the measurements independently of each other, our figures very nearly coincided, so that the average were as follows:—

Anter. sup. spines, $9\frac{1}{8}$ in. Crests, 10 in. Exter. conj., $7\frac{1}{2}$ in. We were quite surprised in not being able to reach the promontory per vaginam, from the fact that the walls of this passage were marked with cicatricial tissue, which seemed to shorten the vagina, and we could in no way push the vault up quite to

the extent of a finger's length. By estimation we placed the inter. conjugate diameter at $3\frac{1}{2}$ to $3\frac{3}{4}$ in. The outlet of the pelvis seemed ample. As the family were exceedingly anxious to have a living child, I agreed with Dr. Wheeler that premature labor at the eighth month offered the best chances to secure this end.

Under most thorough antiseptic precaution, in the thirty-sixth week, Dr. Wheeler inserted a bougie into the uterus. Two days later, no pains appearing, Barnes's dilating bags were used effectively, and an easy labor of a few hours gave a living child, born in the O. L. A. position; weight, $6\frac{3}{4}$ lbs. It required but little manipulation to get the child started in life, and its later development has been most satisfactory. It now weighs 19 lbs., being seven months old. The convalescence of the mother was perfectly normal.

The third case. Mrs. M., American, age thirty-one, married, average height, quite corpulent. From an obstetrical point of view, she has an eventful history. From August, 1881, to January, 1890, she was eight times pregnant, with following results: three miscarriages in the third or fourth months, with adherent placenta; one breech, which died in utero near full term and retained two weeks after its death; one footling, which died in being born; three vertex presentations, two of which were delivered alive with forceps and now living; one died in birth (forceps delivery). I saw her in the maternity-ward of the Worcester City Hospital, in Dr. Wheeler's service. The pelvic measurements were taken by Dr. Wheeler, Dr. Ward and myself. While not exactly the same, the average might be as follows: at the ant. sp. spines, 11 in.; crests, $11\frac{1}{2}$ in.; exter. conj., $7\frac{3}{4}$ in.; inter. conjugate, $3\frac{3}{8}$ in. March 15, 1891, supposed to be the thirty-sixth week, at noon, the bougie was placed in the uterus and held by cotton tampons in vagina. Labor began little after midnight, and in $3\frac{1}{2}$ hours child was easily born in good condition. Girl, weighing $5\frac{5}{16}$ lbs.; length, 18 in. Mother had normal convalescence.

Cases like these well illustrate what I mean by the term moderately contracted pelves. If asked to put it in figures, I should say that pelves of the flat variety and justo-minor type, whose internal conjugate diameter measures not less than 3 in. and $3\frac{1}{2}$ in. respectively, would come under this head.

Dr. Edward Reynolds has given the best and latest statistics on this subject, which are found in the last number of *Gynecological Transactions*, under the title of "The Frequency of Contracted Pelvis among American Women."

While this abnormality is comparatively rare in this country, it is very difficult to state the exact frequency, from the fact that so little attention has been paid to the subject. It seems more than likely that more cases would be found if we were looking for them. How frequently it is that the diagnosis of contracted pelvis is simply a guess, from the fact that the labor was tedious.

Too often, after hours of futile effort, the weary doctor is satisfied with the diagnosis volunteered by some old-time nurse; namely, "That patient is too close built, sure." No measurements are taken; in fact, he knows as little about pelvimetry as the latest methods of cerebral localization. It is also overlooked that many abnormal positions are due to the contractions of the pelvis, and the doctor is satisfied to have

made out the position, he attributes to it all the evils which follow, without thinking to discover the cause (if any exist) of the malposition.

A dwarf, a humpback, or the ankylosed hip would suggest to the dullest or least experienced observer the more than possibility of an abnormal pelvis. But it is also in large and otherwise well-developed women, as in the two cases cited, that slight contractions are found. These cases also well illustrate the way in which most frequently the attention is first called to the pelvis, that is, by one or more difficult labors. Such a history being furnished, the physician would indeed be negligent should he not ascertain the exact condition by measurements, which alone give positive proofs of deformity. Such measurements, to be of value, must be most carefully taken, more than once, with a mind unprejudiced by the history of the case or the theory of any other observer. The measurements of most practical value I have mentioned in the histories of the cases cited.

The text-books very rightly devote considerable space to pelvimetry. The directions should be well studied and frequently practised to insure accuracy. In some cases, there is abundant room for error. In taking the external conjugate, it is with difficulty that you can be sure of your posterior landmark, especially in patients at all corpulent. This measurement should never be substituted for the internal measurement, by which the true conjugate is estimated. To be sure, there are cases where the promontory of the sacrum cannot be reached, especially in the later part of pregnancy and during labor, when the presenting part interferes; but more often the cause of failure is due to the fact that too many have never been taught or never acquired the art of thorough pelvic exploration.

In addition to actual measurements, it is important for the physician to be able to estimate any deviation from the normal in the pelvic outlet, the inclination of the pelvis, the depth and inclination of the symphysis pubis.

Having secured all the facts in the patient's history, and with a definite idea of the impediments to normal labor, the physician's judgment and skill are now severely taxed in devising his course of action. Here no absolute rules can be laid down. Any procedure must be influenced by the many questions which arise, like the following: the condition of the mother and child, the presentation, the size of the child, is the patient primipara or multipara, whether seen at full term or before.

To consider the treatment in all its detail would greatly exceed the limits of this short paper; therefore, I will make my discussion of the treatment centre about the cases given.

Here, in the first place, we have a primipara at full term when first seen, membranes ruptured, os but little dilated, pains weak and at long intervals. Measurements confirm our suspicion of contracted pelvis. The internal conjugate $3\frac{1}{2}$ to $3\frac{3}{4}$ in. The presentation is a foot. Here there can be but little difference of opinion as to treatment. The child is evidently vigorous, and the condition of the mother demands no immediate interference.

Our duty, then, is to make every provision possible for the maintenance of the good condition of the mother, for the labor is likely to be a long one, and it is desirable at least that the cervix become well dilated before any untoward event compel us to assist

in the delivery. Inasmuch as the mortality of this presentation in a normal pelvis is by no means inconsiderable, only a guarded prognosis for the child could be given to the family. We were conservative enough to wait several hours after the os was fully dilated (the mother and child being in good condition) in the hope of getting stronger pains.

In interfering after thirty-six hours of labor, we expected by effecting a speedy delivery to relieve the mother and save the child. In this we were disappointed. Had we been able to get out quickly the extended arms, I think we might have saved the child, where the internal conjugate was but a trifle less than the bi-parietal diameter of the child's head.

Take this case again; with the exception that the head presents instead of a foot, would we have been more likely to have saved the child? To be sure, in slight pelvic contractions there are cases where spontaneous delivery has taken place, the child being born alive. But in this case the contraction is more than a slight one. The all-important factor in spontaneous delivery is wanting, namely, strong pains. Besides, the greater than normal inclination of the pelvis would, it seems to me, be unfavorable to a speedy engagement at the brim, even though the pains be tolerably strong. It might be said that had the vertex presented, we would have had better pains; but that is unlikely, from the temperament of the patient, which is more nervous than muscular. And had powerful pains been present, it is more than likely that the patient's strength would have been exhausted long before the head could be moulded through the superior strait. In hoping for a natural delivery, we are not justified in allowing the labor to be long continued, without progress, at the expense of the vital forces of the mother. Take it for granted that the child is alive, what assistance should be rendered? Shall it be forceps or version or perforation?

Just as natural labors sometimes occur in contracted pelves under favorable conditions, so likewise the forceps, while theoretically contraindicated, may be of service in supplementing the natural forces. The objections to forceps are that they tend to increase the diameter of the fetal head, which is already too large for the pelvic conjugate, and otherwise disturbs the normal mechanism so that an unsafe amount of traction force is made necessary. The chief objection to the use of the forceps in these cases is the immense amount of harm they are capable of inflicting upon the mother. I will admit that the unskilful operator is many times the cause of these injuries, rather than the instrument. As illustrating the unsatisfactory results of high forceps, I find in Lusk Dr. Harold Williams's figures quoted. He collected 119 cases of forceps applied above the brim. Of the mothers, nearly 40%, of the children, nearly 60%, perished. Of course, these figures are, in a *measure* only, applicable to pelves of moderate contraction. "The forceps," says Lusk, "as a means of delivery before fixation of the head, should be discarded, not because it cannot be employed with success, but because its use, even in the most skilful hands, is extra-hazardous."

The forceps being ruled out, the next consideration should be version. Between these two operations, the controversy has been long and bitterly partizan. The French, in years gone by, have given no alternative for forceps, except craniotomy. But the opera-

tion brought into fashion in Great Britain by Sir James Simpson has been quite generally accepted in this country, as an elective operation in deformed pelvis. The value of turning is well stated by Barnes, in his lectures on obstetric operations, from which I quote: "The value of turning in moderate degrees of pelvic contraction rests greatly upon the truth of the following proposition: The head will come through the pelvis more easily if drawn through base first than if by crown first." Other great authorities have affirmed this proposition, while others have disputed it. Dr. Barnes says: "I venture to submit that I have made such clinical observations as are equivalent to direct experiments." He cites cases where, having failed in the use of forceps, he does version and delivers the aftercoming head *easily*.

The proposition is proved by these two circumstances: first, the bones of the foetal head overlap more readily at the sutures, when the base entered first; and, second, the head is rarely, or never, seized in its widest transverse diameter. It is seized by the conjugate at a point anterior to its greatest width, that is, at the bi-temporal rather than the biparietal diameter.

The chief objection brought against turning in a narrow pelvis is the fact that it exposes the cord to compression, such as occurs in breech presentations. Dr. Simpson and others are of the opinion that a slight projection of the promontory of the sacrum gives a marked hollow on either side, in one of which the cord is better protected than in case of normal pelvis.

Any destructive operation should rarely need be considered in a moderately contracted pelvis, providing due skill and prompt action were shown in the employment of version; having failed in this, we must then resort to perforation to the aftercoming head. But only when the child is dead, or the interests of the mother plainly contraindicate version, should craniotomy be the elective operation.

I am aware that the Caesarian operation has been elevated of late years from the condition of a "forlorn hope" to a standard which compares favorably in statistics with any of the operations considered. Such specialists as Grandin, of New York, and others, are so emphatic in their endorsements that they would in every case select it before craniotomy, provided the child be alive. They also show such good records from recent hospital practice that they feel warranted in electing this operation in preference to forceps or version, in cases even of moderate contraction when the chances seem against the delivery of a living child. However promising the outlook for the future of Caesarian section, it must for many years, at least, remain the exceptional procedure with the large majority of physicians in private practice.

In the case of the two other labors which I described, we stand on vantage ground, remote from the necessity of immediate action and in the possession of instructive history. The amount of contraction, not great, is chiefly in the conjugate diameter, which measures from $3\frac{1}{2}$ to $3\frac{3}{4}$ inches.

Both the patients are multiparæ. In the one case, a child had been sacrificed in the interest of the mother, who well nigh succumbed to the long and tedious labor at full term, terminated by an exhausting operation. In the other case, a married life of ten years had been filled with fear and foreboding, as

the termination of each of the eight pregnancies seemed to this unfortunate woman, at least, the very gate of death.

Many of you are doubtless reminded of cases where the woman is carried through repeated pregnancies, expecting safe delivery at term by some lucky procedure, which sooner or later fails to save her life.

We need, then, no apology for violating nature's course in recommending the induction of premature labor. Nature herself sometimes shows the way by producing spontaneous delivery before full term in contracted pelvis. The successful issue of these two cases justify the procedure. The statistics in the books are not altogether favorable, but they are misleading. As Professor Dorhn remarks, it is a question of values, which cannot properly be compared, because the cases involved present an endless variety of dissimilar conditions. The only fair way is to compare the results of premature labor with the results of labors at full term in the same patients. Viewed in this way, he reports 19 cases at term, with 41 children, of which 37 died, while in 25 pregnancies premature labor was induced, with 15 living children.

Milne, in the *Edinburgh Medical Journal*, Vol. XIX., furnishes the most remarkable report, namely: six women gave birth at term to 12 children, of which 11 were dead. In the succeeding 38 pregnancies, premature labor was induced, and 35 children were born living.

This operation is undertaken with the hope of saving both the child and the mother, but at all events to make more secure the safety of the mother. The twofold condition which works favorably for the child is the fact that the foetal head is not only smaller, but much more plastic at the eighth month than at full term, so that with less compression and less time it passes through the shortened diameter of the conjugate. The loss of the child is generally due to the fact that the immature vital powers are inadequate to the pressure caused at birth, and to the struggle for existence after birth.

By premature labor, the mother is not simply saved from the hazardous risks connected with the major operations, but from the severe sufferings incident to a long labor at full term, and also from the many lesions consequent upon such labor, which often renders the patient's after life one of endless sorrow. Scarcely any one would take exceptions to this procedure in cases like the two I have described, but would hesitate to recommend it in a case of primipara of the same pelvic measurements. Professor Dorhn makes no difference between multiparæ and primiparæ, but applies to either the same treatment for the same degree of contraction. Thomas puts it in a more general way. He says that "wherever it is estimated, or as is far better where it is proved, that a child at full term cannot be delivered except by instrumental or manual means, premature delivery is called for"; and I may add to this conservative statement what many others believe, that the physician is recreant to his duty if he fails to advise it. The degree of contraction demanding this operation is, according to most authorities, one where the internal conjugate measures $3\frac{1}{2}$ in. or less, and the best time for the operation is the thirty-fourth or thirty-sixth week. Of course, this would depend somewhat on the pelvic measurements, and also on the size of the child. Some writers recommend the thirty-second to thirty-fourth week.

This operation has been too often unsuccessful in the past, in part because the operator has undertaken the task with too little knowledge or appreciation of the important subjects involved. Such as the correct estimate of the size of the pelvis by exact measurement, and of the size of the child by intelligent palpation rather than trust too implicitly in the so often deceptive calculation of the period of pregnancy, the hygienic care of infants prematurely born, the choice of method on the part of the physician, and his close attention during the operation.

When due attention is given to all the details, better results will follow, and this operation will be placed on a scientific basis, in keeping with the recent progress made in the department of obstetrics.

For sake of brevity, I have omitted very much of importance, but trust enough has been said to emphasize by way of suggestion, at least, three things:

(1) The importance of the subject demands a more general study of pelvimetry.

(2) Early resort to version is a safer operation for the mother than forceps, when the head fails to engage at the superior strait, and in many cases may save the life of the child otherwise condemned to craniotomy.

(3) In premature labor, scientifically managed, we have an operation by which an immense amount of suffering may be avoided, and oftentimes a living child secured.

COMPULSORY NOTIFICATION OF INFECTIOUS DISEASES.¹

BY PHILIP BOOBHYER, M.D.,
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It is impossible with the limits of time and space at my disposal here to discuss adequately, or in all its bearings, the whole subject which such a title as this opens up before us. A brief sketch must suffice. My object will be to state a case plainly and simply for compulsory notification, to enable those who have had no practical experience of its working to form an opinion of its prospective value, and to show how frivolous and premature are the criticisms passed upon it before it has been fairly tried in conjunction with those preventive measures towards the development of which it is simply intended to stand in the relation of a means to an end.

By compulsory notification of infectious diseases we understand the legal obligation to send immediate notice respecting the occurrence of certain infectious diseases to the sanitary authority of the district in which the affected person or persons are for the time being resident, together with a few particulars of place and people for the guidance of the authority. Different persons have been made responsible for the performance of this duty under the several Acts.

In one small class the householder alone is mentioned, he or she being responsible to the sanitary authority. This system of so-called householder notification has been tried in some three urban districts, of which the town of Greenock is one, and has proved a complete failure in all. The cause of the failure is not far to seek. The majority of people do not care to notify unless compelled to do so. Under this system there is practically no compulsion, for in the

event of prosecution for neglect to notify the onus of proving a guilty knowledge on the part of the responsible layman rests with the authority, and such proof in the majority of cases is not very readily obtainable. A case has recently occurred in Nottingham, where a man in good position sent a servant from his house in the town to her home in the country while suffering from scarlet fever, contracted through attendance upon his child, but in which a prosecution has had to be abandoned, because it was found impossible to produce legal evidence of a guilty knowledge of the girl's condition on the part of the master, without resorting to means to secure conviction, which public authorities in such cases are naturally loath to adopt.

This prosecution was instituted under section 126 of the Public Health Act, 1875, but had it been a case of simple failure to notify the sequel would have been the same.

Under the so-called "dual" system, which is that adopted in Mr. Ritchie's Act of 1889, and which was in force prior to that Act in fifteen of the greater towns of England, and in nearly all the smaller urban districts under notification, it devolves equally upon both householder and medical attendant, to notify to the sanitary authority direct. In practice, however, by the tacit consent of all parties, this system is almost invariably allowed to resolve itself into notification by the medical attendant alone. The accuracy of this statement has, I know, been recently called in question, but it is borne out by the unanimous testimony of all those who have had practical experience in the matter.

The "single" system, so highly lauded by the opponents of the "dual," is in force in three considerable towns only, namely, in Bradford, Norwich, and Nottingham.

Under it the medical attendant is required, immediately after diagnosis, to fill up and hand to the householder a printed notification form, which the latter in turn is directed to transmit forthwith to the sanitary authority. So much for the theory of the system. In practice, the notification is left entirely to the medical attendant, who keeps his book of forms at home, and sends his certificate direct to the medical officer of health.

In Nottingham, I have found that out of 1,508 consecutive notifications, 1,360, or 90 per cent., were made by the medical attendant as above stated; 9, or 59 per cent., by the householder in the manner prescribed by law, and the balance, less than 10 per cent., by myself, by officers of my department, by the police, or by neighbors of the affected families.

Before the passing of Mr. Ritchie's Act of 1889, which was made compulsory for all London, but optional elsewhere, compulsory notification was in force under local Acts in 56 urban districts of England and Scotland. Although local powers for its practice were obtained in some cases as early as 1876, it did not come practically into operation, except in a few cases, before 1882. Of the 28 greater English towns, including the metropolis, 17 had adopted it prior to 1889, and 11 had not, London being among the last.

In only a comparatively small number of the towns was a complete schedule of notifiable diseases adopted from the outset. In most cases an experiment was made with two or three diseases, small-pox, scarlet fever, and typhus, or small-pox and scarlet fever only,

¹ Paper read before the International Congress of Hygiene and Demography, Section for State Hygiene, London, August 14, 1891.