first case in this house, the date of invasion was on the same day as in house No. 1, viz., June 10th; it was in a child three years old. The case was attended with a bad form of sore throat, but recovered. Subsequently three more of the children, at the ages of 8 years, 2 years, and 11 months, died on the 8th and 9th July, from that serious diphtheritic complication and diffusive glandular engorgement which often sets in about the tenth day, and forms one of the most fatal sequelæ of the disease. This house was supplied daily with C.'s milk, which was consumed by the children, none of whom were known to have had communication with the milk-carrier.

House No. III.—Exactly on the same day, June 10th, a case was visited in a different part of the town. It was in B Square, an airy open space on a slope on the opposite side of the valley. It was in a good class dwelling house, inhabited by a married gentleman without family, but with one young female servant. In this young person, the rash appeared on the 9th of June; she was taken to her own home on the 10th, passed through a mild attack, and recovered. This house was supplied with C.'s milk, which was taken in at the door by the servant girl, who fell ill; she was the only inmate who consumed milk.

House No. IV.—A large, new, detached mansion in the same suburban square had milk delivered daily from C.'s dairy. The lady and her family of five children removed to a sea-side residence forty miles off, about the 20th of June. A few days thereafter, her eldest daughter, aged 17, commenced with scarlatina. At that watering village, at that time, or for some time before, no case of scarlatina had been known to exist. The young lady passed through the disease, which, within ten days, attacked another daughter, and subsequently others of the family. The young lady who first became affected was a great consumer of milk. She never saw, nor had any communication with, the milk-carrier, as the milk was invariably received at the threshold by one or other of the domestic female servants, who themselves escaped the disease.

House No. V.—On the morning of Saturday, June 22nd, I visited a house in the same square. The family consisted of father and mother and three young children, aged respectively 7, 5, and 2 years, as well as two young female servants. The milk was brought from C.'s dairy, and it was invariably taken at the back gate of the house by one or other of these servants. The eldest child had been indisposed the evening before, and restless all night, and on this morning the rash was out on the neck, chest, and throat, and it subsequently extended through its usual course. Isolation was maintained, and carbolic acid fumigation indefatigably pursued for two weeks (which process I advise as surpassing all other methods of disinfection in scarlatina), and the rest of the family and servants escaped. This child used milk regularly at her meals, and could not possibly have had any intercourse or even seen the person who brought the milk, being in bed or upstairs at the time of the milk-carrier's call at the house.

House No. VI.—At an inn in the centre of the town, quite in a different quarter from any of the preceding houses, I saw another case on Saturday, June 22nd. It was a young person aged 18, the niece of the landlady, whom I found covered entirely, even to the feet, with the scarlatinous rash; and it was stated that it was seen on the chest and face on the preceding morning, so that it was probably the second day of the disease. It passed through the usual course. It is proper to note that this young person occasionally took the daily supply of milk from the hands of the milk-carrier, and, moreover, that she was not in the regular habit of using milk, but that she drank a mugful on the evening of Wednesday, June 19th. This household was supplied from C.'s dairy. There were no children in the house, and the disease spread no further.

Thus ends the recital of the primary series of cases which were known to me to have followed the trail of the milk-carrier. It will be noted that all in this group of the six first infected were children or adolescent persons; and if I were to trace the progress of the milk-carrier from door to door, amongst the remainder of his customers (as I am bound to do in fairness to any antagonism to my hypothesis), I find, curiously, that in almost every case amongst the rest of the households so supplied, special circumstances afforded reasonable explanations why their inmates should have obtained immunity. Thus, *a b c* houses, with families of young children, soon after the 12th, when it became apparent that infection was conveyed from the milk-vendor's premises, ceased to take the milk. Again, the houses *d e f g* were tenanted by middle-aged and elderly persons without families or young people—a group, therefore, who were presumed not to be susceptible of the contagion. There was only one house, *h*, containing children, which continued the intercourse with the dairy to the end, that escaped the hurtful influence. Moreover, during these thirteen days, from the 10th to the 23rd, the interval during which these six cases occurred,

the disease was not prevailing yet amid the population generally; it was just being started on its epidemic career, which subsequently assumed an alarming and fatal progress, as the following returns will show.

The annual deaths in Penrith from all causes were, in the years 1866, 257 deaths; in 1867, 320; in 1868, 224; in 1869, 205. The great increase in 1867 was exclusively due to scarlatina in the last three quarters of the year, as is seen in the following table.

1867.	Deaths from Scarlatina.			Deaths from all causes.
	Under 12 yrs.	Above 12 yrs.	Total.	
January ...	0	—	—	First Quarter, none.
February ...	0	—	—	
March ...	0	—	—	
April	1	—	1	Second Quarter, 18
May	4	—	4	
June	13	—	13	
July	12	—	12	Third Quarter, 28
August ...	8	—	8	
September ...	8	—	8	
October ...	13	2	15	Fourth Quarter, 28
November ...	9	—	9	
December ...	3	1	4	
	71	3	74	320

The total of deaths from scarlatina in the year 1867 was 74. The mortality ceased with the last quarter of 1867, for I find no deaths from scarlatina proper in the first quarter of 1868.

It must be conceded, that these cases which I have related must have originated from some description of intercourse with the infected dairy. Was it by means of the milk-carriers? I hardly think so. These persons had not themselves the fever; they were not in attendance on the sick child; their presence at the entrance of the different houses was very transient; in most of the cases they were never near to or even saw those who fell ill. I believe, rather, that the milk itself was the medium of the hurtful virus. All the sick were proved to have drunk the milk. Consider how readily contamination of the milk might have happened. A person has nursed a child through scarlatina for three weeks; she milks the cows; she leans over the pail, into which, by the motion of her arms, the dust is shaken from her dress, or the miasm is absorbed by the thin stream of milk as it flows; and the vessels stand for a time in an apartment exposed to an infective atmosphere. This freshly drawn animal fluid imbibes effluvia with great readiness, and is in the highest degree susceptible of the least mustiness or putrescence. Meanwhile, molecular changes are going on, and such effluvia are retained with peculiar tenacity, from the property of milk throwing to the surface an impervious cream. If I am correct in my inference, the fact is an important one; and the evident value of its practical bearings has induced me to bring it before the notice of the profession.

OBSERVATIONS ON THE USE OF INTRAUTERINE INJECTIONS AND OF THE CURETTE.

By LOMBE ATTHILL, M.D.,

Fellow of the King and Queen's College of Physicians; Obstetric Physician to the Adelaide Hospital; Examiner in Midwifery, College of Physicians of Ireland.

IN the number of the BRITISH MEDICAL JOURNAL for the 5th November, there appear several extracts from the writings of Dr. T. G. Thomas of New York, on the subject of intrauterine injections. With his remarks on this particular subject I in the main concur. I disapprove of the injecting of any fluid into the cavity of the uterus, except in cases of *post partum* hæmorrhage occurring at the full period of utero-gestation, or at least not before the seventh month of pregnancy, and when, all the ordinary means of checking hæmorrhage having failed, the life of the patient is in the greatest jeopardy. In such cases, however, I have injected the liquor of the perchloride of iron, diluted with about two parts of water, with the most satisfactory results. Excepting such cases as these, Dr. Thomas's views are on this point almost identical with mine; but, further on, we meet with a paragraph to which I must take exception. Dr. Thomas there says: "I never use intrauterine injections even for the hæmorrhage of abortion. If we know anything about the pathology of uterine hæmorrhage, we know that it should be

stopped by the closure of the vessels from contraction of the tissue of the uterus itself. After delivery, we all recognise that the only proper thing to do is to empty out the clots and stimulate the uterus to contraction. Even after abortion, I look on the injection of styptics as a bad thing." In this sentence we have two entirely different forms of hæmorrhage spoken of, requiring as different modes of treatment; namely, hæmorrhage occurring after delivery at the full term of pregnancy, and that occurring after abortion; *i.e.*, before the termination of the fifth month. Now, with respect to the former, I agree with Dr. Thomas, that it "is the proper thing to stimulate the uterus to contract"; but though by many authors it is recognised as "the proper thing to empty out the clots" which form in the uterus, I much doubt if such a proceeding be always judicious. In many cases in which there is a tendency to *post partum* hæmorrhage, it is impossible to get the uterus to contract firmly; it contracts to a certain size, but any diminution beyond that point is but temporary, and it speedily relaxes again. Now, in such cases, the moment it relaxes hæmorrhage takes place into the uterus. If the uterus be not stimulated immediately to contract, coagula rapidly form round the mouths of the bleeding vessels. These coagula are Nature's plugs, formed by her to arrest for a short time the flow of blood, and give time for the tonic contraction of the uterus to occur. If we by our manipulation stimulate the uterus to contract, these coagula are thrown off, then the same process is repeated, and so the hæmorrhage may be kept up indefinitely; but if we remain content with the moderate contraction which Nature has established, retaining the hand on the fundus steadily to guard against undue relaxation, the coagula will, in the first instance, arrest the flow of blood, and then by their presence will stimulate the uterus to contract. That contraction, no doubt, expels them; but in all probability the contraction will now become permanent, and no further hæmorrhage will take place.

In such cases, if the treatment which I recommend, coupled with the judicious use of cold and the exhibition of ergot, fail to check the hæmorrhage, I have no hesitation in having recourse to the injection of the perchloride of iron; and in that other class—which, fortunately, is comparatively rare—in which the uterus becomes relaxed to such an extent that its very outline cannot be made out, I still more warmly advocate the use of the perchloride of iron, as being the only treatment which promises anything approaching to a certainty of success; but I am convinced that "the emptying out plan" is often most injurious.

Now, as to the hæmorrhage occurring *after* abortion, it very rarely is severe, unless a portion of the placenta be retained, and even then the amount lost is generally small; but, if it be necessary to check it entirely, that can be effected at once by the use of the plug. In these cases there is no risk of excessive intrauterine hæmorrhage, for the uterus can contain but a small quantity of blood, and will not relax to any extent.

But Dr. Thomas proceeds to relate a case of quite a different class, in which "a woman had been bleeding for three months after an abortion." "It seemed to me," he goes on to say, "that there must be something in the uterus to cause the flow, for otherwise, what is there in an abortion to keep up hæmorrhage for such a length of time in such a case? You may take it for granted that something has been left behind. The doctor in charge of the case consented to my dilating the cervix and introducing the curette. I took away a number of little bulbous bodies, remains of the placenta, those little granulations which bleed if you look at them, and pour out blood profusely if you touch them with a probe." This sentence is full of fallacies. I am far from admitting "that it may be taken for granted" that, because hæmorrhage persists for weeks after an abortion, therefore "something must have been left behind"; and to his query, "What else is there in an abortion to keep up hæmorrhage?" I reply, that frequently granular erosion of the cervix, or subinvolution of the uterus, is met with as a consequence of abortion, and that either, or possibly both conjointly, were present in the case which he relates, and were the cause of the long-continued hæmorrhage. I think Dr. Thomas proves this for me; for he goes on to say that he introduced a curette, having previously dilated the cervix uteri; but did he find, on doing so, a portion of placenta, or of the membranes, remaining? No such thing; but "he scraped off a number of little bulbous bodies, remains of the placenta, those little granulations which pour out blood when you touch them with a probe." Are we to understand from this that Dr. Thomas asserts that the placenta, which is a product of conception, and in no way forming a portion of the uterus, is capable of giving origin to "granulations"? Such a view of the pathology of uterine disease is altogether new, and will not, I fear, stand the test of scientific investigation. In my opinion, the case just related was an ordinary case of subinvolution of the uterus; that the so-called "granulations, the remains of the placenta," were but portions of the mucous membrane lining the cavity and cervix

uteri, thickened and hypertrophied; that, by scraping the unhealthy surface with the curette, he stimulated the entire organ; and that healthy interstitial absorption followed. If such a case had presented itself to me, I should adopt a practice which I have followed on several occasions with success, namely, to introduce up to the furthest point of the uterine cavity, by means of Simpson's "porte caustique," eight or ten grains of the solid nitrate of silver, which, dissolving, would blister the entire of the intrauterine mucous membrane. This treatment, if carried out with due caution, is perfectly safe. It causes some pain, seldom, however, severe, and sometimes a little hæmorrhage follows; but, if care be taken to keep the patient in bed for a few days, and nothing but mild unstimulating diet allowed, I believe it to be perfectly safe, and it is generally followed by a permanent cure. It is very analogous to that which Dr. Thomas mentions as having been recommended by Dr. Lente, but it is more certain than his method. As to the instrument called the "curette", I altogether condemn its use under any circumstance.

There is one other matter introduced by Dr. Thomas which is open to comment. He relates the particulars of a case which terminated fatally after the introduction into the uterus of three of Dr. Peaslee's dilators. These are steel instruments, and act mechanically, and of course rapidly, the very rapidity of their action being the point which Dr. Peaslee insists on as being satisfactory. This is the very principle to which I object. No matter how scientifically used, rapid dilatation of the cervix is not a safe proceeding, and there is always considerable risk of doing injury to the uterine tissues.

For my own part, I invariably adopt the plan which is, I believe, followed universally in the Dublin School of Obstetric Surgery, of dilating the cervix uteri with sea-tangle tents; they exert a slow and continuous pressure from within outwards, and their use has never, so far as I am aware, been followed by any injurious consequences. But even these I never think of using without confining the patient to bed. The American practice seems to be to dilate the cervix at the physician's residence; at least, Dr. Thomas's patient returned home after the operation, and the fatal effects which followed may possibly have been in no small degree attributable to want of due care in this particular.

THE VALUE OF THE LIQUOR OF THE PERNITRATE OF IRON, IN COMBINATION WITH CALUMBA, IN CASES OF CHRONIC MUCOUS DIARRHŒA.

By EDWARD J. COOKE, A.B., M.B.T.C.D.; Surgeon to the Workshop Dispensary and Cottage Hospital.

THE following facts may be interesting to some members of the profession, as affording evidence as to the use of the liquor ferri pernitratæ, in combination with calumba, in cases of chronic mucous diarrhœa, which mode of treatment was, I believe, first recommended by the late Dr. Graves of Dublin.

CASE I.—In April last, a married woman, aged 34, applied to me for advice relative to a most troublesome diarrhœa, which gave her much annoyance. She stated that shortly after her last confinement, which was some months previous to her application, she began to suffer from pain and uneasiness in her bowels, followed shortly afterwards by diarrhœa, which got better for short periods and then broke out again, each fresh attack being more severe than the previous one. She had taken several mixtures from the druggists' shops, almost without any relief; and when she came under my care she was purged daily eight or ten times, which had necessarily much reduced her in strength. I treated her at first with castor-oil and compound tincture of rhubarb to remove any foreign body, if anything existed as such, from the mucous membrane of the intestinal tract. This treatment caused much tenesmus and uneasiness. I then tried almost all the vegetable astringents, but without effect. I then put her on sulphuric acid and opium, but with alike result. Acetate of lead and opium appeared to check it somewhat, but not satisfactorily. At last I examined the excreta, and found that they were passed in small quantities, each evacuation being mixed with mucous shreds. I put her on fifteen-minim doses of liquor ferri pernitratæ, with one ounce of infusion of calumba, every three or four hours; and in about a week she went from under my care perfectly well.

CASE II.—About the first week in October, I had under my care a somewhat similar case of a woman aged 53, who for months previous to her application had been much troubled with diarrhœa, which gradually became worse. When she applied to me she was much reduced in strength, and stated that her bowels were moved on an average twelve or thirteen times daily; no mixture that she got previously