of gonadotrophin pointed to a pituitary origin for the testicular hypoplasia. In the cases under review, not only has the eunuchoidism to be accounted for, but also the identical skeletal deformity and the mental retardation, which is uncommon in eunuchs, who are usually of normal or above normal intelligence. The three abnormalities may be explained on a single basis if the concept of a degeneration of unknown aetiology in the parental germ plasm is accepted. If the cause of the defect be a matter of heredity in the germ cells, the monovular twins should be alike—either both normal or both defective (Macklin, 1936). It is probably significant that the twins were the last of 11 pregnancies, and at the time of their birth the ages of the father and mother were 44 and 46 years respectively.

The absence of colour-blindness and anosmia from our patients strengthens the belief that the condition has arisen sporadically, as Kallman *et al.* (1944) concluded that these tended to be associated with eunuchoidism only when hypogonadism appeared as a familial trait.

Summary

Eunuchoidism in identical twins is described, together with mental retardation and congenital fusion of the thoracic vertebrae.

Reasons are advanced for the belief that the twins are uniovular and that the condition has arisen sporadically, and the opinion is also expressed that the primary cause for the abnormalities lies in an unknown degeneration of the parental germ plasm.

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The National Old People's Welfare Committee, now to be called the National Old People's Welfare Council, "is now established as the accepted focus and centre to deal with the diverse and often difficult problems relating to the welfare of old people," said Mr. HAROLD MACMILLAN last year when he was Minister of Housing and Local Government. The *Progress Report* for 1954 shows that, while the main work of the council in co-ordinating the efforts of both voluntary and government bodies working for old people has continued satisfactorily, other schemes have also advanced. Training courses for voluntary and paid workers, including one for matrons of homes, have been developed. In Birmingham alone 310 voluntary visitors visited 1,735 old people regularly. The King George VI Foundation gift of £80,000 has been used to build new clubs or improve those existing. By September, 1954, 5,000 social clubs for the elderly were reported to exist. A building society has opened a home for the mentally frail in London, and many accommodation problems have been dealt with; interest in boarding-out old people as pioneered in Plymouth and Exeter in 1952 has revived. The council has sponsored several publications to educate the public on the problems of the elderly and how they can best be tackled.

PROLONGED PREGNANCY

BY

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A prolonged pregnancy may be defined as a pregnancy which continues for more than 14 days after the expected date of confinement provided that the estimation of this date is accurate. It occurs with relative frequency in lower animals, and most obstetricians would agree that it also occurs in human species. Many authentic cases have been published, and as examples the cases of Hendry (1921), Wells (1948), and Smith (1951) may be mentioned.

By definition the diagnosis depends upon an accurate estimate of the expected date of confinement. This is obtained by calculation based on Naegele's rule, and the fallacies of this calculation are such that it is difficult to decide in any given case whether pregnancy is really prolonged or whether the calculation is in error. The intelligence of the patient, her accuracy of observation, and the regularity of her menstrual cycle all help in reaching a decision. The size of the uterus in early pregnancy and the date of quickening are also useful aids. In retrospect the weight of the baby at birth may be used as a check on the accuracy of diagnosis. An investigation was undertaken, utilizing these aids to diagnosis, in order to discover the incidence of prolonged pregnancy and the pathological significance of the condition.

The Investigation

A clinical investigation is more satisfactory if all cases are supervised personally, but an investigation into prolonged pregnancy requires such a large series that personal supervision is impossible. Most published reports deal with cases which have been collected from hospital records, a method which has obvious disadvantages. In an attempt to overcome these disadvantages an investigation based on personal interview was undertaken. Approximately 6,000 women were interviewed by me during 1953 and the early part of 1954. These women were patients in the Jubilee Maternity Hospital or the Royal Maternity Hospital, Belfast, and the interviews took place during the first week of the puerperium. The series was consecutive, excluding holidays, and the interviews were continued until 5,000 case records had been obtained.

It will be noted that approximately one in six cases were excluded from the series, but it must be emphasized that these exclusions were made before the fate of the child had been ascertained. The reasons for exclusion were: (1) A fabrication of the "dates" to agree with a marriage early in pregnancy. (2) An uncertain estimate of the date of confinement due to (a) pregnancy commencing during lactation, or (b) prolonged or irregular menstrual cycles, or (c) lack of ordinary intelligence on the part of the patient.

If the duration of pregnancy is being investigated an interview during the first week of the puerperium has many advantages. Firstly, the patient retains a clear knowledge of the date of her last menstrual period, the date of quickening, and her menstrual history prior to pregnancy. Secondly, her case records are available to furnish information about the size of the uterus at various stages in pregnancy. Lastly, the date of confinement, the weight of the child, and the outcome are known. Information which has been obtained in this way may be criticized on the grounds that, as delivery has occurred, the patient may tell her story accordingly. It

was felt, however, that patients were not influenced by their knowledge of the date of confinement, and as the fate of the child was the last question at each interview the results were not affected by any desire to accentuate or minimize the lethal effects of prolonged pregnancy.

Average Duration of Pregnancy

There were 4,389 patients who started spontaneously in labour with single vertex presentations. In each case the estimated date of confinement was calculated by Naegele's rule, and the accuracy of this date was checked by as many means as the patient and her clinical notes could provide. The actual date of confinement was compared with this estimated date and the discrepancy was calculated. A graph (Fig. 1) was prepared to illustrate the results—this deals with

FIG. 1.—Onset of labour in 3,989 cases in which labour started within three weeks of E.D.D.

3,989 patients who started in labour within three weeks of the estimated date of confinement. Fig. 1 shows that there was a gradual increase in the number of confinements as the estimated date approached, and the peak persisted for approximately seven days thereafter.

The findings suggest that the common practice of calculating the expected date from the last rather than the first day of the menstrual period has something to commend it: a considerable number of patients thus escape the mental anxiety and the rigours of castor oil which so often accompany the 41st week of pregnancy.

The age and parity of patients in this series had no influence on the time of onset of labour, thus confirming the views of Hotelling and Hotelling (1932) and Gibson and McKeown (1950).

Fig. 1 corresponds very closely with the graph of Speitkamp (1937), who investigated 14,078 hospital cases. This similarity was a disappointment to me, as it suggests that my personal approach added nothing to the accuracy obtained by a perusal of hospital records.

The results are considered on a percentage basis in Table I. It will be seen that 53.1% of patients were delivered

TABLE I.—Onset of Labour

	Days Before E.D.D.				E.D.D.	Days After E.D.D.				Total No.
	22+	21-15	14-8	7-1		1-7	8-14	15-21	22+	
No. of cases	323	207	490	977	176	1,179	714	246	77	4,389
%	7.3	4.7	11.2	22.2	4	26.9	16.3	5.6	1.8	
Breech (%)	21.6	1.5	10.9	21	5	20.3	15.2	1.5	3	138
Twins (%)	40.1	9.9	10.9	13	1.1	16.3	5.4	2.2	1.1	92

in the 40th or 41st weeks, a figure which corresponds closely with the 49.5% reported by McKiddie (1949). Prolonged pregnancy occurred in 7.4%, and this corresponds almost exactly with the findings of Clayton (1941) and Rathbun (1943). Pregnancy was prolonged for more than three weeks in 1.8%, as compared with 0.65% (Fruhsholz and Richon 1940) and 3.8% (Burger and Korompai, 1939). Kortenover (1950) reports a series of 13,000 consecutive deliveries in Holland, with 13.53% of the patients going more than 14 days and 8% more than 20 days beyond the estimated dates of confinement. From experience gained during the present investigation it is felt that such high percentages must result from the inclusion of cases with prolonged menstrual cycles. It is generally accepted that ovulation tends to occur 14 days before the onset of menstruation rather than 14 days after the onset of the previous menses, the event upon which Naegele's calculation depends. If the menstrual cycle is prolonged there is therefore an apparent but not a real increase in the duration of pregnancy, a point emphasized by Reynolds (1938).

In Table I percentages dealing with twin pregnancy and breech presentation have been included. As expected, there is a tendency to premature labour in twin pregnancy, 40.1% being delivered more than 21 days before the estimated date. The same tendency is apparent to a lesser extent with breech presentation, but it is probable that the breech presentation is the result of premature labour rather than the cause of it.

Relationship Between the Menstrual Cycle and the Duration of Pregnancy

All patients supplied details about their menstrual history, and the opportunity was taken to test the contention of Jolly (1928) and Seager (1953) that the duration of pregnancy is related to the length of the menstrual cycle. Knaus (1949) and Bartelmez (1953) have stressed the irregularity of the "regular" menstrual cycle; this irregularity was very apparent in the present series, particularly among patients who stated that they menstruated once a month. Some patients had regular cycles of 26, 27, 29, or 30 days, with diary entries as supporting evidence. Such cases, 245 in number, were utilized in the preparation of Table II pro-

TABLE II.—Relationship Between Menstrual Cycle and Pregnancy

Average Cycle (Days)	No. of Cases	Average Week of Onset of Labour	Estimated Week of Onset
26	62	41	41 (286 days = 11 cycles of 26 days)
27	73	40	39 (270 " = 10 " " 27 ")
29	54	41	42 (290 " = 10 " " 29 ")
30	56	41	39 (270 " = 9 " " 30 ")

vided that, in addition, labour began spontaneously within 21 days of the estimated date of confinement. The average week in which confinement occurred was compared with the average calculated on the basis that labour followed a certain number of completed cycles. In this small but accurate group of cases there is no convincing evidence that the length of the menstrual cycle has any influence on the duration of pregnancy.

Foetal Mortality

There were 248 foetal deaths, and in Table III these have been correlated with the week in which they occurred. It will be seen that the foetal mortality is minimal during the 41st and 42nd weeks. There is a double increase in the 43rd week and a triple increase subsequently. This bears out the findings of Gibberd (1952), Clayton (1953), and Walker (1954), and suggests that prolonged pregnancy has a pathological significance justifying the use of the term "post-maturity." It will be noted that in Table III the foetal mortality included neonatal deaths occurring within

TABLE III.—*Foetal Loss*

	Days Before E.D.D.				E.D.D.	Days After E.D.D.				Total
	22+	21-15	14-8	7-1		1-7	8-14	15-21	22+	
Total cases	446	248	563	1,076	195	1,252	757	263	87	4,887
Foetal loss*	119	14	•18	33	5	26	15	12	6	248
% lost	26.7	5.6	3.2	3.1	2.6	2.1	1.9	4.8	6.9	5.1
								5.1		

* (a) The foetal loss includes neonatal deaths within 12 hours of birth. (b) Twins are excluded. (c) Cases of intrauterine death are included in the week in which death occurred.

12 hours of delivery. As many patients were interviewed on the day after delivery, later neonatal deaths were excluded—indeed, most of the neonatal deaths occurred within a few minutes of delivery, resuscitation having failed to establish respiration.

Smith (1951) has drawn attention to the difficulty of rearing the post-mature infant, and Clifford (1954) supported this view. The latter gave the following reasons for this difficulty: (a) a reduction in the quantity of liquor amnii and vernix caseosa leads to cracking of the skin and increases the risk of neonatal infection. (b) A reduction in placental efficiency leads to loss of weight, meconium staining, and attempts at intrauterine respiration. The latter causes hyaline membrane formation with a tendency to neonatal atelectasis.

It is possible, therefore, that the foetal loss attributable to post-maturity is greater than that shown in Table III, although, as an obstetrician, I have the impression that the post-mature baby causes no more anxiety than any other baby after respiration has been satisfactorily established.

Death *in utero* is often followed by a considerable interval before labour starts, and this may produce an apparent aggravation of the post-maturity problem. Clifford, Reid, and Worcester (1951) reported a foetal mortality of 11.4% in confinements after the 300th day, but more than half these deaths occurred at unstated intervals before the onset of labour. To avoid this difficulty, intrauterine deaths have been assigned to the week in which they occurred and not to the week of delivery: it is felt that this gives a fairer picture of the post-maturity problem.

Why Does Post-Maturity Give Rise to Foetal Mortality?

It has been suggested by Malpas (1933) that a number of post-mature deaths result from foetal abnormality. However, in this series all abnormal babies had either died *in utero* or been born before the estimated date of confinement.

Ballantyne and Browne (1922), in an exhaustive article, stressed the excessive size of the post-mature foetus. They held that the increased foetal mortality was due to birth trauma, and, in the custom of that time, they advocated induction of labour at term to avoid the dangers of disproportion. Calkins (1948) and Mills (1953) suggested that foetal growth may cease after term, and that, as placental efficiency decreases, the baby may lose weight. Arnot (1942), Wrigley (1946), and McKeown and Gibson (1951) calculated the babies' weights in relation to their maturity, and the results tended to support this view. In the present series the average weights of babies were calculated, the investiga-

TABLE IV.—*Weight of Babies Born at Weekly Intervals Before and After E.D.D.*

	-21 Days	-14 Days	-7 Days	E.D.D.	+7 Days	+14 Days	+21 Days	All Over +21 Days
No. of cases	33	61	120	195	185	78	20	80
Av. weight in lb.	6.3	6.5	6.9	7.4	7.5	8.5	8.3	8.3

tion being limited to babies born at weekly intervals before and after the estimated date of confinement. The results are shown in Table IV.

There was a steady increase in the average weight weekly until the 42nd week and subsequently a slight drop. No post-mature baby was of excessive size, and, with two exceptions, disproportion was not regarded as a cause of foetal mortality. The exceptions both died as the result of unexpected difficulty in delivery of the shoulders, a risk which Casagrande (1939), Koff and Potter (1939), and Wrigley (1946) have emphasized.

In Table V another attempt has been made to assess the cause of foetal mortality. This table again emphasizes that trauma does not play a significant part in causing post-mature mortality. The majority have no obvious cause—

TABLE V.—*Foetal Loss (including trauma but excluding other obvious causes of death)*

	Days Before E.D.D.				E.D.D.	Days After E.D.D.				Total
	22+	21-15	14-8	7-1		1-7	8-14	15-21	22+	
No. of cases	353	242	554	1,061	194	1,245	754	260	87	4,750
Trauma	5	1	2	7	1	1	2	1	0	20
% lost	1.4	0.4	0.4	0.6	0.5	0.03	0.3	0.38	0	0.4
Doubtful cause	21	7	7	11	3	18	10	8	6	91
%	5.9	2.9	1.4	1	1.5	1.5	1.3	3	6.9	1.9

that is, they form a "mysterious" group. Gibberd (1952) and Clayton (1953) refer to this mysterious group and consider that death results from foetal anoxia. Walker (1954) has produced striking experimental evidence to support this view, and his work goes far to establish that the risk of post-maturity is the risk of intrauterine anoxia.

Accepting foetal anoxia as the reason for the foetal mortality associated with post-maturity, it is important to ascertain when the anoxia is likely to appear. In order to obtain information relating to this question a series of 564 stillbirths were investigated. These stillbirths occurred in the Royal Maternity Hospital, Belfast, during the years 1946-53 inclusive, and the details were obtained from hospital records. In Table VI the causes of death are shown. There

TABLE VI.—*Cause of Death in a Series of 564 Stillbirths*

Cause of Death	No. of Cases	Cause of Death	No. of Cases
Abnormal foetus	119 (21.1%)	Syphilis	7 (1.2%)
Toxaemia of pregnancy	105 (18.6%)	Diabetes	5 (0.9%)
Accidental haemorrhage	73 (12.9%)	?Before labour	88 (15.7%)
Prolapse of cord	21 (3.7%)	?In labour	79 (14.0%)
Placenta praevia	14 (2.5%)	?During delivery	53 (9.4%)

were a considerable number of "mysterious" deaths, and these were divided into (a) deaths before labour, (b) deaths in labour, and (c) deaths during delivery. A number of the deaths during delivery were undoubtedly due to trauma. However, the records and even the post-mortem findings were often inconclusive, and it was decided to include all traumatic deaths in the "mysterious" groups.

The cases were divided according to the maturity at the time of foetal death, and four histograms were prepared (Fig. 2). These histograms show the relative frequency of (a) death due to obvious causes, (b) death before the onset of labour, (c) death in labour, and (d) death during delivery. The histograms clearly demonstrate that as the maturity increases there is a relative reduction in the obvious causes of foetal death. In addition the risk of intrauterine death before the onset of labour is reduced. The histogram dealing with the post-mature group shows that intrauterine death in labour—that is, during the first and the early second stage—is of prime importance. A considerable proportion of foetal deaths also occur during the actual delivery, the

foetal heart being audible up to that time, or continuing after delivery without the successful establishment of respiration.

The investigation appears to confirm the following points: (a) post-maturity is responsible for a definite foetal mortality; (b) this mortality results primarily from anoxia *in utero*; and (c) the anoxia occurs mainly during the first and second stages of labour.

FIG. 2.—Causes of foetal loss in relation to maturity of foetus.

Discussion

The first problem associated with prolonged pregnancy is the diagnosis of the condition, and it is a mistake to consider all pregnancies which continue beyond the estimated date as post-mature. A regular menstrual history prior to pregnancy will underline the accuracy of Naegele's calculation provided that the cycle is not of more than 28 days' duration. The date of quickening may be used as an additional guide if the patient is able to name a definite date. Unfortunately, many patients are unable to remember this date or speak in general terms about feeling life in the fifth month, information which may be influenced by the patient's general knowledge and be of no value. I make a practice of asking all patients, during their first visit, to note the date on which they feel movements and to ensure that this date is incorporated in their clinical notes at their next visit. Thus an accurate date is obtained, and if pregnancy continues for more than five calendar months after this date there is a reasonable presumption that the pregnancy is prolonged. The size of the uterus in early pregnancy may help if a vaginal examination was performed personally and a careful record was made at the time.

In the assessment of a suspected case of prolonged pregnancy the size of the foetus is of value. Weight estimation *in utero* must be approximate, but if the foetus is obviously less than 7 lb. (3.2 kg.) the diagnosis of post-maturity should be revised. Wrigley (1946) noted the rigidity of the post-mature foetus and the diminution in quantity of liquor amnii which gave the impression that the uterus was "full of foetus." I have looked for these signs but have been disappointed in failing to elucidate them to my satisfaction. At one time much was expected of radiography as an accurate guide to maturity, but the size of the foetal skull and the times of appearance of ossification centres are so variable that little help is obtained by such examination.

When it is decided, after careful consideration, that a pregnancy is prolonged the problem of treatment arises. The obstetrician is faced with an anxious patient who is supported by her relatives in demanding action. He is aware of the risk of foetal death *in utero* and knows that, unfair as it may be, the patient will consider him responsible. Thus the stage is set for some form of intervention.

A medicinal induction may be tried, and has the merit of being reasonably safe. However, it causes a physical upheaval of considerable severity for the patient, and if it fails to start labour it aggravates her anxiety. I have formed the opinion that, anyway, a medicinal induction will not be successful unless labour is about to start; if this is true it

puts the patient to unnecessary inconvenience. I agree with Browne (1951) that the failure of a medicinal induction does not rule out a diagnosis of post-maturity.

Surgical induction is often employed, and Tennent and Black (1954) reported a series of 633 cases, induced seven days after the expected date, with the commendable foetal mortality of 0.9%. However, there is no method of ascertaining what the mortality associated with masterly inactivity would have been, and Temesvary (1952) found that the foetal mortality was actually increased by induction of labour for post-maturity.

There are certain disadvantages associated with surgical induction. Firstly, the patient may not be post-mature. In the series reported by Tennent and Black (1954) there were 11 babies weighing less than 6 lb. (2.7 kg.), and it is hard to believe that all these were post-mature babies. In the present series only 13 patients had a surgical induction for post-maturity, and one would expect that the diagnosis must have been very definite in these cases. Yet, in retrospect, it was clear that five of the babies were premature. Secondly, earlier in this paper it has been shown that the post-mature baby is mainly at risk in labour, particularly during the first stage. This risk must be increased if most of the liquor amnii has previously been drained away, and a previous induction is an unwanted complication if caesarean section has to be performed for foetal distress during labour. Thirdly, there is some risk to the mother following surgical induction. Soon after this series was completed a mother, admittedly in poor general health, was induced surgically because of post-maturity. Labour began about 40 hours later and within six hours mother and baby were dead owing to fulminant sepsis. Because of these dangers and the lack of a clear demonstration of any advantages, I am against induction of labour for post-maturity, and, in particular, deprecate its use as a placebo for the patient.

Having condemned induction of labour, what alternative have I to offer? Firstly, a second opinion about the case is of considerable benefit, and this, of course, applies especially to a patient who intends to have her confinement at home. A vaginal examination is an advantage, and is preferably undertaken in hospital, as at this stage in pregnancy full aseptic precautions are essential. If the head is engaged in the pelvis and the cervix is effaced the patient may be reassured and sent home to await the spontaneous onset of labour. If the head is still free and the cervix is not effaced, I am in favour of stretching the cervix, stripping the membranes from the internal os, and giving a hot vaginal douche. Patients should stay in hospital for 48 hours after this procedure, as there is some risk of infection following an immediate return home.

Secondly, x-ray visualization of the foetus is a help. With standard films the picture gives an idea of the foetal size and it excludes some of the abnormalities which could cause foetal distress during labour.

Lastly, the management of labour requires special attention, and for this reason post-mature confinements should be conducted in hospital. I am convinced that the main risk to the post-mature baby is during labour and that there is always the preliminary warning of foetal distress before death occurs. A careful watch must be kept for this distress, the foetal heart being checked every 10 minutes during the first stage and after every contraction in the second stage. Meconium staining must receive immediate attention, and if there is any reason to suspect foetal distress when the membranes are intact they should be ruptured in a search for meconium. During the conduct of a post-mature labour the operating theatre should be at immediate readiness, and if foetal distress occurs caesarean section should be undertaken at once unless forceps delivery can be easily effected. Babies have frequently inhaled quantities of tenacious liquor amnii before delivery, and endotracheal suction may be a life-saving procedure in these cases.

Those in favour of surgical induction of labour will decry this advocacy of caesarean section. However, giving approximate figures, post-maturity occurs in 7% of patients,

and in this group there is a foetal mortality of 5%. This means that foetal distress due to post-maturity may lead to four caesarean sections in 1,000 confinements, a figure which has been exceeded by several of the writers who advocate surgical induction of labour as the treatment of choice.

Summary

Case reports were obtained from 5,000 patients by means of a personal interview during the first week of the puerperium. These reports showed that in 53.1% of single vertex presentations labour began spontaneously during the 40th or 41st week of pregnancy. In 7.4% the pregnancy was prolonged for more than 14 days after the estimated date of confinement. There was no relationship between the length of the menstrual cycle and the duration of pregnancy, providing that the cycle was not unduly prolonged. There was an increase of foetal mortality to 5.1% if pregnancy was prolonged for more than 14 days after the estimated date of confinement. It is suggested that this mortality resulted from foetal anoxia *in utero*. By reference to a series of 564 stillbirths this foetal anoxia was mainly a risk occurring during the first and second stages of labour. Induction of labour did not appear to be the best means of combating this risk. A policy of "masterly inactivity" is advocated until labour starts spontaneously. Then the strictest watch for foetal distress is indicated, with resort to caesarean section at once in cases in which it occurs.

I am indebted to the honorary medical staffs of the Jubilee and Royal Maternity Hospitals, Belfast, for permission to interview their patients. I wish to acknowledge the encouragement and help which Professor C. H. G. Macafee has given me throughout this work.

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The United Nations is to publish an unabridged record of the International Conference on the Peaceful Uses of Atomic Energy, held at Geneva last month, the Secretary-General has announced. The English language edition will be ready early in 1956. Orders may be placed with any United Nations publications sales agent. The prepublication price for the full series of 16 volumes is £39. Mimeographed copies of most of the individual papers may be ordered through Her Majesty's Stationery Office at 1s. 9d. each.

FOETAL DEATHS FROM ANTENATAL ANTICOAGULANT THERAPY

BY

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The incidence of thrombophlebitis in pregnancy is exceedingly low. Hallum and Newham (1951) reported only five cases of this condition in 13,144 deliveries—an incidence of 0.037%. F. J. Browne (quoted by Donaldson, 1950) saw only three cases in 10 years—an incidence of about 0.025%. Other published figures give an incidence of from 0.000001 to 0.1% (Westmann, 1936). Since, however, considerable success has accompanied the use of anticoagulants in general thrombotic disease and especially in post-partum thrombophlebitis (Davis and Porter, 1944; Barnes and Ervin, 1946; Stallworthy, 1954), their use in the ante-partum variety will inevitably have to be considered whenever a case is encountered.

In spite of experimental data which indicated that damage to the foetus might result from the use of anticoagulants in pregnancy (Quick, 1946) and evidence that foetal haemorrhage occurs in cattle who eat spoiled sweet clover (Schofield, 1924; Roderick and Schalk, 1931), there have been reports of the successful use of anticoagulants in pregnant women (Mansell, 1952; H. P. Wright, 1951; I. S. Wright, 1951). These authors think that there are good reasons for their use so long as adequate control of the prothrombin index is undertaken.

The following case records are reported to indicate that foetal catastrophes may occur even when the maternal prothrombin times are apparently controlled.

Case Histories

The mother was aged 39. Her last menstrual period was on January 11, 1952. The expected date of delivery was October 18, and the actual date October 17. She had had rheumatic fever at 6 years and scarlet fever at 10. She had had three previous pregnancies: (1) 1934, full-term normal delivery, 6 lb. 12 oz. (3.1 kg.), well. (2) 1947, six weeks premature delivery, 4 lb. 4 oz. (1.9 kg.), well. (3) 1949, miscarriage at three months.

During the early months of the present pregnancy there was a marked increase in the varicosity of her leg veins, and on July 14, 1952, she was admitted to hospital because of severe varicose eczema of the left leg. This responded satisfactorily to rest in bed and Lassar's paste. A twin pregnancy was diagnosed at this stage.

Although the varicose veins remained quite prominent the eczema stayed under control, but on October 2 she presented with all the signs of a deep femoral thrombosis of the left leg. She was promptly readmitted to hospital. Treatment included ethyl biscoumacetate 200 mg. immediately, followed by 100 mg. twice daily. On October 4 the dosage was increased to 100 mg. eight-hourly, and this amount was continued until October 9, when, because of macroscopic haematuria, the drug was stopped. The prothrombin time was measured daily by the one-stage method of Quick, and the Table shows the results up to, and after, the cessation of treatment.

On October 16 spontaneous labour started, and after a first stage of 4 hours 50 minutes and a second stage of 1