The subject of undue renal mobility has been within the last twenty years so extensively debated and written upon that I should have hesitated to add to the already overburdened literature, were it not that, in spite of the large amount of testimony accumulated, the views of authorities are by no means unanimous either as to its causation, frequency, or symptomatic importance.

It is particularly in its relation to gynaecology that the ill results of this non-agreement are to be observed.

One frequently sees patients who have undergone prolonged medicinal treatment or operative procedure for pain of supposed pelvic origin, but which on closer investigation, and in consequence of its persistence in spite of such measures, has proved to be due to an unduly movable kidney.

**The Frequency of Movable Kidney.**—A large number of observers have supplied statistics on this point, with results so different as to cause confusion in the minds of any one who endeavours to draw conclusions from them.

Thus, Edibohl found 90 in 500 cases, Glenard\(^1\) 1 in every 4 patients examined, Lindner 1 in every 5, Senator\(^2\) 1 in 171, Hilbert\(^3\) only 1 in 100, Einhorn\(^4\) 74 in 343, whilst Madsen,\(^5\) whose contribution is recent, found 60 in 100 cases.

Mr. Henry Morris, reviewing the subject, says that probably 7 to 10 per cent. of all women have abnormally movable kidneys.\(^6\)

**The Causes of Disagreement.**—The causes of such marked disagreement may be sought for in several directions.

In the first place, much depends upon the nature of the clinic at which the cases are studied; those devoted to abdominal and pelvic disease naturally attract an undue proportion, whilst those devoted to other branches of the art probably yield an undue scarcity of such patients.

Secondly, much depends upon the persistence with which the patients are examined. I would reiterate what has been already insisted on by Henry Morris, namely, the importance of repeated examination; I have frequently found an extreme degree of

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\(^1\) Lyon méd., 1885, etc.
\(^2\) Charité-Ann., Berlin, 1883, Bd. iii.
\(^3\) Deutsches Arch. f. klin Med., Leipzig, 1892.
\(^4\) Med. Rec., N.Y.
\(^5\) Nord. med. Ark., Stockholm, 1902.
\(^6\) "Surgical Diseases of Kidney and Ureter," 1901.
mobility at the second, third, or even fourth examination when those preceding it have been negative in their result. Moreover, I would add to this, the necessity of examining all patients in the standing posture. The clinician who neglects to do this will certainly miss a large number of cases.

And, thirdly, the views of authorities as to what constitutes an unduly movable kidney vary within wide limits, a point to which I shall revert later on.

Lastly, there is a fourth cause of disagreement, which is highly important, and that is the different methods of palpation used by different observers; and one of my objects in writing this paper is to plead for unanimity in examinational method; until this is done, the extreme divergence of results will continue with its attendant evils.

The Best Method of Palpation.—The method which I advocate most strongly, as alone giving reliable results, is that described by Glenard as "palpation nephroleptique." To carry this out the patient should first lie upon her back, and if the abdominal muscles be rigid both legs should be drawn up. Slight lateral flexion towards the side to be examined gives a further laxity to the parts.

In examining the right kidney the fingers of the left hand are placed over the twelfth rib behind, whilst the thumb gently grasps the anterior parieties immediately below the costal margin (see Plate V. Fig. 1). The patient being told to breathe quietly, the loin is now gently compressed, until the thumb can feel the anterior surface of the quadratus lumborum, whilst internally its tip rests against the ridge formed by the spine and psoas muscle.

The patient is now told to take two or three deep but quiet inspirations, the compression of the loin being maintained. As the diaphragm descends, the lower end of the kidney will be felt to butt against the barrier formed by the approximated fingers and thumb. After two or three inspirations, during which the examiner is appreciating and grasping the fact that it is the end of the kidney that he feels, the patient is told to take another, and, if possible, longer and deeper inspiration. As the kidney touches the hand, the examiner gently raises his thumb, still maintaining a partial pressure, when the organ will be felt to pass either wholly or partially within his grasp. At the very height of inspiration, the thumb, with a somewhat sweeping movement upwards, sharply compresses the loin against the barrier formed by the fingers behind, thus "nipping" the kidney. If the lower end of the organ be so nipped, the kidney recedes upwards under the shelter of the ribs, and cannot be arrested in the loin.

This is the first degree of renal mobility (see Fig. 5).

If it be caught exactly at its middle, it can be held so in the loin, a proceeding, however, usually accompanied by some little discomfort to the patient.
This is the second degree of renal mobility (see Plate V. Fig. 2, and Fig. 6).

If, however, the upper end be grasped, the kidney is forced downwards in a manner similar to that which obtains when a schoolboy squeezes a cherry-stone from between his finger and thumb. The compression of the loin then prevents the expiratory return of the organ, and the right hand, previously passive, is used to palpate it in its abnormal position.

This is the third degree of renal mobility (see Plate VI. Fig. 3, and Fig. 7).

In the standing posture, which should always be adopted after the examination in the horizontal position, the patient should lean slightly forwards and towards the side to be examined.

The examiner, who sits on a chair in front and slightly to the side of his patient, should be careful to see (by palpation with the free hand) that the kidney is not already lying below the compressed loin, otherwise he is liable to miss the more extreme degrees of abnormal mobility (see Plate VI. Fig. 4). When we compare "palpation nephroleptique"
with the bimanual method of palpation (the method commonly used in this country) we find that it has several marked advantages. First, it enables the kidney to be palpated throughout the latter half of inspiration, and the greater half of expiration, whilst the bimanual method consists in making brief plunges at the kidney at a moment corresponding to the beginning of expiration. Secondly, it leaves one hand free to palpate the kidney in its abnormal position, or it may be used to simultaneously examine the mobility of the opposite kidney. Thirdly, it is admirably suited for examination in the standing posture, in this respect having a great advantage over the bimanual method. And lastly, and perhaps most important of all, it furnishes a rough but sufficiently accurate measure for classifying the degrees of renal mobility.

When is a Kidney Unduly Movable.—Henry Morris considers that any kidney, whose mobility is such that its lower half can be grasped by the hands at the height of inspiration, is abnormal. Glenard says that all kidneys are unduly movable, "the lower pole of which can be grasped between the fingers of the two hands, on the patient taking a deep inspiration." Madsen is of opinion that every kidney, able to be felt bimanually in the horizontal position, is abnormal. Mansell Moullin lays great stress on the failure of the kidney to return to its normal position, after it has been displaced downwards by forcible inspiration, the patient being in the standing posture.

It is, however, well known, that undue mobility, by whatever standard it is estimated, is by no means constantly associated with symptoms. It therefore appears to me that a distinction must be made between kidneys merely abnormally movable and those injuriously so, and I shall endeavour to show that the presence of symptoms is not simply an accidental circumstance dependent upon individual sensibility of the nervous system, but is directly determined by certain anatomical features, which may or may not characterise the displacement.

Anatomical Considerations.—The anatomical factors, limiting the movement of the kidneys, are broadly two in number. Firstly, the attachment of the perinephric cellular tissues, and especially the perinephric fascia, to the diaphragm above; and, secondly, the perinephric and retroperitoneal fat which supports it from below. Simple failure of its diaphragmatic attachment causes the kidney to move more or less independently of respiratory movement, and hence "expiratory return," on which Mansell Moullin lays stress, is absent in such cases. So long, however, as the perinephric and retroperitoneal fat continues to support it from below, the mobility, although abnormal, is not directly injurious. But when this support is also denied it, the organ

1 Quoted from Morris, "Surgical Diseases of Kidney and Ureter," 1901.
2 Brit. Med. Journ., London, 1900.
3 See R. T. Morris, "New York Academy of Medicine," 1900.
INJURIOUS RENAL MOBILITY ("NEPHROSPASIS").

comes to hang directly by its pedicle, a state of things which, as I shall presently show, is always accompanied by symptoms.

THE NORMAL MOVEMENT OF THE KIDNEY.—The kidney has two means of normal movement.

The first of these depends upon the movement of the diaphragm, which, during inspiration, depresses not only the kidney but the perinephric fat and cellular tissue as well. This cellular tissue (the perinephric fascia) surrounds the kidney on all sides except its inner aspect, and forms a sort of bag within which the organ lies. Experimenting in the post-mortem room, I have found that this respiratory excursion of the kidney and perinephric tissue can be extended to some 2 in., when the lungs of the cadaver are forcibly inflated. The movement of these tissues can be extremely well seen through the incision made to expose the kidney during an operation upon it. We may call this the "diaphragmatic movement" of the kidney, and it will be noticed that it is an equal and coincident movement of both the kidney and its normal supports. The extent of diaphragmatic movement varies very much in different persons, being undoubtedly much more extensive in women whose anterior parietes are lax, and whose abdominal capacity is large. For this reason it is, I think, generally greater in women who have borne children than in those who have not, and therefore the diaphragmatic movement of the kidney is apt to be more extensive in the former than in the latter. Diaphragmatic movement however, no matter how extensive, is not to be considered injurious in the presence of "expiratory return," for the presence of this sign indicates that there is no loosening of the diaphragmatic attachment of the perinephric structures. And, secondly, the kidney, has, within certain limits, a normal range of movement within its capsule of fat and perinephric fascia.

From examination of the cadaver I have found that this "intra-capsular movement" varies in different individuals, but is commonly between 1 and 1½ in. in extent.

In all probability this movement ordinarily remains merely a potentiality, and explains the "cherry stone" displacement of which I have already spoken, by which one is able to superimpose upon extensive "diaphragmatic movement" a further "intracapsular movement." It is certain that in normal individuals the renal pedicle has no part in the supporting of the kidney, and the fact that it does so when, from certain causes, the kidney has lost its normal means of support, is the essence of injurious renal mobility. I have tested this many times by dividing (in the cadaver) the renal pedicle through a small incision in the peritoneum, without otherwise disturbing the relation of the parts. In the majority of the cases this division did not increase in the slightest degree the retroperitoneal mobility of the organ. In two cases, however (both in women), the extent of possible movement was markedly increased; in one
case by as much as 4 in. It is obvious that when the movement of the organ is only limited by the length of its vessels, the division of these will greatly increase the extent of that movement.

I would suggest to those engaged in post-mortem work, that a series of such observations, together with careful measurements of the length of the renal vessels, would be a valuable addition to our knowledge concerning undue renal mobility.

There is a clinical point of much importance on which such observations would have much bearing, and that is the inward rotation of the lower pole of the kidney around an antero-posterior axis, which is to be observed in a large number of cases of abnormal mobility of that organ.

When the kidney, from failure of both its normal means of support, comes to hang by its pedicle, any further downward movement must necessarily be accompanied by an inward rotation of the organ, since the attachment of the renal pedicle to the aorta and inferior vena cava forms a fixed point about which the kidney must revolve (see Plate VI. Figs. 3, 4, and Fig. 7). This inward rotation, then, is the clinical sign that the kidney is dragging on its pedicle, and its detection is an absolute proof that we are dealing with a mobility, not only undue in extent, but involving an abnormal and injurious strain on the renal pedicle with its contained vessels and sympathetic nerves.

I look upon this displacement as by far the most important evidence of injurious renal mobility, and it has never been present in my series of cases unaccompanied by symptoms.

RESULTS OF THE EXAMINATION OF 100 WOMEN.—I have systematically examined 100 consecutive patients attending my out-patient department, at the Chelsea Hospital for Women, with the following results.

Many of the cases have been examined many times over, and in no case did I decide that the kidney was not abnormally movable on a single examination.

The Degree of Mobility in 100 Cases.

|             | Right Kidney |         |         |
|-------------|--------------|---------|---------|
| Kidney not Felt | 1st Degree. | 2nd Degree. | 3rd Degree. |
| 9 cases.     | 29 cases.    | 22 cases. | 40 cases. |
| Left Kidney  |             |         |         |
| 41 cases.    | 38 cases.    | 10 cases. | 11 cases. |

Both kidneys exhibited the third degree of mobility in nine cases.
Fig. 1.—Palpation Nephroleptique. Grasping the loin.

Fig. 2.—Palpation Nephroleptique. The kidney lies under the thumb of the left hand, the right hand steadies its lower end. There is no "inward rotation."
Fig. 3.—Palpation Nephroleptique. The kidney lies below the thumb of the left hand, the fingers of the right hand steady its lower end. The oblique lie of the long axis of the kidney, consequent upon “internal rotation,” is well shown.

Fig. 4.—Palpation Nephroleptique. Examination in the standing posture. The case is one of third degree mobility with well-marked “inward rotation.”
An examination of these figures will show that if abnormal movement be estimated, on the principle that that which is less frequent is abnormal, whilst that which is more frequent is normal, then we must admit that, as regards the right kidney, the third degree of mobility is abnormal (though not necessarily injurious), whilst, as regards the left kidney, the second as well as the third degree must be considered to be abnormal.

This is also supported, on the ground that the left organ being naturally higher in the loin than the right, requires a greater amount of displacement to produce third degree mobility than that on the right side requires. In other words, an equal range of movement may produce third degree mobility on the right side, whilst it only produces second degree mobility on the left side.

The figures also confirm what has been noticed by other observers, namely, the much greater frequency of right movable kidney, a fact only partially accountable for by its normally lower position in the loin. The proportion of cases of third degree mobility in my series of cases is much greater than that recorded by any other observer except Madsen.

I attribute this, in the first place, to the fact that I have examined the patients with much persistence, and always in the standing posture. In the second place, it must be remembered that an abnormal proportion of persons suffering from undue renal mobility would present themselves at a gynaecological hospital, so that these figures must not be held to represent the examination of a number of healthy persons. Nevertheless, I believe that undue and often injurious mobility is much more frequent in women, even than is usually held.

### The Effect of Child-Bearing.

### RENAL MOBILITY IN FIFTY-FIVE PAROUS WOMEN.

|                      | Right Kidney |                        |                      | Left Kidney  |
|----------------------|--------------|------------------------|----------------------|--------------|
| Kidney not Felt.     | 6 cases.     | 14 cases.              | 13 cases.            | 26 cases.    |
| 1st Degree.          |              |                        |                      | 19 cases.    |
| 2nd Degree.          |              |                        |                      | 6 cases.     |
| 3rd Degree.          |              |                        |                      | 5 cases.     |
RENAL MOBILITY IN FORTY-FIVE NULLIPAROUS WOMEN.

|                      | Right Kidney. |                      |                      |
|----------------------|---------------|----------------------|----------------------|
|                      | 3 cases.      | 15 cases.            | 9 cases.             |
|                      | 18 cases.     |                      |                      |
| Left Kidney.         | 16 cases.     | 19 cases.            | 4 cases.             |
|                      | 6 cases.      |                      |                      |

These figures show what is familiar to all who have interested themselves in the subject, namely, that child-bearing does not increase the mobility of the kidney, on the whole.

This is probably to be accounted for by the fact that the increased diaphragmatic movement which is customary in women who have had children is balanced or more than balanced by the tendency to matronly obesity.

**The Effect of Age.**

In 68 women under 35, the third degree of mobility was present in 28.
In 32 women over 35, " " " " 14.

These figures indicate that, within the limits of active life, advancing age does not increase, to any extent, the liability to abnormal mobility of the kidneys.

It is, however, a noticeable fact that symptoms, due to abnormal renal mobility, are uncommon both in the very young and in the aged.

In my list of cases, only three patients exceeded 55 years of age. The youngest was 20.

**The Relation between Degree of Mobility and the Presence of Symptoms.**

|                      | Right Kidney. |                      |                      |
|----------------------|---------------|----------------------|----------------------|
| Degree of Mobility.  | 1st degree    | 2nd " "             |
| Number of Cases with | 0             | 25                   |
| Symptoms.            | 29            | 15                   |
| Number without.      | 21            |                      |

|                      | Left Kidney.  |
|----------------------|---------------|
| 1st degree           | 0             |
| Number of Cases with | 38            |
| Symptoms.            | 2             |
| Number without.      | 8             |
|                      | 0             |
These figures show that, as regards the left kidney, we are justified in considering that the third degree of mobility is not only abnormal but injurious, and that, when it occurs, symptoms may be invariably looked for. Even the second degree, it will be seen, may be accompanied by symptoms.

This does not apply, however, to the right kidney, in which we see a large number of cases of the third degree, in which no symptoms were present. This is explained by its normally lower position in the loin, which makes it possible for women with extensive diaphragmatic movement to lower the right organ to such an extent that the thumb can, at the height of inspiration, be got above its upper end.

I have previously suggested that diaphragmatic movement is, on the whole, greater in the parous than in the nulliparous, and we should therefore expect to find a greater number of cases of simple exaggerated diaphragmatic movement in women who have borne children.

My figures bear out this, since twenty-two cases of third degree mobility in parous women gave rise to symptoms in eleven cases, whilst eighteen cases in nulliparous women were associated with symptoms no less than fourteen times.

In determining, then, the question of injurious mobility on the right side, it is specially important to apply the other two tests of which I have previously spoken, namely, the failure of expiratory return and the presence of inward rotation.

The Relations between Expiratory Return, Inward Rotation, and Symptoms, in Forty Cases of Right-sided Mobility of the Third Degree.

| Twenty-five Cases with Symptoms. | Inward Rotation. |
|---------------------------------|-----------------|
| Expiratory Return.              |                 |
| Absent in 23 cases.             | Present in 25 cases. |
| Partial in 2                   | Absent in 0      |
| Present in 0                   |                 |

| Fifteen Cases without Symptoms. | Inward Rotation. |
|---------------------------------|-----------------|
| Expiratory Return.              |                 |
| Absent in 4 cases.              | Present in 0 case. |
| Partial in 4                    | Absent in 15 cases. |
| Present in 7                    |                 |
Similar Relations in Eleven Cases of Left-sided Mobility of the Third Degree.

| All with Symptoms. |  
|--------------------|  
| **Expiratory Return.** | **Inward Rotation.** |
| Absent in 10 cases. | Present in 11 cases. |
| Partial in 1 ,, | Absent in 0 ,, |
| Present in 0 ,, |

These figures, which I have compiled very carefully from the results of repeated examinations, prove, in a striking way, how constant is the association of symptoms with the two clinical signs I have described above, and in their absence I should hesitate to convict the kidney of causing pain, no matter how freely "movable" it was, or, what is still more important, prognosticate relief from operative fixation.

In my series of cases I have not encountered general enteroptosis on any occasion, thus confirming Morris, who states that he has found it a rare accompaniment of "movable kidney."

It will also be noticed that I have been careful to make no distinction between "movable" and "floating" kidneys, because there is no hard-and-fast line to be drawn between those that simply slip down behind the peritoneum (the "cinder-sifting" movement of Morris), and those that, on account of the laxity of this structure, are able to fall forwards as well. If the kidney be examined in the standing posture, it will be found that there is a tendency to ventral displacement in many movable kidneys, of the third degree, whilst it is constant in those that exhibit inward rotation.

The reason of this is, I believe, to be found in the fact that when the renal pedicle tends to become vertical in direction, and the lower end of the kidney to approach or cross the middle line, the organ as a whole ascends the ridge formed by the spine, psoas muscles, and great vessels, and therefore comes to lie considerably forward of its normal position in the renal fossa or "couch."

Such displacement can only be effected by a certain amount of stripping of the peritoneum from off this ridge, and, undue peritoneal laxity having been thus attained, all positions that tend to ventral displacement of the kidney will still further separate the peritoneum from the posterior parietes.

Symptomatically, this ventral displacement causes abdominal tenderness, disallows of pressure being made over the displaced kidney, and, from the fact that it makes the kidney much more easily felt by the patient, attracts her attention to the abnormality much earlier than would otherwise be.
Neither have I made mention of the extremely rare condition in which the kidney is provided with a mesonephron, a condition so rarely met with that it scarcely comes into the practical range of the clinical field.

To summarise, then, we have three classes of abnormal renal mobility.

1. Those cases in which the condition is solely one of exaggerated diaphragmatic movement. Expiratory return is present, and inward rotation absent. These cases give rise to no symptoms.

2. Those cases in which the diaphragmatic attachments of the perinephric structures are relaxed or gone, with consequent failure of expiratory return, but as the perinephric and retroperitoneal fat still continues to support the organ from below, inward rotation is not present. These cases give rise to none, or only very slight symptoms, but are the first step towards injurious renal mobility, into which they may eventually pass.

3. Those cases in which, from loss of both its upper and lower supports, the kidney comes to drag directly upon its pedicle, as evidenced by inward rotation as well as absence of expiratory return. These cases are always accompanied by symptoms, and it is to them that the expression “injurious renal mobility” peculiarly belongs. Further, it is to this class that I have ventured to apply the term “nephrospasis” which appears in the title of this paper.

The expression “movable kidney” is admittedly a very bad one, founded as it is on the erroneous idea that the kidney was a fixed organ.

The word nephroptosis, apart from its want of euphony, has the disadvantage of making no distinction between the very definite classes of abnormal renal mobility. It certainly includes the last two, even in its narrowest interpretation. I suggest, therefore, that the term, nephrospasis (νέφρο-σπασίς), from σπαω, I drag or strain upon, should be used to describe those cases in which the normal supports of the kidney are so weakened that the organ comes to hang by its pedicle, and so to exercise an injurious strain upon the important vessels and nerves contained therein.

The Gynaecological Importance of “Movable Kidney.”—

The symptoms ascribed to a “movable kidney” are very numerous, and cases are recorded in which disease of any abdominal organ has been simulated. The similitude, however, is closest, and the distinction most difficult, in the case of disease of the pelvic organs. The earliest and only constant symptom of an injuriously movable kidney is a dull, aching pain in the back, and very often this is the only symptom present. The intensity of the pain varies enormously in different cases, and it is in those in which it is comparatively slight and unaccompanied by any other “localising symptoms” that the diagnosis is most difficult. The pain, however, has, when examined closely, very characteristic
It is situated in the back, in a position corresponding to the upper lumbar vertebrae, and from thence radiates transversely around the waist. This radiation is around the side on which the offending organ lies. In some cases there is a further radiation of pain downwards along the outer half of the front of the abdomen and thigh.

One of the most striking points in connection with this symptom is its tendency to remit or altogether disappear, for periods varying from a few days to many weeks. Such remissions correspond to periods during which the kidney, for reasons which it is difficult to understand, remains in its normal position. The patient has good days and bad days, and examinations carried out on the former will probably be negative.

The pain is of a dull, aching, and wearing character, intensified by constipation, and frequently worse at the menstrual epoch, but its distinctive feature is its complete relief, either instantly or after some while, on assuming recumbency. This is so constant that the mere history of an abdominal pain, which is not present on waking in the morning, but which comes on as the day progresses, should awaken suspicions of an injuriously movable kidney.

There are, of course, many other symptoms which, when present, obtrusively call attention to the kidney as their seat. Such are the patient’s complaint of a moving tumour, great hyperæsthesia over the front of the loin, violent attacks of spasmodic pain due to renal torsion, especially when associated with gastric symptoms or hæmaturia. But these are, as I have said, by no means constant, and it is in the cases in which dull aching pain is alone complained of that the diagnosis is most difficult.

Women suffer, when compared with men, with an extraordinary number of strange abdominal pains and sensations, some of which are absolutely inexplicable in the light of our present knowledge. But it is no exaggeration to say that backache, when complained of by a woman, is invariably associated in both the lay and medical mind with some abnormal condition of the generative organs, and the possibility that this symptom may depend upon a loose kidney is overlooked. The three commonest causes of chronic pain of pelvic origin in women are backward displacement of the uterus, downward displacement of the uterus, and disease of the appendages. To these we must add, in this connection, that produced by constipation. It is when an abnormally movable kidney coexists with these conditions that the diagnosis is most apt to be obscured.

In differentiating we must examine, firstly, the location of the pain, and secondly, the effect of recumbency. The pain of the backward displacements of the uterus is referred to the sacrum, and inasmuch as the broad ligaments are dragged upon, there is often a further pain radiating outwards across the front of the
lower abdomen and more or less parallel with Poupart's ligament. This may be present on one or both sides.

It is an interesting fact, and one that I have often noticed, that the pain due to retroversion and retroflexion, though modified by dorsal decubitus, is not entirely relieved by it. This is in accordance with the nature of the displacement, and is an important point in distinguishing backache due to this cause from that produced by a movable kidney, in which, as I have said, the pain is always absent when the patient first wakes in the morning, and indeed usually immediately disappears when she lies on her back.

The pain due to prolapse is primarily referred downwards through the vagina and is of a “bearing down” character. It is often associated with more or less backache over the sacrum, and with pain referred to the lower abdomen in the middle line, possibly radiating somewhat to one or both sides. The pain is instantly relieved by recumbency.

The pain due to chronic disease of an appendage is felt in the lower abdomen, radiating outwards, parallel with Poupart's ligament, and is conspicuously not modified by recumbency. Indeed, it is often worse at nights. Appendages, diseased and lying behind the uterus, may cause sacral pain, but it is in no wise modified by lying down. The pain caused by constipation is often difficult to separate from that caused by a movable kidney, more particularly because the latter is accentuated by constipation. It is, however, usually referred to the sigmoid, whereas the commonest kidney to give trouble is that on the right side. The pain, moreover, is lower in its situation and not referred to the back. Further, it is not markedly relieved by dorsal decubitus.

To recapitulate, then, we have in cases of injuriously movable kidney, without marked localising symptoms, a statement that the patient suffers from backache, often said to be worse at the periods, and this may be all that is complained of. There is often that degree of neuroses or hypersensibility which may mislead the practitioner into making light of her complaints, especially as a first examination may reveal nothing amiss. The patient is dosed with bromide of potassium, tonics, or purgatives, and later on, when these measures fail, pessaries may be resorted to, under the supposition that a slight degree of uterine prolapse is at the bottom of the trouble. If the patient has leucorrhoea, endometritis is promptly charged with the pain, and applications or curettage are advised; indeed, as I have said before, more extensive operations than these are sometimes performed in error from this cause.

It behoves us then, in examining any woman for the cause of alleged abdominal pain, to investigate very closely the condition of the kidneys, remembering that the finding of uterine displacements, or even inflammatory conditions in this region, does not, except in the clearly ascertained absence of other abnormalities,
warrant us in instantly assigning all the blame to the pelvic organs.

Further, we must bear in mind that the extent of renal mobility cannot, as a rule, be safely gauged from the results of a single examination. The right kidney is easily felt in most persons, but the left with more difficulty, and therefore it is in cases of abnormal mobility of the left organ that mistakes most frequently arise. It should be understood that crises, hematuria and violent gastric disturbances, are not present in the majority of cases of injurious mobility, and our diagnosis therefore rests on the presence of the typical backache, together with the detection, by frequent examination, of the physical signs of injurious displacement.

The Treatment of Injurious Mobility.—It is not within the scope of this paper to do more than recall the more important points that guide us in determining our curative measures.

There are two main lines of treatment, palliative and operative.

As regards the palliative treatment, it may be said at once that drugs are as useless in this condition as they would be to restrain a hernia or cure a varicocele. Patients are frequently dosed with bromides until a considerable degree of mental depression is effected, and a profuse acne-form eruption is developed, though how such a state of things can better an abnormal strain on the renal pedicle has always been a mystery to me. Purgatives have a certain slight value, since the pain of injurious mobility is certainly accentuated by constipation. Any mode of living or feeding that makes for obesity is good, since poverty in perirenal fat is probably the most potent causative factor. The most valuable palliative agent at our disposal is a well-fitting belt. Belts have, unjustly I think, suffered much disparagement, a fact, however, not to be wondered at if one examines the ordinary type of apparatus supplied by instrument makers.¹

Many of these are useless, and some (particularly those with large hard pads) worse than useless.

Further still, in order that a belt may yield good results, it is absolutely necessary to insure the intelligent co-operation of the patient herself. A patient must be educated to adjust her belt. The universal fault made by persons wearing belts is to put them on in the standing position. This is as irrational as to put a truss on to a hernia which is already down. Belts put on after the kidney has slipped down cannot be tightened, by reason of the painful pressure they make on the prolapsed kidney, and patients declare in consequence that they cannot wear a belt.

It is not perhaps so much the patient's fault as the fault of those advising the belts, who comparatively rarely lay stress on this important point. Still more frequently is it the fault of the

¹ See A. Stengel, "Univ. Med. Mag., Phila., 1899; and Henoch, "Therapie d. Gegenwort," 1899.
maker, who contrives, by means of placing the fastenings at the back of the belt, to render it impossible to properly tighten it when lying on the back. The belt I would advocate fastens in front by means of "busks," similar to those used in corsets. The sides are of strong, broad elastic, cut to the shape of the waist, and narrow from above downwards in the mid-axillary line, so as to compress the loins below the ribs. There is a lace at the back, but merely for purposes of preliminary adjustment, after which the "busks" in front are used to put on or take off the belt.

Lastly, an elastic band sloping from behind downwards and forwards, and fastening in front with a buckle like that on a pair of elastic braces, completes the compression of the loin, imitating the position of the fingers and thumb in palpation nephroleptique. The patient should be instructed to take her daily bath the last thing at night, and to put on her belt before rising from the recumbent position in the morning.

She should be taught to accompany the fastening of the studs with a sustained expiratory movement, so as to reduce the kidneys at the moment of adjustment. With intelligent patients, unencumbered by a quantity of abdominal fat, very excellent results may be looked for in a considerable proportion of cases.

Lastly, as regards nephropexy, we may say that it is indicated in all cases in which a belt fails to give relief, in all cases in which the severity of the symptoms makes relief urgent, in all cases in which haematuria or pain resembling renal colic makes it possible that there may be a calculus in the movable kidney, for this will be decided when it is exposed, and generally in all cases in which there is obvious enlargement of the organ. As a matter of fact, it is surprising how rare it is to find hydronephrosis of a movable kidney, considering how common abnormal mobility seems to be. Nephropexy gives as a rule excellent results, but absolute relief of all symptoms cannot be reasonably expected in every case, when one considers that it is just as abnormal for a kidney to be immovable as to be abnormally movable. The commonest operative error is to fix the kidney too low in the loin, with the result that the patient, who previously only suffered pain when the kidney was down, now suffers more or less continual discomfort and tenderness. The kidney is also often fixed too far outward, with somewhat similar results. Nephropexy is unsatisfactory in neurotic patients, who often get a neuralgic condition of the scar, and more or less disturbed sensations may result from division or accidental ligature of the last dorsal nerve during the operation.

Lastly, nephropexy has a certain, though small, mortality. I hold, however, no brief against the operation, which, indeed, is at present our surest method of relief in injurious renal mobility; but I recall its drawbacks, in order to emphasise the desirability of giving the slighter degrees of injurious renal mobility the benefit of a belt before subjecting them to operative interference.