

second stage of labour could be treated by forceps extraction, and lactation should be suppressed. If it would give her confidence the patient might also have psychiatric supervision during pregnancy and the early puerperium. Prompt and expert treatment of tensions and minor irrationality in the days following delivery can prevent more serious developments.

## REFERENCE

- <sup>1</sup> Martin, Mary E., *Brit. med. J.*, 1958, 2, 773.

## Different Sites for Different Vaccines

**Q.**—*The recommended schedule for immunization against infectious diseases<sup>1</sup> states that the third poliomyelitis and the third diphtheria-pertussis-tetanus injections should be given between 15 and 21 months. Some authorities have suggested that these two injections could be given at the same visit. Likewise at school entry the fourth poliomyelitis and diphtheria and tetanus injections are required. These two could be given at the same visit. Is it advisable that these dissimilar vaccinations should be done at the same time, and, if so, should two different injection sites be selected, or could the same site be used for both injections by merely manipulating the needle so as to increase the distance between the two injections so far as possible? The disadvantage of increasing the number of visits is that there is a greater likelihood of the schedule not being completed.*

**A.**—Polio vaccine and either triple vaccine (DTP/Vac) or diphtheria and tetanus vaccine (DT/Vac) may be given at the same visit but not at the same site; they should be injected into opposite arms. It is inadvisable to administer the two vaccines at neighbouring sites by manipulation of a needle left *in situ*: there could be incompatibility of the respective preservatives in the vaccines and a consequent reduction in the immunological response. Apart from the undesirability of having two vaccines injected in close proximity there is the possible danger, in manipulating the needle and changing syringes, of introducing sepsis. If, as seems likely, oral polio vaccine is made available the problem may be simplified by injecting triple vaccine or DT/Vac at the same time as polio vaccine is given by mouth.

## REFERENCE

- <sup>1</sup> *Brit. med. J.*, 1961, 2, 763.

## Hormones in Pregnancy Diagnosis

**Q.**—*Are there any dangers in prescribing oral oestrogen/progesterone compounds for the early diagnosis of pregnancy?*

**A.**—Although their results are not always reliable there is no danger in prescribing these compounds as a clinical test for pregnancy. They will not disturb an early pregnancy if such is present, and if the directions are followed and the treatment continued for not more than two or three days the hormones are unlikely to have a significant ill effect on either mother or foetus.

## Enuresis Associated with Spina Bifida

**Q.**—*Is it known what percentage of cases of enuresis are associated with spina bifida?*

**A.**—The simple answer is that it is not known. True incontinence due to leakage through an atonic bladder neck or to overflow from a chronically obstructed and distended bladder may be due to neuromuscular lesions associated with spina bifida, but it is assumed that the question here refers to simple nocturnal enuresis and to spina bifida occulta without any obvious neurogenic disturbance.

Most urologists consider that there is no relationship between nocturnal enuresis and spina bifida occulta, and although many attempts have been made to estimate the percentage of cases of enuresis which also have spina bifida occulta I do not know of any report which is conclusive. It should be remembered that about one-third of all routine

radiographs covering the lumbo-sacral area show some defect in closure of the laminae—and this is greatly in excess of the number of cases of enuresis.

## NOTES AND COMMENTS

**Recording Foetal Heart.**—Drs. F. I. POWELL and M. HOPKIN-THOMAS (Garnant, Carms.) write: With reference to your "Any Questions?" column of December 16 (p. 1659), dealing with the recording of foetal hearts, we would like to inform your questioner that Philips Electrical Ltd. have produced an apparatus known as the "cardiophon" suitable for the reproduction of heart sounds in utero. This machine gives a loud audio signal through a built-in speaker at a frequency range of 470 to 600 c/s. These heart sounds can be fed into the "cardiolux" E.C.G. and quite reasonable tracings obtained; however, the plug-in jacks on the limb leads of the cardiolux are a little small for the E.C.G. sockets on the cardiophon panel. We gather that the latest Philips E.C.G. machine (the "cardiopan") has correct diameter plug-in jacks that will fit the cardiophon sockets. We have had the opportunity of using this machine for the recording of foetal hearts through the kindness of the manufacturers over the past three months. The price is a little prohibitive for general practice (around £260) and the present model has some niggling operational faults of a minor constructional nature. It is very sensitive, sometimes too sensitive; foetal movement, patient movement, or speech will often be picked up as a loud screech. We were interested to note that a critical level of pregnancy duration of 20 weeks or so was needed for a definite confirmation of foetal heart sound.

Dr. M. WOOD (Sanderstead, Surrey) writes: You may be interested in a paper<sup>1</sup> which I read with Mr. Alistair Gunn at a meeting of the Royal Society of Medicine in November, 1952, on the subject of amplification and recording of foetal heart sounds. The electrical circuitry was published in *Electronic Engineering*.<sup>2</sup> I subsequently found that an excellent foetal electrocardiographic tracing could be obtained by using an Edison-Swan encephalograph apparatus. The trace from this could be displayed simultaneously on a double beam oscilloscope with that of the foetal heart sound, using one trace for foetal electrocardiograph and the other for the foetal sound, and by employing a common time base the trace of one appeared immediately above the other. The maternal electrocardiograph did break through a little, but there was no other interference, and from the direction of the wave form of the foetal electrocardiograph the lie of the foetus could be determined. It was found that the encephalograph was quite unsuited for foetal heart sound recording and no result could be obtained in this sphere as opposed to those for electrocardiographic recording.

OUR EXPERT replies: Foetal phonocardiography and foetal electrocardiography present two separate problems. Any good phonocardiograph of the type available commercially to-day can be used to record the foetal heart sounds. Foetal electrocardiography, however, presents a special problem owing to the high sensitivity required to record the foetal R wave, which at the maternal body wall is only of the order of 10-100 microvolts. This necessitates one hundred times greater amplification than is given by the standard electrocardiograph. An electroencephalograph can be successfully adapted to make this recording, as your correspondent points out.

## REFERENCES

- <sup>1</sup> Gunn, A. L., and Wood, M. C., *Proc. roy. Soc. Med.*, 1953, 46, 85.  
<sup>2</sup> Wood, M. C., *Electronic Engineering*, 1953, 25, 90.

**Correction.**—Since the lifting of purchase tax on "moditen" the price of 100 0.25-mg. tablets is 8s. 3d. and of 60 ml. elixir 8s. 9d. instead of 10s. 6½d. and 11s. 2d. (*Journal*, December 23, 1961, page 1704).

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