

the intention of doing a hysterectomy. In 1842 Charles Clay had likewise made a similar mistake in diagnosis, but he abandoned the operation when he discovered the tumour was uterine.

The first deliberate hysteromyomectomy was that performed in June, 1846, by John Bellinger, of South Carolina, U.S.A. The patient, a coloured woman, died upon the fifth day from peritonitis. The first successful hysterectomy was performed by Walter Burnham, of Lowell, Massachusetts, on June 26th, 1853. This was not a deliberate operation, as Burnham considered the tumour to be ovarian. After the incision was made the patient vomited, forcing the uterus, the fibroid, and associated ovarian tumours out of the wound, and as Burnham was unable to replace the mass he did a supravaginal removal of the uterus, with ligation of the lateral arteries. A left ovarian tumour was removed and a right ovarian tumour also incised. The ligation of the ovarian and uterine arteries in the broad ligaments is similar to that of the modern operation. Burnham continued to do the operation from time to time, performing altogether 15 operations, but only three of his patients recovered.

The first deliberate and successful hysterectomy for fibroid tumour was performed by G. Kimball, of Lowell, Massachusetts, on Sept. 1st, 1853. Kimball had a clear concept of the diagnosis, and in his writings advocated the operation. Previous to 1856 Kimball operated four times for fibroid tumours of the uterus, with but one recovery. The successful operation of E. Koeberlé was not performed until April 20th, 1863. The first successful abdominal myomectomy is apparently that of W. L. Atlee, of Pennsylvania, performed on August 28th, 1844. This was not a deliberate myomectomy as the tumour was supposed to be ovarian, but the ovaries were found to be normal at the necropsy three years later.

The honour of having performed the first deliberate hysterectomies for fibroid tumour seems to belong to the following surgeons in the order named:—Bellinger, Kimball, Burnham, Clay, and Koeberlé. For a fuller discussion of the subject and a careful tabulated bibliography of the early operations for fibroid tumours, reference may be made to the article by Noble in the *American Journal of Obstetrics*, Vol. XL., No. 2, 1899.—I am, Sir, yours faithfully,

Philadelphia, U.S.A., Dec. 18th, 1911. W. WAYNE BABCOCK.

THE PRESCRIPTION OF TUBERCULIN.

To the Editor of THE LANCET.

SIR,—I can see nothing in Mr. Gamble's letter to modify my opinion. Whatever terms are used, and however explicit the physician may be to indicate his intentions, one comes back to the fact that he is ordering a specific fluid, and the dilution of that fluid must be calculated in measures. In my last communication I referred to Koch's bacillary emulsion, because at the time I was making dilutions of that fluid, but it applies with even greater force to Koch's new tuberculin T.R. 1 c.c. of this fluid contains the active bacterial matter of 10 milligrammes of tubercle bacilli, which represents 2 milligrammes of solid substance. I have seen the dose of T.R. indicated in decimals or fractions of a c.c. of that fluid, in fractions of a milligramme of tubercle bacilli, and in fractions of a milligramme of solid substance. Therefore it would be far better, and would avoid any possibility of confusion if it were always ordered in decimals or fractions of a c.c. of the original fluid. Personally, I prefer to work in decimals.

I am, Sir, yours faithfully,

London, Dec. 19th, 1911.

P. W. SQUIRE.

"GREEN" TEA.

To the Editor of THE LANCET.

SIR,—I have had a good deal to do with China tea, and therefore I am much interested in your annotation on p. 1786 of THE LANCET of Dec. 23rd. Your correspondent says that formerly Prussian blue was used for colouring the leaf in "green" tea. I should be very much obliged if you would ask him to supplement his interesting letter by stating what evidence there is of the former use of this pigment. The statement was freely made in this country some 35 or more years ago, and to it was largely due the disuse of green tea and the ruin of the trade in green tea in this country; but I do not think it was made on any sure basis of fact. For all

that it may have been true, and I should be glad to know if your correspondent has any evidence to offer.

I am, Sir, yours faithfully,

Duchess-street, W., Dec. 29th, 1911. E. MUIRHEAD LITTLE.

SPONGE EDUCATION.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 11th, p. 1348, you have an annotation on "Sponge Education." This I read with much interest, but would point out that this is by no means a new form of treatment, and I do not think it had its origin in America, as you suggest. In 1889 Mr. A. G. Miller, surgeon to the Royal Infirmary, Edinburgh, regularly taught his students the advantages of applying prepared sponge for encouraging the growth of granulations. He termed his system "sponge grafting." His then house surgeon, Mr. Alexander Miles (now surgeon to the Royal Infirmary, Edinburgh), will doubtless recollect these successful experiments. In 1892 I was consulted by a lady with a large callous ulcer on her leg. She informed me that this had been present for over ten years and had resisted all treatment. Following the method taught by Mr. Miller, I sponge-grafted the leg, and in four months the ulcer had disappeared, leaving a firm cicatrix. I met my patient in 1908, and she informed me that the leg was in excellent condition and had given no further trouble. In numerous cases I have tried Mr. Miller's so-called "sponge grafting" to encourage growth of granulation tissue and invariably with good results.—I am, Sir, yours faithfully,

DAVID DONALD, M.D. Durh.,

L.R.C.P. & S. Edin., L.F.P.S. Glasg.

Victoria, British Columbia, Dec. 4th, 1911.

* * In this regard we may mention a letter in THE LANCET of Nov. 25th, 1911 (p. 1516), where the work of Professor D. J. Hamilton is quoted:—ED. L.

THE ACTION OF RADIUM ON MALIGNANT GROWTHS.

To the Editor of THE LANCET.

SIR,—Many explanations have been advanced as to how radium acts in cases of malignant growths. Some authorities, such as Wickham (Paris) and Finzi (London), maintain—and, I think, with good cause—that radium exercises a selective or specific action on cancer cells, while others, among whom may be mentioned Bashford (director of the Imperial Cancer Research) and Mansell Moullin, refuse to see any such selective action, and state the action of radium is merely that of a powerful caustic. Its action in such a case might be comparable to that of arsenic paste, zinc chloride, potassium bichromate, and other chemical caustics the application of which has occasionally given good results in cancerous growth.

A third theory, propounded by Deane Butcher, is that radium possibly acts as a vaccine, its rays exciting the leucocytes to the production of antibodies. In support of this it might be stated that the opsonic index has been found raised after applications both of X rays and radium.

Dominici,¹ in an interesting article, shows by means of microscopic sections the gradual retrogression of a case of sarcoma under the influence of radium. Briefly, the sarcoma is converted into a fibroma, which is eventually changed into scar tissue. The changes described are apparently of the same nature as those occurring in the "spontaneous or natural cure of cancer."²

Dominici, moreover, demonstrates that this fibroma is not made up of the vascular connective tissue which exists between the sarcomatous cells, but is a result of the transformation of the sarcomatous element itself. Briefly, this change, he says, is brought about in the following manner. 1. A metamorphosis of some of the protoplasm of the plasmodial elements as well as the sarcomatous cells into connective tissue fibres. 2. A transformation of the remainder of the protoplasm and of the nuclei of the sarcomatous elements into permanent fibrous tissue cells. 3. *The obliteration of the blood-vessels.* I have purposely

¹ Archives Générales de Médecine, Radium Number, July, 1909.

² Handley: Brit. Med. Jour., March 6th, 1909.

placed the last heading in italics, because here seems to me to be a possible explanation of the action of radium on new growths.

I have been using radium in my practice during the last two years, and the chief thing that has struck me about it is its wonderful influence on blood-vessels and lymphatics. The remarkable power that radium has in arresting hæmorrhage was referred to by several speakers at the last annual meeting of the British Medical Association. It may, in fact, be stated that its chief utility in therapeutics is its power of obliterating blood-vessels or spaces, as witness the way in which it removes various forms of nævi and angiomas. Now it seems to me that this action of radium on vascular tissues will equally explain to a large extent its beneficial influence in new growths. The obliteration of the blood channels which ramify in and supply the growth would in great measure tend to cut off its source of nutriment, which must eventually result in the death and disappearance of the growth.

I have been tempted to write the above not as anything new, the action of radium on blood-vessels being well known, but because as regards new growths this special property of radium seems either to be forgotten or kept well in the background.—I am, Sir, yours faithfully,

FERNAND L. DE VERTEUIL, M.D. Edin., M.R.C.S. Eng.,
L.R.C.P. Lond., Surgeon R.N. (ret.).

Vancouver, British Columbia, Dec. 17th, 1911.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

The Advantage of Aluminium in the Construction of Pumps and Radiators.

AN unfortunate accident which took place recently through a low night temperature impels me to give this personal reminiscence, though it reflects in an adverse way on my care in automobile matters; still, my experience may be of service to others. My car is housed in an unheated shed, and to obviate the trouble of emptying and refilling the water-tank I have always added some 20 per cent. to 25 per cent. of glycerine—that is, 60 to 70 oz. of glycerine in each gallon of water used. When a recent seasonable temperature set in, I had only a winchester of glycerine in the house. This worked out at 36 oz. to the gallon, which I thought enough for one night's safety. That night the thermometer fell to 17° F., and, on inspecting the car on the following day, the pump was found to be frozen. With great care and gradual warm fomentations a thaw was effected, but a crack resulted in the water-pump casing. As chance had it, the casing was of aluminium instead of the more usual gun-metal. In this instance the lighter and softer substance proved an advantage. Without removing the pump the crack was thoroughly stopped by gently tapping with the end of a small hammer along the fissure. I think this shows the advantage of aluminium for radiators and pumps, for if a split occurs the careful use of a hammer will effect a cure. The moral, of course, is that when adding glycerine 70 oz. should be used for each gallon of water.

The Danger of a Flooding Carburetter.

I recently heard of a friend's car—it was an old 6 h.p. Wolseley—which, after a strenuous life of some eight years, finished its career by catching fire near Ladywell Bridge. An inquest revealed that as a result of wear, brought about by constant jarring, the needle-spindle of the carburetter just above the cone had worn, resulting in the formation of a slight exostosis or shoulder. This occasionally fouled and prevented the valve closing. The carburetter then flooded, the overflow pipe thus exuding petrol, and the mixture becoming too rich. In the case under consideration the exhaust pipe had become red hot and set fire to the escaping petrol. A little emery paper and elbow-grease on the carburetter valve-stem would have prevented this sad end of a noisy but capable and hard-working little runabout.

A Useful Petrol Filter.

Messrs. Brown Brothers, Limited, have placed on the market a filter which certainly separates every particle of foreign matter and water from the petrol. The petrol enters through a pipe from the upper part of the filter, and the pipe

projects low down into the body of the filter. If there is any water or grit, this sinks to the bottom, whereas the petrol itself, being lighter, is forced up through a conical-shaped gauze strainer to the outlet, and thus to the carburetter. Beneath the filter a cock is fitted for draining off the impurities. Probably the commonest cause nowadays of a roadside stop is a choked jet, so this little accessory is worth considering by the owners of all cars on which a petrol-straining device is not fitted.

Regarding the Use of the Brakes.

When recently chatting with a repairer he was somewhat sarcastic regarding the lack of sympathy which many of his doctor clients had for the braking mechanism of their cars. The side brakes should be the chief ones to employ, as they do not cause any strain on the transmission. The trouble with most modern cars is that the side-brake lever is usually outside the body on most of the torpedo variety, and therefore rather difficult to reach, especially when the hood is up, thus fostering the bad habit of so many motorists, who chiefly depend upon their foot brake. The remedy would be for manufacturers to make the foot brake act on the wheels, and the hand one on the cardan shaft. This is done on one or two cars, and might be introduced with advantage on others. The engine itself is an excellent brake, and if the second, or on very steep hills the first, speed is slipped in, and the ignition turned off, most hills can be negotiated without using either brake. New shoes are, it is true, inexpensive. Still, they take a little time to fit, and by descending hills in this way the necessity for replacing these parts may be indefinitely postponed. Should the shoes wear, they can still be used if trued in the lathe and then covered with raybestos, which is composed of asbestos and brass wire and produces more friction than even metal to metal. It is supplied in varying thicknesses, so as to be adaptable to any worn drum or shoe. It should be fixed by countersunk rivets. It will also help to do away with the "chattering" that worn metal-to-metal brakes develop.

A Useful Step Mat.

At this season of the year all who desire to save the unpleasantness of having the interior of their car stained with muddy footmarks should fit some form of mat on the foot-board. Fibre mats when thus exposed to wet are apt to rot, and therefore the Duco Leather Step Mat is an improvement. This is made of leather, and is impervious to petrol and grease, and is durable. It is supplied either with or without a brass bound frame, and does not in any way detract from the appearance of the car—in fact, it rather adds to it—and ensures that the interior of the car will, in spite of the mud on the road and pavement, always look clean.

Regarding Monobloc, Twin, and Single Cylinders.

A good many readers have written regarding the advantage or the reverse of the monobloc over the twin and single cylinders. Like most things in this world, each type of casting has its advantages and disadvantages. I have chatted on this subject with motor manufacturers, engineers, and founders. The general opinion seems to be that for motors of low power, such as are usually used by medical men—that is, from 12 to 18 horse power—there is much to be said in favour of the cylinders being cast *en bloc*. They permit of smaller engine length, are rigid, and though the cooling may not be as uniform, still it is enough for low powers, and the cost of construction and erection is less, and therefore the selling price is also lower. The cost for the pattern is a little more, but this is more than made up for by the reduced expense for machining. With the monobloc all four cylinders can be bored and the base planed and drilled at one operation. Of course, it means as a rule only three bearings for the crank, but the old adage, "One throw, one bearing," does not apply to low powered explosion engines, and as a matter of fact even two crank bearings have been found quite satisfactory. The only real disadvantage is that when they are dismantled for cleaning or repair, they are heavier to lift and more difficult to replace. Still, a pulley can generally be easily rigged up, and with a little care and a helper, the job can be done. On this point I speak from experience, as I have carried it out myself. A further objection is the expense of replacement, should one cylinder crack. Well, this may be dismissed, as if glycerine is added to the water in winter,