tone, not having been subjected to the long continued exhaustion which follows the unimpeded action of the reflex power playing through the pneumogastric nerves. Moreover, the system generally does not suffer to the same extent, and, consequently, recovery is much more rapid and satisfactory.

When disease in the chest arises from some abnormal action going on in the encephalon, the blisters remove the chest-disease, and we are at liberty to direct our efforts to the cerebral disturbance, thus limiting our remedies to a smaller morbid locality; and, the body submitting to only one focus of injury, the disease in the chest, being removed, ceases to act as a stimulus to that of the encephalon.

Some objections may be raised to this explanation, as involving a new theory as to the action of blisters, as well as the new theory mentioned previously, in reference to the pathological action of the nervous system in diseases of the chest. I am one of those who believe that blisters act as stimulants, but not that their stimulating action does good only through the nervous system, and through that alone, as is believed by those who call themselves "Young Medicine." Dr. Anstie is, perhaps, the clearest exponent of their views; and in the *Practitioner* for March 1870, he says of blisters, that "they are the refuge of the destitute." He will probably object to the explanation given; but even he, in his anxiety to confound those who differ from him, and to establish his own views, contradicts himself in the seven propositions which he gives in explaining the action of counterirritants. In some of his views I am at one with him; but, in others, he is as unsatisfactory as he accuses his opponents of being. It seems to me that blisters act in different ways under different conditions. They act by diverting nervous force; they act by exhausting tissue-contractility; they act by the stimulation of glands and tissues; and they act by stimulating reflex action; but that blisters are only "the refuge of the destitute" I deny. Guided by observation and experience, they may become handmaids to the wise, and afford a harbour of safety for the destitute in health.

THE CAUSES AND PATHOLOGY OF THE VARIOUS ACQUIRED MALPOSITIONS OF THE UTERUS.

By T. D. GRIFFITHS, M.D.Lond., Swansea.

THE term *malposition* is taken, in the present instance, to include prolapsus, and the various acquired versions and flexions of the uterus. It is chosen in preference to *displacement*, as the uterus is one of the most movable organs in the body, and possesses a considerable latitude for variation in its position, which should be considered as normal.

In order to elucidate the proximate and most obvious causes which tend to produce uterine malposition, and which are practically of the greatest interest, it is necessary to notice briefly the general anatomy of the female pelvis; the mobility, flexibility, and variability in the size of the uterus; certain pathological conditions of the uterine appendages, their neighbouring organs and tissues, general malnutrition, and certain muscular efforts.

General Anatomy of the Female Pelvis.—The uterus is retained in its natural position, between the bladder and rectum, by the broad ligament on each side; the fundus, scarcely reaching the brim of the pelvis, is directed upwards and forwards; the posterior surface, which is more convex than the anterior, is free, and covered by the peritoneum, which is reflected from the cervix uteri to the posterior wall of the pelvic cavity in front of the rectum, and in this situation, where it forms the recto-uterine pouch, it dips below the level of the cervix. Here the partition between the peritoneal cavity above and the vagina below consists of serous and mucous membranes, with some intervening muscular fibres and loose areolar tissue; this structure (recto-uterine ligament*) forms a portion of the wall of the peritoneal cavity. The anterior surface of the uterus is also free except at the lower fourth, where it rests, as it were, on a cushion, and is firmly attached to the bladder, and supported *in situ* by the recto-vesical fascia.

The peritoneal cavity is limited in the pelvis by a somewhat horizontal diaphragm (pelvic diaphragm) consisting of the bladder, uterus, and its ligaments. The outlet of the pelvis is closed by powerful muscles and fasciæ, which are supplementary in their function to the pelvic diaphragm.

The Mobility and Flexibility of the Uterus.—Although the uterus is a highly movable organ, it is not equally so in all directions, and this

is an important point to be remembered. The upper and heavier portion is freely movable in the antero-posterior direction, but greatly limited in its movement laterally by the broad ligaments. The organ as a whole is capable of a considerable movement in the vertical direction, which forms an arc of a circle in the pelvic cavity, having its centre in front of the pubes. This curved direction is determined by the greater fixity of the anterior attachment of the cervix.

The uterus, more especially in the virgin state, is capable of resisting flexion to a considerable extent in virtue of the thickness of its wall, but the organ is not equally rigid in its whole length, it is more easily bent at that part which corresponds to the inner os, or thereabouts, and it is here (in a line between the upper part of the vesico-uterine attachment, and the point at which the peritoneum leaves the posterior part of the cervix) that flexion takes place.

Variableness in the Size of the Uterus.—Increase in the size of the uterus plays an important part in the causation of uterine malposition, which will be more particularly considered under the head of pathology. Suffice it now to notice only a classification of its various enlargements.

LARGE UTERUS.

(1) Physiological enlargement.

- (a) Very slightly during the access of menstrual periods.
- (b) During pregnancy and period of involution.
- (c) After involution or postpuerperal, one-fourth to one-third larger after than before parturition.

(2) Pathological enlargement.

- (a) from congestion.
- (b) " inflammation.
- (c) " hæmorrhage (peri- and intra-uterine).
- (d) " hypertrophy (hyperplasia).
- (e) " imperfect involution.
- (f) " tumours (heteroplasia).

Certain Pathological Conditions of the Uterine Appendages, their neighbouring organs and tissues, should occupy a place in the etiology of uterine malposition. It is evident that imperfect involution of the broad ligaments after parturition, inflammation of the ovary, ovarian tumours, etc., are capable of influencing the position of the uterus. Again, tumours, or over distension of the bladder, may displace the uterus backwards; fecal accumulations in, or tumours of the rectum, may attain to such a size as to push it forwards, upwards, or both; abdominal tumour, or fluid in the peritoneal cavity may, under certain circumstances, bring about flexion, version, or prolapsus, but in these cases the malposition of the uterus is of secondary importance. Finally, the soft structures guarding the outlet of the pelvis are not unfrequently damaged in parturition, so as to allow the uterus to descend below its natural limits.

A state of malnutrition of the system generally, and of the uterus and its appendages in particular, is perhaps one of the most frequent disturbing influences which affect the position of the uterus. This pathological condition may be brought about in one of three ways; namely, by defect of nutritive material in quantity and quality; by retardation and perversion of the nutritive process caused by some local disease, or diathetic condition of the system; or by some anti-hygienic surroundings, or enervating habits in which the patient has been indulging. A state of defective nutrition, in whatever way induced, is attended with a loss of elasticity and resisting power, conditions extremely favourable to uterine malposition.

Muscular efforts, more especially of the abdominal wall and thoracic diaphragm, should only be mentioned in this place to complete the list of important elements in the production of uterine malposition, as it will be more particularly considered under the following head.

Pathology.—In the normal state there exists an equilibrium between the weight of the uterus, and the resistance offered by the surrounding structures, by means of which the organ is supported in its natural position. It is our province now to consider the mode in which this equilibrium may be disturbed so as to result in malposition. It is very evident that an increase in the weight of the uterus without, and *à fortiori* with, a decrease of the resisting power of its ligaments, may suffice to affect its position. Again, the same result may be produced by an increase of pressure brought to bear upon the uterus and its attachments by a forcible action of the thoracic diaphragm, and abdominal wall, or by an increase in the superincumbent weight due to various diseased conditions of the abdominal organs. Although these propositions constitute the actual and ultimate explanation of uterine malposition, a more detailed account is necessary to explain its production, and the conditions which determine its varieties. It is observed that the abdominal wall, pelvic diaphragm, and soft structures closing the outlet of the pelvis, move synchronously with the respiratory movements of the chest.

* Recto-uterine ligament is taken here to include (for the sake of brevity in description) the whole of the soft structure, limited on each side by the broad ligament, which attaches the uterus to the posterior wall of the pelvic cavity.

It is also observed that, during moments of powerful muscular effort, when the chest-wall is fixed, the thoracic diaphragm, abdominal wall, and muscles guarding the outlet of the pelvis, contract powerfully to steady the trunk. Under these circumstances, the abdominal organs are subjected to equal pressure in all directions; but, under precisely similar circumstances, with the exception of relaxation (or a passive state) in lieu of powerful contraction of the muscles at the pelvic outlet, the abdominal organs are pressed in the direction of the pelvis, and therefore force downwards the pelvic diaphragm towards the perineum. This is what actually takes place during the act of defecation, especially when much effort is used. Under the latter circumstances, it happens not unfrequently that the pelvic diaphragm gives way partially at the recto-uterine ligament, very much in the same way as the abdominal wall in cases of hernia. The peritoneum is forced downwards between the rectum and vagina; and, as it descends, it drags upon the posterior surface of the uterus, and causes it to fall backwards into the recto-uterine pouch, and bend at its most flexible part the junction of the body and cervix. Again, when the uterus as a whole is slightly lowered in the pelvic cavity, which is generally the first step in the process of posterior malposition, the fundus is directed upwards towards the promontory; and, when this position is obtained, the body of the uterus is forced backwards in front of the intestines at each succeeding muscular effort. The degree of flexion, which varies considerably in different cases, depends upon the amount of muscular effort, flexibility of the uterus, fixity of the anterior attachment of the cervix, capacity of the pelvis, state of nutrition of the soft parts, and integrity of the structures at the outlet of the pelvis; *e.g.*, pure retroversion—that is, without any flexion—would be obtained in a capacious pelvis, with a relaxed condition of tissues and a somewhat swollen rigid uterus.

Posterior displacements are not unfrequently brought about quickly by violent straining at stool, or by any sudden and instinctive muscular effort made to save oneself from falling, when the body is unexpectedly overbalanced by a slip of the foot or otherwise. It appears that, under the latter circumstance, the muscles at the outlet of the pelvis are liable to be taken by surprise, not being so readily acted upon by a reflex stimulus as those more immediately concerned in keeping the body in the erect position: hence the sudden displacement downwards of the pelvic diaphragm, and malposition of the uterus. These are the most usual circumstances in which posterior displacements are produced in young and healthy females; but more frequently they are the work of weeks or months, and are the result of a combination of causes—namely, a loss of elasticity and resisting power of the soft tissues, increased weight of the uterus, together with muscular effort, etc.

Although the normal position of the uterus is apparently more favourable to anteversion and flexion than any other displacement, yet, as a matter of fact, it is found that anterior displacements which are productive of any discomfort to the patient are extremely rare in comparison to the other varieties. The explanation of this is to be discovered in the anatomical connexion of the uterus and the inferior resisting power of the pelvic diaphragm at the recto-uterine pouch.

The positive conditions which most frequently determine anterior displacement are, the virgin state of the uterus and its attachments, a slight increase in the weight of its body and fundus.

With regard to lateral varieties of uterine malposition, it may be stated, in the first place, that even the posture of a patient may suffice to determine this to a slight extent temporarily. The fundus of a heavy uterus is found on examination to incline to the side on which the patient lies—that is, when the pelvis is capacious, and the soft tissues are relaxed and flabby. But a more permanent lateral displacement may be produced by a tumour situated a little to one side of the median line in the body of the uterus; by acute or chronic disease of either of the broad ligaments; by a diseased condition, attended by increased weight of one of the ovaries; or by tumours, etc., in the neighbourhood of the uterus and its appendages.

Prolapsus Uteri.—It has been already shown that the uterus is freely movable in the vertical direction, the line of movement forming an arc of a circle which is more or less parallel with the axis of the pelvic cavity. And it is found, on examination, that the relative position of the uterus in this pelvic arc varies in different individuals, and also in the same individual, within a certain latitude, under varying circumstances. When the cervix descends below its normal limits (which may be stated approximately to be at about an inch and three-quarters above the fourchette), the case is said to be one of prolapsus. When this occurs, the pelvic diaphragm is forced downwards in an infundibular manner. The suspensory ligaments of the uterus, as well as the supports at the pelvic outlet, give way, allowing the organ to descend, and, in extreme cases, to invert the vagina and protrude through the vulva. The main conditions which determine this variety of mal-

position are, loss of elasticity and resisting power of *all the surrounding* attachments of the uterus; increased weight of the organ itself, and the parts pressing upon the pelvic diaphragm; and impaired support of the soft structures around the vagina and at the pelvic outlet.

THE ORIGIN OF MIASMATIC DISEASE.*

By JOHN M. BRYAN, M.D., President of the South Midland Branch, Northampton.

IT has not been usual, I believe, that your President should deliver an address at this our autumnal meeting; but I think it is due to the Society, and to the position which he holds, that the business of the meeting should be opened by one, however short. I am pleased to meet all present, however few the number; and I regret that the distance at which many members reside, and the difficulty to leave professional duties, prevent more from being present.

This year will long be remembered in our annals for the greatest gathering of medical men ever brought together in London, or, perhaps, any other place. There were three thousand present at our annual general meeting in August, besides four hundred ladies at the Mansion House, and that number at two of the evening *soirées* or presentations at which I was, *viz.*, at the Mansion House, given by the Lord Mayor, and at the College of Surgeons; one other also was given by the University College, at which ladies were present. I was pleased to see our Branch fairly represented, as I believe I counted about twelve of our Associates at King's College. But surely more ought to have been there; and absent gentlemen can hardly realise the vast hospitality and pleasure derived, and knowledge gained at the annual general meetings. I can speak well for myself, having attended the three last, *viz.*, Plymouth, Birmingham, and London, as well as Leamington, Oxford, and others.

As this locality has recently been visited by typhoid fever, and was so, likewise to my knowledge, some few years since, I thought it might be interesting, and lead to some discussion and good results, if I made a few remarks on that disease, and the origin of miasmatic diseases generally. I may premise that infection is the power possessed by the breath, perspiration, excrementary discharges, and cutaneous waste of persons in certain morbid conditions, to propagate "catching" diseases. And it might be well to consider what are true reliable disinfectants, in contradistinction to deodorisers, as there is much difference of opinion on the same. I am disposed to think that the only true disinfectants are those which produce an atmosphere or vapour in which neither we nor any life can be sustained, such as heat, chlorine, and sulphur vapour principally.

The belief in the spontaneous origin of the specific miasmatic diseases rests on negative evidence, *viz.*, the fact that cases do spring up, in which it is impossible to trace the disease back to a personal source of specific propagation and dissemination—an event which is inherent in the very nature of these diseases. There seems no doubt that typhoid fever is the result of the inhalation of miasm of decomposing animal matter, either in the form of aerial emanations, such as sewer-gas, or of local pollution of the drinking water, by infiltration of such matters; and, whenever we meet with a case of enteric fever, we always look to the local circumstances under which the patient was placed, at a date corresponding to that of the ordinary commencement of the period of incubation, which period, according to Sir W. Gull, may be from twelve to fourteen days.

Endemic influences result from conditions or agencies peculiar to a locality which favour the development of various miasmatic diseases, and may thus account for their sudden origin; they are traceable to the constitution and state of the soil, water, and air; to elevation above the level of the sea, vicinity of sea-rivers, or stagnant water; woods or vegetation, variations of temperature; prevalent winds; in connection with avocations, modes of life, quality and quantity of food, as modified by moral agencies, such as indolence and activity, privation and comforts, filth or cleanliness of people, together with their habits of life and employment. Endemic influences become mainly active through the following conditions, *viz.*:—1st, that the specific poisons by which the communicable diseases, such as small-pox or typhoid fever, propagate their kind, are never totally in abeyance; 2ndly, the specific communicable diseases are constantly somewhere, and only under conditions favourable to their dissemination do they spread or become epidemic; and, although their germs or gases, or active principles or media of propagation and development, may lie dormant or latent for a time, it is not to be inferred that they have ceased to exist. There are the same

* Read before the South Midland Branch.