satisfactory way, but an attempt has been made to divide homes into three groups—namely, "bad" homes, "fair" homes, and "good" homes. This was done after consideration of (a) total income, (b) locality, and (c) general hygienic conditions. In a series of 494 homes in which there was no tuberculous person living, 110 were classified as "bad," 154 as "fair," and 230 as "good." The incidence of tuberculous infection in each of these groups was practically the same, the figures being 30.9, 37.6, and 35 per cent. respectively. In 228 homes where there was a person suffering from tuberculosis, the corresponding figures were 86.4, 76.8, and 68.6 per cent. These figures would seem to show that where there is no known tuberculosis in the home, the incidence of tuberculous infection is much the same, whether the home conditions are "bad," "fair," or "good," while in the case of the tuberculous household there is a considerably lower percentage of tuberculous infection in the "good" home than in the "fair" home, and much more is this the case when comparing the "good" with the "bad" home.

CONCLUSIONS

1. The Mantoux test is more delicate than the Pirquet test. The Pirquet test is equivalent to 0.1 c.cm. of 1 in 10,000 tuberculin given intracutaneously.

2. The incidence of tuberculous infection in children increases gradually from infancy to puberty.

3. The incidence of tuberculous infection up to the age of 15 years is 43.1 per cent.—23.0 per cent. are infected between 0 and 5 years, 39.0 per cent. are infected between

5 and 10 years, 58.3 per cent. are infected between 10 and 15 years.

4. The incidence of tuberculous infection is slightly higher in girls than in boys.

5. The incidence of tuberculous infection in children between 0 and 15 is doubled when there is contact with open tuberculosis.

6. The incidence of tuberculous infection from birth to 5 years is five times greater when there is contact with open tuberculosis than when there is no contact with the disease.

7. The incidence of tuberculous infection in children of tuberculous fathers with positive sputum is slightly higher than in children whose mothers have positive sputum.

8. Our figures suggest that the incidence of tuberculous infection in contact children in "bad" homes is higher than in contact children in "good" homes.

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THE NEED OF EDUCATION IN QUESTIONS OF SEX *

BY

THE REV. T. WENTWORTH PYM, D.S.O., M.A.

CANON RESIDENTIARY OF BRISTOL

It would be a mistake to suppose that education in sex matters refers solely to physiology. There is plenty of evidence that ignorance of the body may breed sex-mismanagement; but there is also evidence that physical knowledge, while, no doubt, protecting informed people from the worst physical consequences of sex-mismanagement, by no means ensures correctness of conduct. By sex-education I mean the physical, but also, the social, the moral, and the emotional (or what may be called the psychological) aspects. Again, while believing in the need of education in this more comprehensive sense, I do not believe that education alone, however complete in these ways, can be counted on to do more than point the way and ease the burden. As you would expect of me, I hold that as body must be directed by mind, so mind must be informed and empowered by God Himself. This recognition of man as what we clergy call a spiritual being does not, perhaps, concern doctors as a professional matter, but I should run the risk of being completely misunderstood if I omitted all reference to it. I put it now in the forefront because of its supreme importance; I do not propose to say more about it because it is my business to open a discussion on those other aspects of our subject which give common ground to us all.

The first of these to consider is the mind of the educator; and here we are faced with the difficulties which inevitably belong to a period of transition. The required instruction must often be given by those who have not completely escaped from the atmosphere of ignorance, negation, fear or disgust in which they themselves were brought up.

* Read in opening a discussion in the Section of Medical Sociology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

When harm is alleged to result from education in sex we may suppose that it is nearly always due to the fact that the information is given in the wrong way. Wrong attitudes of mind in the educator may be briefly summarized: his own experience of life may lead him to over-emphasize dangers, sins, abnormalities; or he has escaped from the view that he is dealing with a dark and mysterious subject, but still keeps it in a water-tight compartment and deals with it in a highly specialized manner instead of as a universal part of life as a whole; or his approach is over-emotional, and he cannot speak of the physical side of sex in that matter-of-fact manner which we find and envy in those who profess the science of medicine. He is furtive where he means to be reverent, alarming when he means to be cautionary, and over-stimulating through his ardour for righteousness; or, worst of all, his own interest in the subject is morbid, obsessional.

The result of wrong attitudes in the educator must often be injurious to the boy or girl to be educated; the pupil is needlessly stimulated or frightened, and may, even after some instruction, regard sex-energy as a force to be suppressed rather than as a creative faculty to be directed aright and to be controlled for that end. Hence the need of emphasizing the importance of educating the educators. The Lambeth Conference indicated parents as the people directly responsible and the Church as the quarter to which parents should look for guidance and equipment. But it would be useless to ignore the fact that a majority of parents are incompetent for the task, and only a minority of clergy possess, at present, the knowledge required to provide the right guidance. During this transitional stage it may be necessary that certain people, men and women, chosen for the purpose, should be available as educators of educators, working to widen the area of competency.

Be that as it may I venture, as a father myself, to illustrate the part to be played by parents in very early stages. There is much to be said, which for lack of space must be here omitted, about the atmosphere of the home, the way in which father and mother treat each other, and

together treat the children; I omit too questions of general training of children in the home; it should be obvious, for instance, that the spoilt child, the child who has everything he wants and never learns to "use the world and not abuse it," is likely, some day, to regard any control of sex-desire as absurd. I will pass at once to a particular point which, while it seems to me of great importance, is clearly one upon which the opinion of medical men and women would be valuable if not decisive. I refer to proper instruction in the physiology of the evacuation of waste materials from the body. I urge the importance of this for two reasons. (a) The child's curiosity about and interest in evacuation normally appears in consciousness before interest in sex-matters. Thus a chance is presented of giving information about the general working arrangements of the body before any special sex-instruction comes; and so the latter, when it becomes opportune, does not appear to the child as an isolated and peculiar excursion into bodily affairs; it fits into a field of information into which the child has already been led. From the very start sex is connected with and not divorced from ordinary life and ordinary treatment of life. Elementary biology and botany may serve as a very useful preamble to sex-instruction, but science should surely figure in education at a very early stage and not appear first, or only, as the vehicle of instruction in sex. That would be to give to sex just that touch of peculiarity which is undesirable. But to play her part aright along these lines the mother needs double help; she must have correct information, and usually and rightly distrusts such information if it does not proceed from a medical source. But even if she has a cheap and trustworthy handbook, she often needs assistance in translating technical description into the language and idea agreeable to the child-mind. When the child asks "Where does my food go when I swallow it?" the answer should not contain the word "oesophagus"; it is possible to make the food's journey and use adventurous and interesting without so much as mentioning a "colon." But at present there is too wide a gulf between technical knowledge and language on the one hand and the needs of the parental educator on the other.

There is (b) a further reason why correct instruction about evacuation will render sex-instruction the easier. At present the uninstructed boy and girl are faced, even though unconsciously, with a truly disastrous confusion. When, in adolescence, they become physically aware of sex, the sensations occur in a locality of the body which is bound up, in their thoughts, with what is dirty, shameful, unworthy. Small wonder that father looked furtive and mother grew hot at any reference to procreation! It is all connected with dirt! This is at any rate one reason why the walls of public lavatories for men are so constantly the scene of lewd drawings and remarks. Against such a background in the mind of the child, to present sex as sacred or noble is often a herculean task; for it means not only teaching, but un-teaching—the most difficult educational performance.

I beg to submit for criticism an estimate of the correct background, collecting into one speech the fragments of teaching given at one time or another by parents or nurse:—"Good health depends more than anything else on our having clean insides to our bodies. Those parts of your body which help it to keep clean, by getting rid of waste stuff which is not wanted, do one of the most important duties for the body, and are to be honoured accordingly. Yes, I know you go to a separate place to get rid of this stuff; and you do so largely for the same sort of reason that you don't (if your house is large enough) brush **your** teeth or wash your hands at the table where the **meal** is laid. It is because what is got rid of is dirty or even **poisonous**; the parts of your body used to get rid

of unwanted parts of food are very important, must be kept clean themselves and guarded from interference, like your eyes. Later on you will learn of an even more honourable place in life taken by that part of your body or by another very close to it."

The duties of parents towards young children do not end with the supply of a decent background for later instruction in the physiology of sex. An immense opportunity is presented by the questions asked by children. There are two things to be said about the matter, and one about the manner of the answers to be given. The question must be answered truthfully; that is the first thing. It is almost impossible to exaggerate the harm done by lie or evasion, especially where the offender is the child's parent. It is permissible to say "I don't know" or "You wouldn't understand if I told you now; ask me again a bit later on." If the question is asked in the presence of a visitor it is permissible to say "Mrs. X knows all about that, and I don't want to bore her; I'll tell you when we're alone." It is not permissible to say "Sh! Sh! You mustn't ask questions like that." The impression made on the visitor matters hardly at all; if she is of the kind to be shocked by truth, shocked let her be; for the impression made on the child may well be of life-long importance. There are very good reasons for giving a child all the possible information demanded; in the first place unsatisfied curiosity is a strong ally of sex-irregularities; in the second place the questions of a child have their own right to be answered; in the third place the questions of children about sex are not usually difficult to answer for anyone who has taken the trouble to acquire the information and to translate it into non-technical terms.

If the first rule about children's questions is to answer truthfully, the second is not to say more than is asked. An illustration will make this clear: The boy of 4 or 5 asks "Where was I before I was born?" The father replies "Mummy was keeping you warm and safe in her body." In 999 cases out of 1000 the enquirer is satisfied for the time being; his question is answered; the present need of his curiosity has been met, and the mood very quickly passes. But, unfortunately, while his mind is proceeding from the location of babies to a painter on a ladder at the house next door, father is conscientiously availing himself of the "heaven-sent opportunity"; he launches his set speech about bees and flowers or the marital customs of domestic animals. At best the child is bored; at worst his intelligence is over-stimulated on the subject and he carries away the impression, to which as an older boy he will return, that on this subject of birth and babies his father is heavy and unnatural. Why?

This brings us to the one essential rule about the manner of imparting information; this must be natural, ordinary, unstrained. The boy is playing bricks on the floor and asks why the milk is delivered in bottles; his father answers from the arm-chair without lowering the book which he is reading. Five minutes later the boy asks a sex question; the father must answer in the same manner as he replied previously; if he puts down the book and prepares for a conversational high-dive he introduces into the atmosphere a tension which will not escape the sensitiveness of most children. And so we return to the mind of the educator as the most important factor in sex-education.

I do not pretend that the subject of how to present sex to the child-mind is exhaustively laid out in the foregoing remarks; I have sought to dwell in some detail on points of importance which seem to be commonly disregarded. It is impossible to give even so much detail to all the different stages of sex-education. There are two stages in the whole concern which are, I believe, of greater

moment than any others; one is that which has already occupied our attention. That view of its importance is thus described by the Bishops in the 12th Resolution of the recent Lambeth Conference: "It is important that before the child's emotional reaction to sex is awakened definite information should be given in an atmosphere of simplicity and beauty." My claim would be that those words justify the emphasis given in this paper to the mind of the educator and to the treatment of quite young children.

The other vital point seems to me to be preparation for marriage, and to that we shall come. But in between lies that vast tract of territory which comprises later childhood, adolescence, courtship, and what may be called "involuntary celibacy." Before an audience such as this I presume that it is unnecessary to spend time in arguing the need of right sex-instruction for these stages; I therefore merely single out a few items for special emphasis. For instance, I do not believe that the instruction of adolescents should be done in groups, whether in school or Confirmation Class. The botanical or other general scientific background—the positive teaching which links the subject healthily to creative activity in life as a whole; yes; but when one comes to the specific application to the sex-development of boy or girl, and to the warnings and advice required, personal instruction is necessary. It may not be always possible; I know the difficulties, but if they can be overcome so much the better. For the physical and emotional development of different boys and different girls varies very greatly; what in the group-teaching may be suited to one boy is too puerile for another boy and too advanced for a third; besides, many groups will contain the joker, the decadent, or loose liver who may afterwards ridicule or otherwise degrade and misuse the teaching which has been given.

At this juncture I have in mind the minister of religion, the scoutmaster, the school-teacher, the club-leader and others who are connected with adolescents, rather than the parent. For in so many cases the home is unable, or if able unwilling to perform the duty. Is there any general method which, though it may admit of many exceptions, is to be recommended? I believe that there is, and it is most important that such a recommendation should be in terms of the ordinary man or woman; it may assume good sense and goodwill, but it will be of little practical value if it assumes expert omniscience. Hence literature, perhaps of two kinds, is required; certainly a choice of booklets for the young person, and perhaps a booklet or book of a more advanced type for the preparation of the educator. The latter will select the booklet which he judges to be the best suited to the age and development of the particular boy. He will give the booklet to the boy to read; if it can be avoided the literature should not be lent to be taken away, but read on the spot and returned. If so the educator must strive to be unhurried; he will not fuss around or cause the boy to feel "under observation"; he will, for example, turn to his table and get on with his own occupations. When the boy has comfortably finished, a conversation will start from the matter which has just been read; a suitable opening remark often is, "Well, how much of that did you know already?"

It is again necessary to stress the importance of the educator's own mental condition during such an interview. He must not be tense or strained; he may be bound to talk about emotional matters, but he must not talk about them emotionally. If he cannot conform to this principle he is not a suitable person to give the instruction. Where the words "boy" and "man" have here been used the words "girl" and "woman" may also be read. There are very few exceptions to the rule that a man (other than a doctor, and then only in special cases) should never instruct an

adolescent girl in the physiology of sex. If clergy were to tell me that they do this successfully with girl confirmation candidates, I could only suppose that they omitted essential parts of the information required. For a man to include it all, in talking to an adolescent girl, would be to run the grave risk of stimulating her in the wrong way; at best the normal girl would be consumed with shyness. Besides which the right woman can obviously perform this duty better than a man. One of the first duties of the clergy in sex-education is to secure the services of the best woman available, to whom the adolescent girl may be passed on.

The assumption which lies behind all this is that the required literature is available. This is not so. There is some good literature, but it is not widely known. We should notice that here are really two quite separate points: (1) the existence of the literature, (2) its availability. The Lambeth Conference precisely defined this double difficulty when it stressed the need "to review the available literature and to take steps for its improvement and its circulation."

Now there are three objections, one or more of which apply to a great deal of the literature in use for sex-education: (1) The fear-motive is too prominent. I do not say that this motive has not its due place; certainly it has. But any pamphlet which starts from it or harps on it, any pamphlet which deals too exclusively with sex-error and its consequences, and treats sex as a dangerous rather than as a creative faculty, stands self-condemned for ordinary use. (2) The pamphlets tend to become out of date. The divergences may not be very serious, but in view of the enormous strides made in recent years by medical researchers (not forgetting psychologists) in this subject, we clergy need protection from the suspicion in our minds that we are handing out physiological or psychological information which would be contradicted by the scientist. (3) Many of the existing pamphlets quote as authorities medical names which altogether lose their impressiveness on investigation. Disguise is best achieved here by exaggeration, so I will exaggerate. In a pamphlet I read that a very distinguished man of medicine has stated that "For the normal man or woman continence need never be injurious to health." I am impressed. But, not knowing him by name, I investigate. The gaps in my knowledge of medical history are revealed, for I find that this man was once at the head of his profession, having been Court physician to one of the Hanoverian kings. This discovery sobers me considerably, and I ask myself, "Is this impressive name retained in this pamphlet, because no physician of like eminence could be persuaded in more modern times to utter in favour of continence?"

In answer to me on this third point it may be said that distinguished medical men and women have in recent years corroborated the opinion just quoted. But here comes difficulty about publicity or circulation. "The statement was published by some society; but by what society? and what was it called? How can I get hold of it? My bookseller doesn't know; nor does my Rural Dean." But even if I can discover if there remains a certain objection to the authority of a document signed in their individual capacity by people, however eminent. It carries the weight of those people's reputation, but can be and is contradicted by other members of their profession; for doctors, and not clergy alone, have been known to contradict each other's opinions.

It would scarcely be appropriate that this meeting should discuss how the Bishops of the Anglican Communion should translate into action the desire about literature expressed in the 12th Resolution of the Lambeth Conference. But let us make the hopeful assumption that soon the suggested review of literature and of its availability

is made, and that some body of people is commissioned to fill the gaps. I am sure that in the future, as in the past, leading medical men and women will help the Church to fill the existing gaps in the best possible way. But I suggest that more is required. We need some seal upon any such publication, to assure those who use it that the scientific information contained in it is substantially correct. Such an imprimatur could easily be so worded as to make it clear that reference was being made only to the scientific statements of fact, and not necessarily to the use to which they were put. The literature so certified could be recommended the more confidently by Bishops to their clergy and by clergy to their people. Medical societies are a greater mystery to the laity than ever can be clerical chapters or assemblies to the doctor; so I do not profess to know exactly by what body or in what way this suggestion could be carried out. But I hope that a Section of the British Medical Association is not an improper place at which to ventilate the idea. Could not some authoritative medical body, with a reasonable claim to speak for a majority of the profession, issue, through a Committee appointed by its Council, some such certificate for sex-literature, the medical part of which was approved? The offer of such help to the Archbishops would be a graceful, and I should guess, valued response to the appeal of the Lambeth Conference for co-operation between our two professions; it is true that that appeal was not in the context of sex, but no subject could benefit more greatly by an increase of such co-operation.

It remains to comment in some detail upon part of that division of sex-education which is becoming known as "preparation for marriage." The selection of this division of the subject has been made for two reasons; in the first place it is a form of education which until quite recently has been ignored; in the second it appears, at least to the writer of this paper, and not to him alone, the most important section of sex-education as a whole because so much hinges on it. We have had occasion to note that the present is a period of transition; we recognize the importance of early teaching for children, yet are bound to admit that only a minority of married couples have the knowledge and willingness to perform this duty. At some later stage the competent educator is handicapped by the fact that he is late in the field; there is so much to unteach; so much harm has already been done. Thus there is a sort of vicious circle; every phase is important, yet in each there is liable to be a handicap. I believe the most important point at which to break through is marriage. For proper preparation for that may not only increase the number of happy marriages, but it should be the door through which may be secured right education for the children of those marriages. Thus it may herald the slow dawn of a new era. I would say nothing to discourage the efforts of those who are addressing themselves to other phases of the general problem of sex-education; a general effort is needed all along the line, but in that effort marriage is a crucial point.

The Bishops have not yet amplified or defined their Lambeth appeal for "some further preparation for those members of the Church who are about to marry," but it may be safely assumed that they meant very much more than physiological instruction. There is definitely religious instruction, practical common-sense advice of the give and take, the mutual adjustments required in the married state, the law of the Church and so forth. There is much to be said about the conduct and influence of the home, about the technique of self-control in the most intimate relationships of married life. I do not wish even to seem to reckon any of these of small account, through omitting them now, nor to imply that doctors, whether as men and women, or in their professional

capacity, have no voice in these matters and no opportunity and duty of influence. But in order to make the best practical use of the time remaining to me I will confine my remarks to that part of the subject which obviously commands medical interest.

The respect in which the contracting parties to a marriage greatly need education is in their mutual ignorance, man of woman and woman of man. The cynic may retort that on the man's side at least this might be remedied by premarital recourse to prostitution. Actually the reverse is true; the professional or promiscuous woman does not reflect the physical and emotional reactions of a decent woman, and the man who treats his wife in intercourse as he has treated other women before may lay the house of married love in ruins. But the difficulties of the situation are not confined to the man of previous experience of some kind. Man is, for example, ignorant of woman in that he does not know that her inclination towards intercourse is normally much more gradual than his, and that when intercourse has begun her progress towards complete experience, physical and emotional, tends to be slower than his own. Whether or not, at all, such ignorance is to be found within the medical profession, there is, I submit, enough evidence to support the statement that such matters go beyond the sheer physiological instruction received by the average medical student. A mechanic in a motor-works knows the different parts of a car; he is constantly manipulating them; he can teach another man their position and functions. But this knowledge does not render him completely competent to drive a car, still less to teach someone else to drive it. On the other hand the car may be driven extremely well by someone who has very little technical knowledge of the insides of the car.

Now herein lies our great difficulty in what may be called the physiological part of preparation for marriage. It is a kind of No Man's Land. Your profession may claim it as "medical." You may say "Send your prospective bridegroom to a doctor." But can you accompany that advice with any assurance that the average local general practitioner is competent to deal with the situation? If you cannot yet give that assurance will you help the married clergy to give the right help to men, and selected married women to give the right advice to women about to marry? I will not delay you now with any consideration of the organization required in the ministry of the Church to meet the need which I am outlining; that must be and can be thought out and provided. I will only add a few other illustrations of the existing need.

There is a very common and injurious assumption that consummation must take place the first night of married life or at the very first opportunity afterwards; to this is attached the rumour that the experience must be painful or at least unpleasant for the woman. Neither man nor woman is equipped with any knowledge of how to deal with this situation; the man is anxious to get the business over; has not his wife just promised to "obey"? Nervous roughness on his part—in some classes of life deliberately reinforced by alcohol—may produce disgust in her. What was meant to be sacramental, the outward expression of a love which combined body, mind, and spirit in man and woman, becomes degraded into the satisfaction of the body of one alone. For the union is not merely physical and it cannot so be labelled; it is mental, emotional, moral, spiritual—at least, in true marriage, it should be so.

The following may be listed as some of the causes of divorce, and of many more unhappy marriages, due to an ignorance neither invincible nor unavoidable, an ignorance which, by the efforts of Church and Medicine, must be removed: Nervous impotence on the man's part; lack of response on the woman's; the folly of the

deliberate avoidance of any children; indulgence which is one-sided; over-indulgence and lack of any system of control; to such major causes might be attached many important, though in a sense, minor matters. I do not mean that these difficulties and failures should be treated negatively, as things against which cautions should be given; they are to be avoided by quite simple positive information before marriage. It may be urged, of course, especially against such preparation for marriage, but also against the whole idea of the need of education in questions of sex, that any such education is highly artificial; that sex is natural in man and woman, and should function spontaneously. It is perhaps hardly necessary to take such an argument very seriously before a medical audience. The history of civilization at its best is the history of an increasing understanding and control of natural forces that they be directed towards the noblest ends; from that progress we cannot now step back. The choice is quite clear; either back to the jungle from which long ages ago we emerged; or on to the City of God.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

CALCIUM LEVULINATE FOR INTRAVENOUS AND SUBCUTANEOUS INJECTION*

In recent years it has become obvious that in certain cases calcium must be administered more rapidly and efficiently than is possible by the oral route. Thus, in the case of tetany following thyroid operations, in the vomiting of intestinal obstruction, and also in some recently discussed conditions such as osteitis fibrosa cystica and coeliac rickets, the tetany has been relieved by the intravenous and subcutaneous administration of calcium salts. Again, the use of calcium salts intravenously has been recommended for pre-operative treatment in various surgical conditions, especially in jaundiced patients.

The use of the simple inorganic salts (for example, calcium chloride) for intravenous injection is undesirable, as ulceration usually follows if extravasation occurs. For this reason various organic salts of calcium have been tried, but these have all suffered from the disadvantage of their relative insolubility. With some, however, the desired concentration can be attained by using a supersaturated solution, as is done, for example, with calcium gluconate; but since this method is rather limited, it was felt that a more soluble calcium salt suitable for injection should be sought. It was found that the calcium salt of levulinic acid possesses the desired properties. This salt, which has the composition expressed by the formula $(\text{CH}_3\text{CO}\cdot\text{CH}_2\cdot\text{CH}_2\cdot\text{CO}_2)_2\text{Ca}\cdot 2\text{H}_2\text{O}$, contains 13.1 per cent. of calcium. It is very soluble in water, stable 25 per cent. solutions being obtainable with ease. Stronger solutions are syrupy. The solutions are stable at 100° C. The reaction of a 10 per cent. solution lies between pH 7 and pH 8.

In case the levulinate ion should prove to be strongly toxic, the effect on the blood pressure of an anaesthetized cat of a solution of calcium levulinate was compared with that of a supersaturated calcium gluconate solution of the same calcium content. The depressor effects of the two solutions were approximately the same. A dose of 33 mg. of calcium per kg. as 25 per cent. calcium levulinate was also given intravenously to each of three rabbits without any mishap.

The effect of injecting 20 c.cm. of 10 per cent. calcium levulinate intravenously into a normal person was investi-

gated. No unpleasant result ensued. A similar solution was given intravenously in four cases of tetany, and for the pre-operative treatment of five jaundiced patients. There were no reactions whatsoever; and, further, ulceration does not seem to follow extravasation, for in one case where the latter accidentally occurred no sloughing resulted, although there was a fairly severe haematoma. We would point out that owing to its great solubility calcium levulinate is particularly suitable for subcutaneous injection.

We have to thank the Crookes Laboratories for preparing for us the pure calcium levulinate referred to above.

G. D. GREVILLE.

E. C. DODDS.

CAESAREAN TWINS

I wish to place on record the following case of Caesarean twins on account of the extreme physical deformity of the mother, her ante-natal care, her rapid post-operative convalescence, and the extremely healthy condition of her children.

Mrs. X was born in 1897, and at the age of 4 was treated in Edinburgh for "curvature" of the spine. For three years she was kept in bed, and occasionally in plasters, till the hump became established and the pain from movement less acute. Her deformity became permanent in time. She first consulted me in August, 1925, on account of severe pain in her spine. I then made the following entry on her case sheet. "Marked kyphosis and scoliosis, large permanent hump on right side, pain on left side, due to pleurisy, enlarged glands in the right iliac fossa, and enlarged septic tonsils." She was treated medically, with slight improvement in her general condition, but she always remained a chronic suffering invalid. A spinal support was ordered for her, and she was instructed to wear it during the daytime only when she was on her feet. In March, 1928, I enucleated her tonsils under a general anaesthetic. Her health subsequently improved to a great extent, and she became pregnant in spite of the fact that she was still a virgo intacta, there having been on no occasion any penetration during sexual intercourse. Even digital examination was impossible. She was admitted to Nell Lane Auxiliary Hospital and x-rayed there. The pelvis was found to be flat, the outlet was very narrowed, and the promontory was bulging forward. The uterus was lying high up, and the cervix could hardly be touched by the finger. It was decided not to interfere with her condition, and she was allowed to carry on to full term.

She had no morning sickness, no albuminuria, and her chief complaint was backache. As there was no space in the right hypochondrium, where the ribs rested on the iliac crest, the uterine body at first occupied the left half of the abdominal cavity, later it became anteverted and almost fell out of the abdomen. From the fifth month onwards the patient lay in bed day and night; her uterus was placed on special pillows beside her. There was complete atony of the muscles of the abdominal wall, and special care had to be taken to carry the uterus when the patient left the bed.

On November 25th, 1928, when she was 8½ months pregnant, labour pains started at 4 p.m. I was sent for at 11 p.m., and at 1 a.m. I performed Caesarean section at Nell Lane Hospital and delivered her of twins. There was no difficulty in removing the two placentae, which were joined. There was no undue haemorrhage, the contraction of the uterine muscle being remarkably good in spite of its distension. She made an uninterrupted recovery, and was discharged from the hospital in three weeks' time. The babies weighed 3 lb. 10 oz. and 3 lb. 12 oz., which is very remarkable in view of the fact that the mother weighed only 5 st. before she became pregnant, and her height was 4 ft. 5 in.

To-day the children are remarkably healthy. They weigh 1 st. 13 lb. and 1 st. 11 lb., and have suffered from no illness except a mild attack of bronchitis. They have been brought up on a patent food.

M. R. SONI, B.A., M.B., Ch.B.Ed.

Withington, Manchester.

* From the Courtauld Institute of Biochemistry, Middlesex Hospital, London, W.1.