dentally, it may be mentioned that a similar enlargement of the gland occurs early in pregnancy, when the menstruation is suppressed, and before the fetus can utilize the amount of calcium at its disposal in the blood. We have also observed this thyroid enlargement in artificial menopause.

The function of the thyroid secretion in this respect is to stimulate calcium excretion, which may take place from the uterus, or, failing that, from the kidneys or by the bowel. In this way thyroid may be a valuable drug—indeed, it has often been so used—in amenorrhoea.

In the same way, we believe that the internal secretion of the ovary has the property of depleting the blood and tissues of calcium salts, and possibly a special action in stimulating excretion by way of the uterus.

We have in opposition to these the secretion of the adrenals, and probably that also of the pituitary gland. Both, as will be shown in a subsequent paper, act in a similar manner upon the uterus, especially when in the pregnant state. But, as regards their influence upon menstruation, the extract of these glands assists in the production of uterine contractions which are marked at that time, and also in other more obscure ways from their relationship to calcium metabolism in general, and in particular that of menstruation.

Fig. 17.—Vascularity and diapedesis in calcium chamber of laying hen.

Further, with regard to the secretion of the pituitary body—for we have at present little direct clinical evidence as to the adrenals—it has been shown that tumours of, and in the neighbourhood of, the pituitary gland cause amenorrhoea, and that cessation of the menses is one of the earliest symptoms of acromegaly.⁹ It has also been shown that sexual infantilism with an absence of menstruation is a general complication in early disease of the pituitary gland.¹⁰ An analysis of about 150 cases of acromegaly recently made confirmed the above statement regarding amenorrhoea, and also that lactation hastens the progress of the disease.¹¹

CONCLUSIONS.

1. That menstruation is a periodic function only in so far as the calcium metabolism is in harmony with this periodicity, and that the function is dependent upon the calcium metabolism in all its ramifications.

2. That the haemorrhage into the Graafian follicle may be coincidental, and is probably the result of the lowered coagulability of the blood or vasomotor changes; but that rupture of the follicle is in no way responsible for menstruation.

3. That the bleeding from the uterus, while due to the lowered coagulability of the blood in part, is also dependent on the local changes in the capillaries from which the diapedesis of leucocytes and corpuscles occurs; and, further, that these leucocytes are an active factor in the conveyance of calcium salts from the glands to the exterior.

4. That the uterine glands excrete calcium and mucin, and that therefore the uterus is a "menstrual organ."¹²

5. That there is a correlation between the ovaries and uterus in reference to menstruation, but that the ovary is probably no more predominant than other ductless glands in this respect.

6. That menstruation *per se* is not a necessary adjunct nor concomitant to fertility and reproduction.

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OBSERVATIONS ON PLEURAL PAINS AND ADHESIONS.

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EVERY physician is called sooner or later to treat cases of phthisis pulmonalis, which, notwithstanding all the methods of treatment introduced since Koch announced his brilliant discovery of the tubercle bacillus in 1882, still remains one of the most deadly diseases known. The disease is undoubtedly curable in its early stage; but that stage is only too frequently allowed to slip past, ere the patient, his friends, and perhaps his medical adviser, realize the exact position of affairs.

Clinical observation warrants, I think, the conclusion that phthisis pulmonalis may begin in one of three ways: Firstly, as pleurisy; secondly, as bronchitis; and, thirdly, as a caseating pneumonia, or the deposition of tubercle in the substance of the lung with bronchopneumonia. The second and third modes of origin are well recognized, but the first is not sufficiently appreciated.

Patients often complain of shooting or darting pains in the chest long before tubular breathing or expectoration reveals the presence of serious mischief in the lungs. These darting pains are too often ascribed to what has been called pleurodynia or intercostal neuralgia, because no physical signs have been discovered to denote the presence of pleurisy. I assert, after four years' careful observation, that the so-called pleurodynias are in reality localized patches of pleurisy, and I infer that they are mostly, if not always, of tuberculous origin. These sharp pains in the chest come on suddenly, without reference to wind or weather. I do not wish to deny that rheumatism may attack the pectoralis major or the latissimus dorsi; but the pains I refer to are not, in my opinion, of a rheumatic nature.

Of 300 patients who came to the dispensary for advice, 50 complained of sharp pains in the chest. Their ages ranged chiefly from 20 to 40 years; although younger people and older people were not exempt. The pains were referred to certain well-defined regions, namely, where the lungs divide into their lobes, or the free margins of the lungs. Thus, the pains were often referred to the right nipple, either a little above it or below it; to the left border of the heart; frequently to the lower left axillary region, corresponding to the division between the upper and lower lobes of the left lung; and to points a little below the apex of each scapula.

The involved areas may be diagnosed by very delicate percussion, which may be called tactile percussion, as the sense of resistance is strongly appealed to. The ordinary stroke in percussion strikes through those areas of pleurisy patches and brings out lung resonance. The fingers of the left hand are placed flat on the chest. The tip of the middle finger of the right hand is the plessor, and it should not be raised above 1 or 2 in., and then brought down on the surface of the middle finger of the left hand. The percussing finger should be kept at an easy angle, and should move from the knuckle-joint, the wrist being kept steady. If this method of percussion be practised for several weeks or a few months, it will be

possible when percussing a patient's chest to detect or at least suspect areas of superficial dullness where there have been localized pleurisies which have left adhesions as a permanent memorial.

Sometimes patients can corroborate the diagnosis by remembering the sharp pains they felt at the involved sites, and sometimes they do not recollect having any suffering. From this, and for other reasons, I conclude that children often have attacks of pleurisy which are overlooked. Such vestiges of a bygone pleurisy seem to me to occur most frequently low down on the left side, over the axillary portion of the lower lobe of the left lung.

Auscultation is not nearly so valuable as percussion in diagnosing such superficial areas of dullness on the surface of the lung. Occasionally the affected area may not be much larger than a square inch, as I have once verified *post mortem* in a case in which the adhesion was in the vicinity of the right nipple. If the fibrinous exudation is recent, rubbing, grating, squeaking, or creaking sounds may be heard. If the dullness is considerable, the inspiratory murmur may be fairly distinct; and the expiratory murmur faint, and preternaturally short, as compared with that over sound pleura and lung. Probably this indefiniteness of the respiratory murmur may be due to the lung being adherent to the chest wall, and its natural recoil interfered with by the adhesions.

Inspection in well-marked cases of pleural adhesions may show deficient expansion and contraction. It is not practicable to diagnose adhesions in the scapular regions, or even in very obese subjects, except by inference.

The diagnosis of pleural adhesions should be regarded as a danger signal to warn the patient to take all precautions in his mode of life, diet, etc., to ward off the graver manifestations of tubercle in the lung.

The immediate treatment of fibrinous pleurisy consists in the internal administration of sedatives, such as opium, and the use of counter-irritants. These measures will not banish old adhesions, but they relieve recent attacks of pleurisy.

It does not follow because a patient has had an attack of pleurisy that he will fall a victim to phthisis pulmonalis. Indeed, were such the case, every fourth, or at least every sixth, patient would develop the disease. It is the exception rather than the rule. But the two conditions are so frequently found together that they appear to me to have a common origin; and phthisis pulmonalis develops after a history of localized pleurisy so frequently that the latter rises into great significance.

When a patient comes to the dispensary complaining of his chest, I always put the three following questions, and subsequently other questions that arise out of the answers given.

Have you a cough?

Have you any spit or expectoration?

Do you suffer from any sharp pain in the chest, referring particularly to the common sites indicated above?

It is necessary to be wary in inquiring about a cough, as consumptive patients are very shy of admitting a cough, while emphysematous patients are often silent about their morning cough, although desirous of being relieved of their shortness of breath. If a patient complains of having had for a considerable period a cough and spit, without ever having had any sharp stitches about the chest, he is probably suffering from bronchitis. If he complains of cough, spit, and sharp pains in the chest (not the pain at the pit of the stomach due to hard coughing), he has, almost to a certainty, got phthisis pulmonalis. Cancer of the lung, however, is one exception. The cough indicates the presence of a foreign element in the respiratory tract; the sputum, if it be purulent or muco-purulent, points to bronchitis or bronchopneumonia being present; and if the sputum contains little cheesy-looking particles, these will denote that caseation is going on in the lung or lungs; the sharp pains will point to pleurisy, so that the three cardinal signs or symptoms—cough, pain, and expectoration—will in all probability correspond to bronchitis, pleurisy, and tuberculous pneumonia, and, in a word, phthisis pulmonalis.

I have pleasure in stating that Mr. E. Wardman Wilbourne, medical student, who has been working with me at the dispensary, has frequently verified the above observations, and agrees with the conclusions drawn.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

AVULSION OF A FINGER.

THE following accident appears to me to be sufficiently remarkable, both in the manner of its production and its effects, to be worth recording. The patient, a young man, was indulging in a form of amusement euphoniouly entitled by the proprietor "swooping the swoop," a looped metal contrivance running by means of a wheel along an inclined cable. The amusement consists in grasping the horizontal bar of this loop and while thus suspended having an aerial journey along the cable. On reaching the lower end one lets go and drops two or three feet to the ground. The patient had a ring on the little finger of the right hand. On attempting to let go, the stone in the ring, which had slipped round to the palmar aspect of the finger, caught in the junction between the horizontal and vertical portion of the loop, with the result that he was momentarily suspended by the little finger, and the finger was avulsed in the following manner: The bone gave way at the joint between the second and third phalanges; the skin opposite the lower end of the first phalanx and

The finger, with its tendon, shown against a cardboard background.

the whole length of the deep flexor tendon, maintaining its attachment to the phalanx, was pulled completely out of the arm from its origin near the elbow, the finger being picked up off the ground with its accompanying tendon.

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ACUTE INVERSION OF THE UTERUS,

I READ with some interest Mr. Holthusen's contribution to the JOURNAL of January 23rd, as during the past few months two instances of a somewhat similar nature have come under my care, being the only cases of this description I ever met with, occurring, rather singularly, within five months of each other.

One, which occurred in July, 1908, was in a primipara aged 23. The first two stages of labour were normal, but upon its expulsion the placenta was found attached to an inverted uterus, though not technically adherent. It was speedily separated with little or no haemorrhage. There was great disturbance of respiration and circulation, cyanosis, etc., in fact the patient had the appearance of imminent dissolution. On returning the uterus, which was effected with little or no difficulty, the alarming symptoms gradually subsided. The patient, who was a very healthy young woman, made a splendid recovery.

The second case happened in December, 1908, in the second pregnancy of a woman, aged 30, with hip-joint disease and a weak heart. Labour was tedious and recourse was had to instrumental delivery. On some amount of haemorrhage taking place, it was found that the vagina was occupied by the uterus as well as the placenta. The latter was easily removed, but the return of the former to its natural position was an affair requiring the exercise of some care and manipulation. What immediate after-effects there were seemed more attributable to haemorrhage, than to disturbance of the parts. The patient lived six weeks, then died from cardiac debility, anasarca, etc.

Birstwith.

H. G. HAROLD CLARKSON.

TREATMENT OF OPHTHALMIA NEONATORUM.

A CHILD with ophthalmia neonatorum runs so many risks from the treatment it receives—at any rate when the treatment is not carried out by experienced hands—that I think the following remarks are in place:

As a rule the mother consigns her unfortunate offspring to the darkest corner of a dark and badly-ventilated room, and covers up its head with a cloth, which is soon contaminated by discharge. Blepharospasm confines the pus in the conjunctival sacs, and renders all manipulation not only difficult but dangerous. A strong solution of silver nitrate is swabbed on the everted lids, causing considerable pain, and perhaps injury to the cornea owing