the face during the convulsions she is pale between them, and very often there is general anaemia as well as anaemia of the brain. Chloral hydrate has been responsible for more deaths than is generally supposed, and chloroform I would forbid, being heartily in accord with the Mayos, who never allow it in their clinic. Ether lessens shock. There is no objection to bromides either by the mouth or rectum, but they are not curative, since they merely quiet the nervous system without removing the cause of the convulsions.

There are other procedures, however, which cannot be too highly recommended; and the first of these is a hypodermic of morphine. I have generally given just the one injection, the dose being one-half grain with one-hundredth of atropine. I cannot recollect a case in which a convulsion occurred after this had time to take effect. Many writers have objected to the use of morphine on the ground that it is likely to stop the secretion of urine. This may be true in normal conditions, but it is quite different in the condition of eclampsia. Here the secretions are already stopped, because there is a poison in the blood which has set up such a spasm in the arterioles, that the blood cannot get into the kidneys to be purified. Neither can it get into the arterioles of the brain, so that portions of it at least are anaemic, as in chorea. A full hypodermic dose of morphine will not only arrest the convulsions, but it will be almost immediately followed by the secretion of urine in comparatively large quantities.

If there is not enough water in the blood to flush out the kidneys we must promptly supply it by the mouth if the patient is conscious; otherwise, by the rectum. This may best be done by the slow continuous method, which consists in raising the foot of the bed on two kitchen chairs, each foot resting in the centre of a chair, and then laying a rubber fountain syringe on the foot of the mattress, so that the reservoir is only a few inches higher than the rectum. This part of the bowel is capable of absorbing enormous quantities of normal salt solution, on the one condition that it enters slowly and under low pressure. If administered from a reservoir a few feet high the rectum will rebel and expel it. While in charge of a hospital in France I made frequent use of this method with the most gratifying results, and for many years before that I have employed it to prevent shock during and after severe abdominal operations. I cannot too strongly emphasize these two points. In every case since I have given morphine and administered water by the rectum the albumin has promptly disappeared from the urine, the colour and quantity of which has quickly improved. The water goes in clear and comes out loaded.

If after having done these things a convulsion comes on, all are agreed that there must be no further delay. The child must be delivered as quickly as possible with the smallest possible amount of trauma and shock. The dilatation of the cervix with Bossi's dilator, or any other procedure included under the term of *accouchement forcé*, must be discarded. If the os is dilatable, an attempt may be made gently to dilate it with the hand, but on the one condition of absolute asepsis, as though it were an abdominal operation, which may, indeed, become necessary a few minutes later; the success of the operation of Caesarean section depends on the uterus being aseptic. Rubber gloves must be used. If the child cannot be delivered with forceps in a few minutes, without tearing the cervix and without violent efforts, it is far better not to continue the attempt. We have another means of terminating the pregnancy which is unaccompanied by shock. Some think that if the child is dead or will die soon after birth, as many infants of eclamptic mothers do, we should break up the child by craniotomy, whether living or dead. I totally disagree. There are others who have advocated vaginal hysterotomy, which consists in cutting through the undilated cervix and delivering with forceps. But this means extensive tearing and bruising and much shock, and for this reason I am opposed to it. If the child cannot be delivered quickly, aseptically, and without injury to the uterus and soft parts, it is better to abandon the vaginal route altogether and at once, and resort to that method of delivery in which shock and sepsis and mortality for the mother are reduced almost to the vanishing point, the average for good operators being about 3 per cent., although there has been at least one run of a hundred cases without a death. This method is Caesarean section by the abdomen. At the same time by this

method the chances for the child's life are very greatly increased, for its journey from the womb to independent life occupies only a few seconds, and absolutely without the hardships of the natural process. With an ever-increasing number of teachers, I maintain that in a certain class of cases it is the only thing to do, and it should be done promptly before any vaginal manipulation. If the eclamptic woman is a primipara, or if she has a long rigid cervix, if the child is viable, if she is near term, in such cases delivery by the vagina owing to the trauma of dilatation, coupled with the shock of the long tedious labour and the risk of infection to which eclamptic patients are especially liable, is much more dangerous than Caesarean section.

Summary.

I may sum up as follows:

1. Do not fail to prevent eclampsia.
2. Do not fail to examine the urine at least four times at the end of each of the last four months, and if albumin is present put the patient on a milk or vegetable diet; give sodium bicarbonate and laxatives, and keep the patient warm, in bed if necessary.
3. If a convulsion occur, do not give chloral or chloroform, or veratrum viride, nor employ venesection.
4. Do not allow the pregnancy to continue when it is known that brain and kidneys are being irreparably damaged.
5. Do not forget that *accouchement forcé*, vaginal Caesarean section, and craniotomy, in the interests of the mother as well as of the child, are no longer justifiable.
6. Do not forget that abdominal Caesarean section performed by an experienced operator is one of the safest operations in surgery for the mother, and that it enormously increases the chances for the child if performed after the end of the seventh month when the child is viable. In one of the latest works on obstetrics D. Lees says that a well known operator had reported 550 cases of eclampsia operated on within one hour of the first convulsion without a single death.
7. Do not forget that the best time to operate is before labour begins and before the woman has been examined by an ungloved hand. The few deaths which now occur are due to infections of the uterus.
8. Do not look upon eclampsia as a one man case. There must be three doctors and a good trained nurse if every case is to be saved. If the proper conditions cannot be obtained at her home, it is better to send her to a good obstetric surgeon at a good hospital.

DENTAL CONDITIONS AT AN ANTE-NATAL CLINIC.

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HAVING had my attention arrested many times by the bad state of the teeth of the patients coming to the ante-natal clinic in the Edinburgh Royal Maternity Hospital, I decided to make a systematic examination of the next hundred cases beginning on June 3rd, 1919. Nine meetings of the clinic served to supply more than one hundred cases of expectant motherhood, and the special inquiry into the teeth was closed on July 1st. The results more than fulfilled the forebodings, and the patients, speaking generally, revealed a most "imperfect dental exhibition."

There was no selecting of cases. The mouth of each patient was examined, and the first hundred were reported upon. Of course the few patients who paid a return visit during the month were only counted once. Some curious answers to questions were received. One patient said that she never suffered from toothache, and it emerged that she was wearing top and bottom plates, and had none of her own teeth left. Another expectant mother reported that her teeth were in very good condition; inspection of the mouth revealed a tell-tale plate.

The first and most outstanding result of the examination was that in only two patients were all the teeth present in an undecayed condition. The happy possessors of these complete sets were a primipara of 23 and a secundipara of the same age; but it was, perhaps, an ominous fact that the latter complained of toothache and earache. The remaining 98 patients all had more or less

defective teeth, and by far the commonest result was stated in the words "many decayed, some extracted." None of the women seemed in the least surprised at the condition in which the mouth was found to be.

The various matters ascertained with regard to each patient were as follows:

1. *Age*.—Eight patients were 20 or less. The youngest was 17, and she had already one or two decayed teeth. Forty-eight were between 21 and 25, fourteen being 22 years old and eleven 23. Twenty were between 26 and 30 years; twenty-two were between 31 and 40 years of age; one was 41 years old and one was 44. Fifty-six per cent., therefore, of these women were 25 years old or less, and only two of them had complete and undecayed sets of teeth.

2. *Number of the Pregnancies*.—Exactly fifty of them (50 per cent.) were primiparas, twenty were 2-paras, eleven were 3-paras, seven were 4-paras, seven were 5-paras, one was a 6-para, one was a 7-para, two were 8-paras, one was a 10-para, and one was an 11-para.

3. *Toothache or Neuralgia during Present Pregnancy*.—Twenty-two of the women had suffered from toothache or neuralgia during the present pregnancy and seventy-eight said they had been quite free from pain, but a few added that the reason was that they had no longer any teeth to ache. Only one of those who had toothache stated that she had suffered a great deal; she was a 3-para, aged 21, who had already had two teeth extracted and at the time had a decayed one in her mouth. Almost every one spoke of having had toothache at some time previous to the present pregnancy. Toothache and neuralgia in the present pregnancy, however, yielded only a comparatively small indication of the amount of decay in the mouth, as was proved over and over again by actual inspection of the teeth.

4. *Number of Teeth Decayed and Number Extracted*.—As has been already stated, only two patients had no carious teeth and had had none extracted. Four patients, all primiparas, had one carious tooth each; a fifth had had one bad one extracted, and now had a completely healthy mouth, she also being a primipara. All the rest—namely, ninety-three (93 per cent.)—had more than one decayed tooth or had had more than one tooth pulled. With most depressing regularity the report was, "Several now decayed, several have been already extracted." The following were the descriptions given by ten patients (Nos. 11 to 20):

"Two pulled"; "several diseased, nine pulled"; "several decayed, three extracted"; "several decayed, six extracted"; "several bad ones, one or two extracted"; several carious among the bottom teeth, all the top ones extracted"; "a beautiful set of teeth, none extracted"; "lost all her teeth either by decay or extraction save two"; "has had all her teeth extracted or reduced to roots, save five"; "has had three extracted, and one is now carious."

Among the remaining 83 the following were the worst so far as their dental conditions went:

Number 5, a 1-para of 30 years, had lost or had had extracted all her teeth. Number 6, a 1-para of 25 years, had had eighteen extracted and now had only five teeth left. Number 23, a 6-para of 29 years, had lost many, and had had all the top teeth pulled. Number 32, a 2-para of 33 years, had had all the top ones drawn and the back ones of the lower jaw. Number 33, a 10-para of 34 years, had had ten extracted at one time; the rest were all decayed. Number 35, a 2-para of 30 years, had had twelve pulled at one time and fifteen on a subsequent occasion. Number 38 had had eleven pulled at once.

Number 42, a 2-para of only 22 years, had had thirteen extracted, and had several bad ones. Number 45, a 1-para of 38 years, had had all her teeth pulled save four. Number 51, a 2-para of 32 years of age, had had ten extracted at one time, and six others at other times. Number 52 had had ten drawn at different times. No. 54, a 5-para of 31 years, had had ten extracted on one day, and seven a day or two later, soon after the birth of her last child. Number 55 had had twelve extracted. Number 56, a 1-para of 24 years, had had many teeth drawn when she was only 16 or 17 years old. Number 60 had only five teeth left. Number 66, a 7-para 34 years old, had had her top teeth and some bottom ones extracted during her last pregnancy (at fifth month). Numbers 67, 69, 71, 73, 74, 81, and 91 had had all their top teeth extracted. Number 79, a 1-para of 35 years, had only four teeth left.

Number 85, a 1-para of only 21 years, had had twelve teeth extracted, and several of the remaining ones were decayed. Number 90, who was, however, 44 years old, was quite toothless. Number 97, a 1-para 36 years old, had had 14 extracted at one time and eleven at another. Number 98, aged 24 years, had had twelve extracted at one time, and several were now requiring attention. Finally, Number 100, a 2-para of 27 years, had had all her teeth extracted save four.

Many of the other patients had mouths only a shade better than those singled out. Altogether this inquiry revealed an amount of dental incapacity which was really alarming, and in addition there were not a few cases of marked oral sepsis and a great many of slighter degrees of the same disorder. When it is remembered that 56 per cent. of the women were 25 years old or younger, and that 50 per cent. were pregnant for the first time, while 31 per cent. were pregnant for either the second or the third time, the whole clinical picture becomes dark in the extreme.

5. *Dental Treatment Previously Received*.—The investigation yielded evidence, further, as to the amount of treatment these women had received at the hands of the dentists. Wholesale extraction and the wearing of one or two plates was by far the commonest history furnished by the patients. Forty-eight (48 per cent.) were wearing false teeth, and of these eight were wearing upper and lower plates and a ninth was about to add a lower plate to her equipment. Thirty-eight had a single (top) plate. Fifty-two had no false teeth. Tooth-stopping had very seldom been resorted to; in only three cases was there a history of teeth being stopped, although it is possible that the question did not always elicit the facts about this dental operation. In a few instances there was the history of dental manipulation during pregnancy, but generally the prejudice against such interference in the expectant period seemed to have been acted upon and carious teeth left strictly alone.

CONCLUSIONS.

Here, then, were one hundred expectant mothers, drawn by no means from the poorest class—many of them had husbands well able to provide them with accommodation in the private wards of the hospital—most of them enjoying a fair measure of health, half of them primiparas, more than half of them under 25 years of age, and yet ninety-eight of them had more or less defective teeth, ninety-three of them had had more than one tooth pulled, or had lost more than one tooth by caries, and nearly half of them (48 per cent.) were wearing false teeth, eight having two plates and thirty-eight a single plate.

Dental Deficiency and Disease among Women.

Such a result suggests certain reflections. In the first place, it points to the existence among working-class mothers of an alarming amount of dental deficiency and disease with, in not a few cases, concomitant oral sepsis. These conditions cannot fail to react injuriously upon the mother's digestion, and through it upon the nutrition of her unborn infant. They may also retard the return to complete health and strength in the puerperium, even if they do not increase the danger which always exists then of septic infection. They cannot be helpful in lactation. They also represent an amount of suffering, if not in pregnancy at any rate at other times, which is far from negligible.

Need for Preventive Dentistry.

In the second place, it calls aloud for a campaign amongst the potential mothers of the nation for the saving of teeth by all the means with which preventive dentistry is furnished. This may take some time to get set agoing, although the need for caring for the teeth of the women of the population is no less acute than was that for the soldiers during the war, and in the meantime a beginning might be made by the temporary appointment of dental physicians to maternity hospitals not already furnished with them, so that before the women leave the hospital they may have their mouths inspected and what is necessary to be done told them, even if it be not convenient to have it carried through there and then. In particular the study of the cases at the Edinburgh Royal Maternity Hospital seems to point to the desirability of greatly increasing the facilities for tooth-saving by means of stopping, crowning, and the like, in place of the present system of wholesale extraction in comparatively young women.

Dental Treatment during Pregnancy.

In the third place, the results seem to point to a revision of the custom of giving a sort of "close time" for the teeth during pregnancy—a time during which dental disease is suffered to go on unchecked; until after labour is over the only possible treatment is extraction. Many teeth must have been lost in this way.

Of course, if it is a fact that tooth pulling or stopping is

dangerous during gestation to the extent of leading in even a small proportion of cases to abortion or premature labour, one must act warily; but is this a fact? Is it not rather the fact that nowadays the abdomen is opened for the relief of morbid conditions there during pregnancy, and that the uterus does not empty itself in consequence so long as asepsis is maintained. I have performed abdominal section in several different conditions during pregnancy, and have not had to deplore an interruption of pregnancy in any of them. The risk due to caring for the teeth and even of extracting them must be considerably less than that arising from operations situated so near to the uterus as, say, appendicectomy or ovariectomy. At any rate, it is surely well worth while to reopen this question and ask for cases in which modern dentistry is responsible for obstetric accidents. Until this has been done it is obvious that women who may at any time become expectant mothers should have their dental house, so to say, set in order.

In the last place, the further investigations of these and similar sets of cases at ante-natal clinics may throw some light upon the causation of dental caries in pregnancy. Certainly in some of the cases the bad state of the teeth coincided with heartburn, but whether as cause, effect, or mere concomitant, could not be definitely stated.

THE ACTION OF SYPHILIS ON NATIVE COMPLEMENT.

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WHEN studying the activity of human complement in various disorders, certain facts were elicited as regards syphilis which, so far as I am aware, have not previously been noted.

Syphilitic serum, it is already known, shows, as compared with normal serum, a diminution of complementary activity in varying degrees when incubated with sensitized cells. For example, normal serum showed complete haemolysis when incubated in a water-bath at 37° C. for six minutes (in the proportion of 1 vol. of 1 in 10 serum) with 1 vol. of sensitized cells 3 per cent. and 2 vols. of normal saline, whereas a similar amount of syphilitic serum under similar conditions took thirty minutes to bring about complete haemolysis. The specific serum in this instance was from a case of tertiary syphilis. I have noticed that in cases of early acquired syphilis after successful treatment by salvarsan, etc., and resulting negative reaction of the "Wassermann" test, the serums are also deficient in complementary activity to a very marked degree. The following illustrates this:

Complement fixation tests were done (Harrison's method) on a series of serums, from which I select:

		Result.
B. For diagnosis	...	Neg.
C. " "	(general paralysis)	++
E. " "	(locomotor ataxy)	±
G. " "	(general paralysis)	+++
H. Early treated	...	Neg.
H.E. For diagnosis	...	Neg.

The fresh serums (1 vol. of 1 in 10) of these cases were put up with 1 vol. sensitized cells and 2 vols. of normal saline added to make up the total used in the ordinary test. The results after ten and fifteen minutes in the water-bath are given in the following table:

	10 min.	15 min.
B. ...	C.H.	C.H.
C. ...	M.H.	C.H.
E. ...	V.M.H.	C.H.
G. ...	V.S.H.	M.H.
H. ...	M.H.	C.H.
H.E. ...	C.H.	C.H.

C.H. = Complete haemolysis.
M.H. = Marked haemolysis.
V.M.H. = Very marked haemolysis.
V.S.H. = Very slight haemolysis.

Here Case H., treated syphilis, shows complete haemolysis in fifteen minutes, whereas G. (general paralysis) untreated, only shows marked haemolysis. These serums, which were all drawn on the same day (day of test) and kept under aseptic conditions on ice, were again tested on

the fourth day afterwards, results on this occasion being as follow:

	15 min. in water-bath.	30 min. in water-bath.	Overnight in- cubation at 37° C.
B. ...	C.H.		
C. ...	C.H.		
E. ...	C.H.		
G. ...	N.H.	N.H.	*C.H.
H. ...	N.H.	N.H.	N.H.
H.E. ...	C.H.		

N.H. = No haemolysis.

* This was not apparently due to bacterial action.

The same series examined on the sixth day gave the following results:

B. ...	C.H. in six minutes.
C. ...	C.H. in fifteen minutes.
E. ...	C.H. in fifteen minutes.
G. ...	N.H. in sixty minutes.
H. ...	N.H. in sixty minutes.
H.E. ...	C.H. in fifteen minutes.

Guinea-pig serum kept under similar conditions and a like period showed complete haemolysis in six minutes.

Complementary activity of serum does not diminish so rapidly as is generally thought, when the serum is kept under suitable conditions, but this diminution is more rapid in proportion to the degree of positivity of the complement fixation test, and the return of a serum to normal conditions as regards the "Wassermann" test does not appear to effect any corresponding change in complementary activity. This result is not what would be expected on the supposition that deficient haemolysis is due to the presence of antigenic substances in the serum.

First, why does it persist after efficient treatment and in the presence of a negative Wassermann reaction? Secondly, when the serum is freshly drawn the complementary action is fairly active, more active in early treated syphilis than in tertiary untreated, and yet after a few days the reverse is the case, indicating a certain debility or fragility of complement (if one may use such a term), and not the presence of any anticomplementary substance.

It is important to ask what the relation is between the presence of syphilitic poison in the system and the lesion of complement; also, after recovery from syphilis, as evidenced by a negative reaction to the "Wassermann" test, does the serum recover its normal activity, and, if so, when? I have examined cases three months afterwards, but have not found that there has been much recovery in this respect.

I have not many opportunities for examining cases of early treated syphilis, but desire to bring to the notice of those who have the urgency of deciding what relation exists between complete recovery of complementary activity in syphilis and the disease process.

ANKYLOSTOMIASIS IN LONDON.

BY

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THE occurrence of ankylostomiasis in a subject who has neither been abroad nor resided in a mining district does not appear to have been recorded. The following is a description of a case which was complicated by the coexistence of Addison's disease.

A boy, aged 15, who had been employed at the Admiralty, was admitted to the Middlesex Hospital under the care of Dr. A. F. Voelcker. He complained of fainting attacks, lassitude, headache, shortness of breath following exertion, and, latterly, of morning sickness and constipation. He was emaciated and the skin was somewhat yellow in tint without patchy pigmentation. In hospital he usually vomited immediately after breakfast, but for the remainder of the day he could take food satisfactorily. The temperature had a subnormal tendency; there was no oedema, and the ophthalmoscope revealed no abnormality.

Examination of the blood showed red corpuscles 1,924,000 and white corpuscles 7,400 per c.mm., haemoglobin 60 per cent., and colour index 1.5. The differential leucocyte count was as follows: Polymorphonuclear cells 47.5 per cent., lymphocytes 30 per cent., large lymphocytes and transitional cells 15 per cent., eosinophiles 6 per cent., and mast cells 1.5 per cent. In view of the eosinophilia the faeces were examined, and numerous typical ova of *Ankylostoma duodenale* were seen on several occasions; once an immature worm was found.