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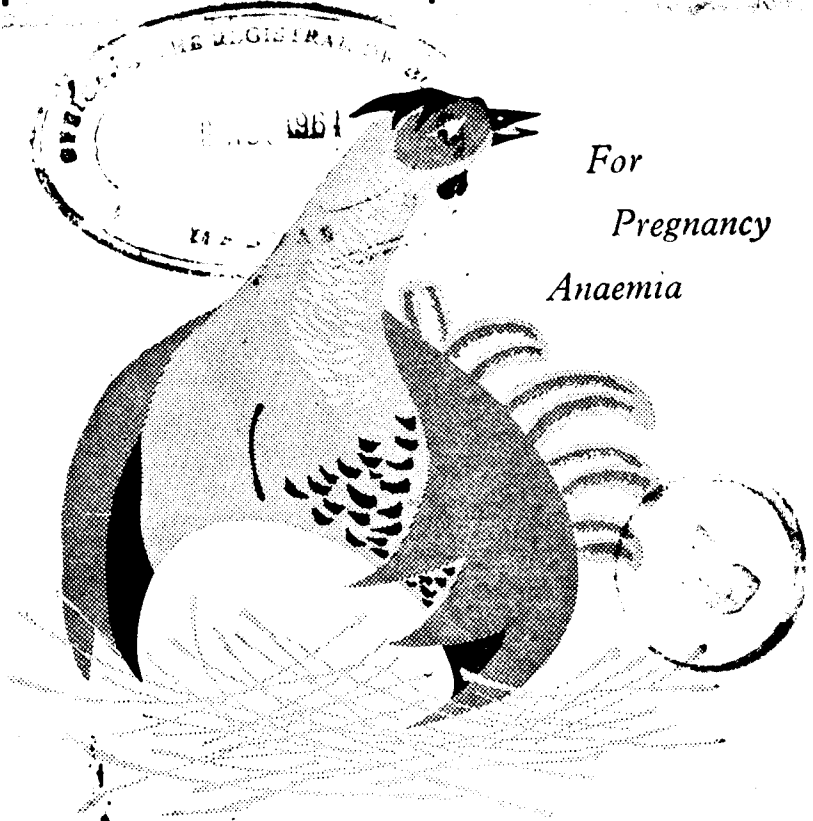
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JOURNAL OF THE MADRAS STATE BRANCH INDIAN MEDICAL ASSOCIATION
(With which is incorporated the "Miscellany")

Vol. XXVII

April 1961

No. 10



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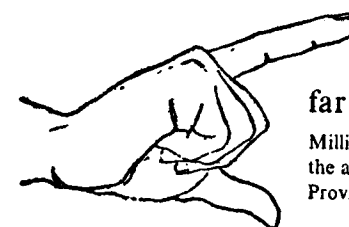
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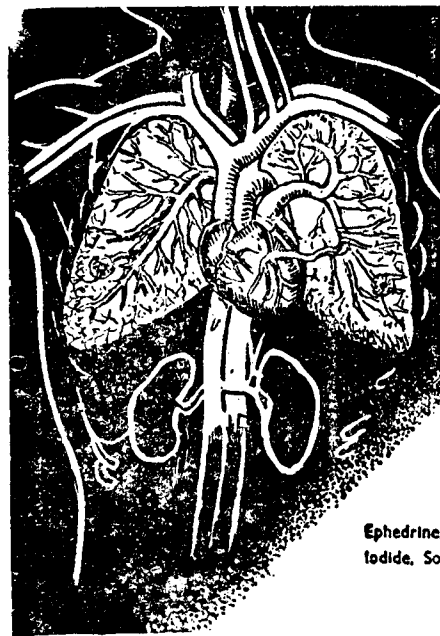
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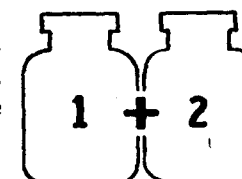
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JOURNAL OF THE MADRAS STATE BRANCH OF THE INDIAN MEDICAL ASSOCIATION
 (WITH WHICH IS INCORPORATED THE "MISCELLANY")

Vol. XXVII

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OBSTETRICS THEN AND NOW *

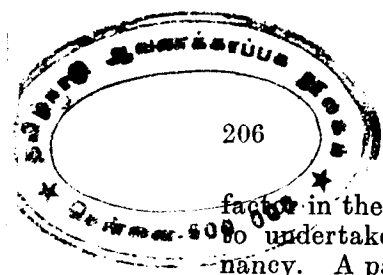
O. FRANCIS, M. D., D. G. O.,
 Professor of Obstetrics and Gynaecology, Madurai Medical College,
 Obstetrician and Gynaecologist, Government Erskine Hospital, Madurai.

Obstetrics marches on. When I recall to memory the teachings and practice of obstetrics about 23 years back, in 1938, when I worked as an House Surgeon in the Government Hospital for Women and Children, Egmore, Madras, and compare them with those existing now, I find a marked contrast. It is true, as Churchill once remarked, that "The longer you can look back, the further you can look forward". The maternal and perinatal mortality can be taken as delicate indices of the efficiency of a maternity service, and this in turn depends upon the efficiency of the ante-natal, intra-natal and post-natal care existing at the time. This period of 23 years has seen the birth and growth of chemotherapy and anti-biotics, the establishment of organised blood transfusion service, and improved methods of anaesthesia and obstetric management. Further, there has been an integration of psychological insights in obstetric practice. Clinical experience has confirmed the need

and value of psychosomatic approach in the management of obstetric cases. As a result of all these, the maternal and perinatal mortality have been greatly reduced now.

Ante-natal care has been receiving increasing attention in recent years and has now become a challenge to preventive medicine. It is now realised that the psychological status of the patient can, to a great extent, determine the success or failure of her prenatal course, that environmental, socio-economic and emotional factors have to be given paramount importance and that it is essential to evaluate the emotional status of the patient as early in pregnancy as possible and to establish an emotional stabilisation, as emotional instability can cause harm to both mother and child by initiating faulty nutrition. The nutritional status of the patient at the beginning of pregnancy has been neglected in the past and it has now become the most important

* Lecture delivered on 11th March, 1961, at the Indian Medical Association, Madurai.



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factor in the evaluation of her ability to undertake the hazards of pregnancy. A patient whose nutrition is adequate will have a more successful and uneventful pregnancy, labour and puerperium. The obstetrician can do a lot towards the emotional wellbeing of the patient, but for this he needs the ability to understand his patient, the ability to listen to her sympathetically, and the ability to guide her. A pregnant woman is not to be considered as a mere ambulant pelvis, nor a parturient woman as a contracting uterus lying between two bed sheets. It must be remembered that she is above all, a human being, with all the emotions, more so during pregnancy and labour-times of the greatest stress and strain for a woman. The obstetrician must gain the confidence of the expectant mother and dispel from her the fear complex of pregnancy and labour. The care of the emotions will have a most salutary influence on the patient as well as on her labour. In recent years, in several antenatal clinics, pregnant women are taught the art of physical relaxation and the importance of deep and controlled respiration, and she is asked to put these into practice in the first stage of labour, to have a painless childbirth. Perhaps, more useful than this is the presence by her side at the time of labour of the same obstetrician who has been looking after her during pregnancy and in whom she has got confidence.

External pelvimetry is no longer considered as so important as in the past. Now, more attention is paid to detect whether there is cephalopelvic disproportion. It is now a rule to make a thorough pelvic examination at the end of the 37th week in all primis and in mults with bad obstetric history, and in suspected cases of disproportion, radio pelvimetry has

been found useful. Soft tissue radiography is being done for detecting placenta praevia.

The concept of physiological anaemia of pregnancy has been questioned in recent years by several workers, who have shown that oral iron therapy can maintain the Hb. concentration in pregnancy and this has led to the practice of routine Hb. estimation in pregnancy and iron therapy.

It has been shown that an excessive gain in weight in pregnancy is the cause of several complications, and increasing emphasis is being laid on the importance of curtailing the total increase in weight to 20 lbs. and, according to Dieckmann, 18 lbs., and for this, he advocates a diet of 1800 calories. The importance of salt restriction is also being emphasised in this regard.

The advances made in the diagnosis and treatment of syphilis and early and effective treatment of pregnant women have practically eliminated the whole field of congenital syphilis. We have now in the V.D.R.L. slide test, a simple, reliable test for syphilis with a high sensitivity and specific rating. Routine serological screening of pregnant women is being done in most of the ante-natal O. Ps., and this has shown about 6% positive reactors, and adequate penicillin therapy has resulted in more than 90% normal full term live infants. At least 2 blood tests should be done in a pregnant woman, one early in pregnancy, and the other late in the 3rd trimester. It has been shown that treatment of the mother, even when given immediately before delivery, offers some protection to the baby. In pre-penicillin days, it was believed that once a woman had syphilis, whatever the treatment she had, and even when clinically free and

serologically negative, she was still capable of giving birth to a syphilitic child. Hence, it was enjoined that she should receive antisymphilitic treatment during all her pregnancies. Now, it is an accepted fact that treatment is not necessary for a syphilitic woman during all her pregnancies, if she had received previously adequate treatment with penicillin, and shows no clinical signs of active infection and she is serologically negative. In cases where the woman had the treatment, it is essential to examine the husband clinically and serologically, and if found positive, to give adequate treatment immediately, otherwise a well treated wife in early pregnancy may get reinfected during the later months with disastrous consequences to the foetus in utero. This sort of ping-pong syphilis is not uncommon. It is now well known that infection is transmitted to the foetus from the syphilitic mother through the placenta, but the spirochaete does not cross the placental barrier until after the 20th week and that the death of the embryo and its subsequent expulsion results after several weeks of syphilitic infection. Consequently, abortions before the 5th month are not generally due to syphilis. Stillbirths and neonatal deaths are more frequent in prenatal infections of the foetus.

The management of the pregnant tuberculous woman has undergone a change. This has been due, firstly, to the marked improvements seen in these cases with modern therapy with streptomycin and P. A. S. or I. N. H. and secondly, to the general appreciation of the fact that these cases, if properly treated, run the same course as they do in the non-pregnant patients with a comparable lesion. A better understanding of the changes in the cardiovascular system

during pregnancy has led to improvements in the management of cardiac patients during pregnancy, labour and puerperium, resulting in a greatly lowered maternal mortality. Although ante-natal care has not appreciably diminished the incidence of pre-eclampsia, it has greatly diminished its harmful effects by early detection and early and improved methods of treatment. In erythroblastosis in pregnancy, the modern trend is neither to do a Caesarean section, nor induce premature labour, but allow the pregnancy to go to term and have spontaneous delivery and to treat the infants with exchange transfusion with Rh negative blood of its own group or "O" group, except perhaps when the woman had a previous hydropic still-birth and the husband is homozygous.

Management of obstetric emergencies has undergone marked changes.

Forceps Deliveries :

In those days, forceps were applied only for definite indications, viz., foetal or maternal distress. This was because of the dread of puerperal sepsis, which followed most of the operative deliveries and which had a high mortality then. In an attempt to avoid forceps, labour used to be unduly prolonged with consequent severe complications to the foetus like intracranial haemorrhage and to the mother like sepsis, trauma and post-partum haemorrhage. The dread of infection and shock in Caesarean sections, especially when done late in labour, made obstetricians to avoid it and do high forceps and if this failed, craniotomy used to be done. Now forceps is, as a rule, avoided, if the greatest diameter of the head has not gone through the brim. In these cases, a careful vaginal examination is made; and previously

unrecognised mild cephalo-pelvic disproportion detected, intra-partum radiography also done where facilities are available, and lower segment Caesarean section done with safety to the mother and child. In cases where the head has come on the perineum, if no progress is made for half an hour, even though no maternal or foetal distress is evident, prophylactic forceps delivery is now practised. This is because it has been found that if the head is allowed to remain on the perineum for a long time, it is likely to cause damage to the foetal head and also predispose to genital prolapse. As a result of this changed trend in obstetric practice, the number of forceps deliveries have greatly increased, but it is amply rewarded by a marked decrease in perinatal mortality. Another trend in modern obstetric practice is a trial of forceps for slight cavity disproportion. In this, the obstetrician makes a tentative pull with the forceps with the declared intention of doing a Caesarean section, if it fails. It was not rare in those days to see doctors struggling with the forceps in the fear that it may become a failed forceps and involve their reputation. It should be realised that even the best obstetrician can make a mistake occasionally, and that failure to deliver with forceps is not so great a mistake, as failure to recognise the defect at an early stage. Every obstetrician can recall many cases in which he wishes he had done a Caesarean section, and very few cases in which he regrets having done a Caesarean section.

Failed forceps was fairly common in those days, but now, due to a more efficient ante-natal and intra-natal supervision and pelvic radiography, it is a rarity.

Breech Deliveries :

The successful conduct of a breech delivery is an eloquent testimony to the capability of an obstetrician. De Lee in 1937 wrote, "Let me watch a man conduct a breech case and I can give you his obstetric rating". In those days, about 70% of breech deliveries were effected by extraction under general anaesthesia. Now, it is an accepted fact that assisted breech delivery gives better results than extraction, and in a breech case, once vaginal delivery is decided, the breech is allowed to be borne normally; a generous episiotomy is made when the breech distends the perineum especially in a primi, and subsequently assistance is given only in the delivery of the shoulders and the after-coming head. Extraction is undertaken only when there is a definite indication like foetal or maternal distress. It was formerly believed that the usual cause of foetal death in breech delivery was asphyxia caused by the pressure on the cord during delivery of the shoulders and the after-coming head, and consequently, the after-coming head used to be extracted as speedily as possible. Now it is well known that the most frequent cause of foetal death is intra-cranial haemorrhage due to tentorial tear resulting from a sudden excessive pressure on the after-coming head. Consequently, stress is no longer put on speed, but rather on the gentleness of manipulation. The force and direction of suprapubic pressure should be well controlled, the aim being to maintain flexion of the head and avoid intra-cranial trauma, and it should be exerted only towards the sinciput. Burns-Marshall's technique, or forceps is only used if there is any difficulty in the delivery of the after-coming head. By this changed

trend in breech deliveries, the perinatal mortality has been greatly reduced.

Internal Podalic Version :

Now, the indications for this operation are usually shoulder presentation with the membranes intact or just ruptured with enough liquor amnii and cervix at least 3/5th dilated and for a second of twins. In those days, in addition to these, it was not infrequently done for an unengaged head especially if high forceps was found difficult or failed. It had then a maternal mortality of about 10% and perinatal mortality of about 50%.

Caesarean Section :

In those days, its incidence was only about 1%. It was mostly classical and it had a mortality of about 10%. Now, the improvements made in the technique of the operation and anaesthesia and the easy availability of blood and anti-biotics to combat blood loss and sepsis respectively have made obstetricians to do Caesarean sections without fear and more often, the indications having been widely extended. Its incidence is now about 2% and mostly it is lower segment operation and the mortality has been reduced to less than 2%.

Rupture of the Uterus :

In those days, it was not infrequent and almost all cases in labour were treated conservatively by vaginal delivery, packing the rent and treating for shock and infection with a maternal mortality of over 75%. Hysterectomy was considered dangerous and usually avoided. When it was done, it had a mortality of about 80%. Now, as a result of proper ante-natal and intra-natal care and early diagnosis of cephalo-

pelvic disproportion and malpresentation and malposition and prompt and correct treatment, rupture of the uterus is rare. Treatment also has changed. All cases of complete rupture, or suspected rupture, where immediate easy vaginal delivery is not possible, are submitted to laparotomy and mostly hysterectomy and in rare cases, where the tear is small and clean, suturing the rent and sterilisation done. The prompt treatment of shock and collapse with massive blood transfusions and sepsis with antibiotics have reduced the maternal mortality to about 10%.

Ante-Partum Haemorrhage :

In those days, as soon as a patient was admitted, vaginal examination was at once done and attempts made to terminate pregnancy and control bleeding by artificial rupture of membranes, vaginal plugging, fractional doses of pituitrin, Willett's forceps, bipolar or internal podalic version. Glucose saline or gum saline alone were usually available to combat blood loss; conservative treatment was not at all practised. Now, the treatment has undergone remarkable change. If the baby is premature and bleeding is slight, an expectant line of treatment is adopted with absolute rest in bed, morphia, and sedatives. Vaginal plugging is condemned and vaginal examination is done only if the bleeding is severe, and that too, after starting blood transfusion and being ready for a Caesarean, if necessary. In placenta praevia, by following an expectant line of treatment and effecting delivery near term by artificial rupture of membranes followed in selected cases by Willett's forceps in the 1st and 2nd degrees, and Caesarean section in the 3rd and 4th

degrees, the foetal survival rate has been greatly increased and the maternal mortality greatly reduced. Caesarean section which was referred to as "the last resource of a great surgeon who has forgotten his obstetrical training" when it was first advocated by Lawson Tait in 1890, had been steadily gaining favour and is today considered as the treatment par excellence in placenta praevia. It is often done even in 1st and 2nd degrees, if the placenta is posterior or bleeding is profuse. In accidental haemorrhage, unless the bleeding has been slight, the foetus invariably dies before the patient comes under observation. In the revealed variety, if the patient is in labour, artificial rupture of the membranes is often enough, and if the uterine contractions are feeble and if there are no clotting defects, a pitocin drip of 2½ units in 500 c.c. of 5% glucose is given. If the bleeding is profuse and the woman is not in labour and os closed, Caesarean section is done. In the concealed and mixed variety, two complications weigh heavily in the obstetrician's mind viz., uncontrollable P. P. H. and anuria. There used to be several deaths from them in those days, but the causes of these were not known then. To-day, we know that the former is due to hypo or afibrinogenaemia, and the latter to symmetrical cortical necrosis of the kidneys and that both these depend on the degree of shock and the duration of uterine apoplexy and consequently, these patients are handled most gently, kept warm and quiet, a careful watch kept on the general condition and the state of the uterus every hour and tests for blood clotting done every 3 or 4 hours and if the uterus does not become active in 8 or 10 hours, or if there is any increase of pain and shock, or in the

size of the uterus, Caesarean section is done immediately. P. P. H. due to afibrinogenaemia is treated successfully with fibrinogen, or plasma preferably in double or quadruple strength, and blood transfusion to replace the lost blood. For anuria, bilateral splanchnic block with local anaesthetic has been found sometimes useful especially if done in the first 24 hours. In the past, much harm was done to these patients by forcing diuretic fluids which they were unable to excrete and which, therefore, accumulated in the tissues causing renal, cerebral and pulmonary oedema and cardiac failure. Now, fluid is limited to one litre, or even 600 to 800 mls. in 24 hours. A diet rich in carbohydrate and fat is found to depress endogenous and exogenous nitrogen metabolism, and based on these, Bull, Joecks and Lowe advocate the administration of 400-g of glucose, and 100-g pea-nut oil with acacia to emulsify and water to 1 litre as intra-gastric drip. This has been used with fairly good results. Penicillin is given in these cases, as infection is a common cause of death. In those days, in couvelaire uterus, hysterectomy was invariably done. Now, after Caesarean section, if the tone of the uterus is regained after application of hot packs and ergometrin injections, hysterectomy is not done.

Anaesthesia and Analgesia:

In obstetrics these have also undergone marked changes. In those days, chloroform or C2E3 mixture were the drugs used for operative delivery, whether vaginal or abdominal. Now, for abdominal delivery, nitrous oxide and oxygen is used, supplemented by ether, and in selected cases, local infiltration anaesthesia. Vaginal deliveries, especially low forceps, are

often done under pudendal block. It is now realised that there is a real danger of inhalation of stomach contents during anaesthesia late in labour and several deaths have occurred every year due to this, but often the cause of the death is overlooked and many are attributed to pulmonary oedema or obstetric shock. To minimise this risk, when it is thought necessary, there should be no hesitation to aspirate the stomach contents before operation. In these cases, it is advisable to place the patient on her side during the induction stage and roll her on to her back after vomiting has occurred or after satisfactory induction. If vomiting does occur, she must be quickly rolled on to her side and by means of a suction apparatus, the pharynx should be quickly cleared of food or fluid. As a sedative and analgesic, pethidine is being extensively used in prolonged labour with good results—100 mgms 1M which is repeated, if necessary, after 4 hours. Jeffcoate advocates the use of an I. V. drip containing 300 mgms of pethidine in one litre of 5% glucose saline.

Intravenous Oxytocin:

This has been another advance in obstetric treatment. It has been used with success in primary hypotonic uterine inertia, 2½ units of pitocin in 500 c.c. of 5% glucose; but cases must be carefully selected with no disproportion or other mechanical obstruction to easy delivery and a careful watch must be kept on the behaviour of the uterus and the condition of the mother and the foetus. It is not free from danger, as rupture of the uterus has occurred even in big institutions and with doctors nearby. In cases of pre-eclampsia, the modern trend is to terminate pregnancy after

the 37th week, even if there is no deterioration in the patient's condition because of the danger of intra-uterine death of the foetus and/or eclampsia occurring at any time and the risk of the development of residual hypertension is also more if pre-eclampsia is allowed to continue to term. In these cases, labour is induced by artificial rupture of membranes after stripping the membranes from their loose attachments to the lower uterine segment, if the cervix is ripe. If, however, the cervix is not ripe, i. e., long and closed, I. V. pitocin drip is first given once or twice to ripen the cervix.

Post-partum Haemorrhage:

In those days, it was common—about 5% and maternal mortality also was high—about 10%. Treatment was then by injection of pituitrin, continued massage of the uterus, vaginal and uterine packing, hot vaginal and intra-uterine douches. Saline was often the only thing available to replace the blood lost. Now, due to a better appreciation of the physiology of the 3rd stage of labour and its proper management, its incidence is much reduced and because of the easy availability of blood and powerful oxytocics like pitocin and ergometrin, the mortality also has been greatly reduced.

Manual removal of the placenta:

This was in those days considered a major operation, and it was avoided as far as possible, because of the high maternal mortality and morbidity following it. In the absence of bleeding, the placenta was allowed to remain in the uterus for hours and days and repeated attempts often made in vain to express a non-separated placenta. Now, the placenta is not allowed to remain in the uterus

for more than 1 hour, even if there is no bleeding; often it is removed manually after $\frac{1}{2}$ an hour, if an initial gentle attempt at expression fails after catheterisation. Manual removal of the placenta, if done promptly and proficiently, is a safe procedure. The danger comes in when it is done as a last resort after the patient has been going on with slight bleeding which is overlooked, or neglected, or after repeated *vigorous* attempts at expression. In domiciliary practice, where there are no facilities for manual removal of the placenta, I. V. ergometrin 0.25 mgms has been found useful to counteract the bleeding associated with a retained placenta, and it arrests the immediate threat to life and gives sufficient time for transporting the patient safely to a neighbouring institution where the placenta can be manually removed. It is now a common practice to give I. V. ergometrin at the time of delivery of the anterior shoulder during forceps delivery, breech extraction and I. P. version and if the placenta does not get expelled within 5 minutes, it is removed manually. This has helped an early separation and expulsion of the placenta, thus reducing the duration of the 3rd stage and the amount of blood loss. This is also done in patients who had severe ante-partum haemorrhage and in those with a previous history of P. P. H. or where P. P. H. is anticipated.

Treatment of asphyxia neonatorum has undergone much change. The use of hot and cold baths, attempts at artificial respiration by various methods, injections of Schiel's fluid, beating of non-crying babies, etc. have all been given up. Now, the babies are gently handled, the head lowered and mucus from the mouth

and throat removed by a rubber catheter and oxygen inhalations given. In cases where morphia or pethidine had been given to the mother in labour, N-allyl Normorphine (lethidrone) 1 to 2 mgm is given into the umbilical vein with good results.

Puerperal sepsis was then a bugbear in obstetrics. It was the highest single cause of maternal mortality and accounted for about 40% of maternal deaths. Now, it takes a very small toll only, less than 5%.

Anaemia tops the list of the causes of maternal mortality. About 20% of deaths are still directly due to it and in about 20%, it is a contributory factor. Much research has been done in anaemias of pregnancy. Most anaemias in the tropics are not only "dimorphic" but often "polymorphic" and have multiple aetiologies. Megaloblastic anaemias appear to be the most complex and they show variable responses to yeast preparations, crude liver extracts, purified liver extracts, vitamin B12 and folic acid. The problem of anaemias of pregnancy in the tropics appears to be almost insoluble, bound up as it is with poverty, prejudice and ignorance.

Post-natal care was neglected in those days. In recent years, it has been realised that many minor gynaecological ailments are the results of obstetric trauma which has been neglected and the expression "The gynaecology of obstetrics" has come to stay. 'Rooming in' of the infants and early ambulation of the puerperal women which are practised now, but non-existent in those days, have proved desirable and entirely satisfactory.

Now, there is a post-natal and infant welfare clinic attached to every lying-in hospital and periodical examinations are made here as a routine, the first being six weeks after delivery and thereafter every three months for about one year. During these visits any abnormality found, like lacerations of perineum, cervix, etc., are first treated with anti-septics and, if necessary, antibiotics, and after three months, repair operations are undertaken. If the uterus is found retro-displaced and associated with backache, it is corrected and a Smith Hodge's pessary inserted and left in for two months, advising the patient to take

a daily vaginal douche. Sub-involution of the uterus is treated with hot vaginal douches, anti-biotics and ergometrin. Exercises directed to tone up the muscles of the abdomen, pelvic floor and perineum have been found very useful. The follow-up of cases of toxæmias of pregnancy, pyelitis and other diseases complicating pregnancy, has given valuable informations. During these visits, the child gets attended to in the adjacent infant welfare clinic.

In conclusion, I wish to make it clear that I have only touched upon some of the major advances in the teachings and practice of obstetrics.

A good physician makes an accurate diagnosis and administers the best remedies. But this is not all. A good physician, according to classical Greek concepts, is like a God, because a good physician not only treats his patient but also understands him, counsels him and what is most important, has compassion for him.

— Andrew Banyai.

* * *

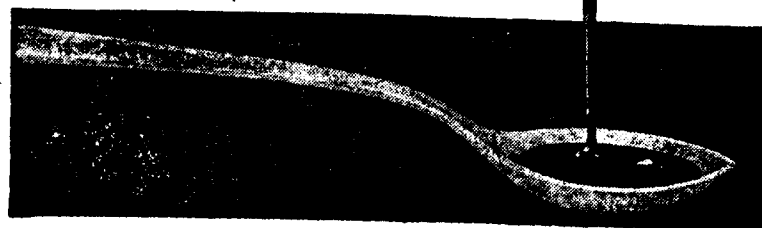
In all honest work there is ultimate good, but in medicine the rewards of devotion, of forgetting self in helping the sick and sorrowful, are more immediate, the harvest is gathered on the field. The sense of saving life, of relieving pain, as promptly as by dragging a drowning man out of water, is joyful, little grateful as the saved one may be. It is perhaps no less a satisfaction to feel that at least we smooth the pillows and calm the fears of the suffering.

— Sir Clifford Allbutt.

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for the aged
for patients who can't
take tablets or capsules



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Composition per 5 ml.

Thiamine Mononitrate	1.5 mg.
Riboflavin-5-Phosphate Sodium	3 mg.
Nicotinamide	15 mg.
Pyridoxine Hydrochloride	2 mg.
Pantothenol	3 mg.
Vitamin B12	2 mcg.
Inositol	10 mg.
Choline Bitartrate	20 mg.

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Dosage: 5-10 ml. (1-2 large teaspoonfuls) half an hour before a meal, or as prescribed by a physician.

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RECENT TRENDS IN MEDICINE AND THERAPEUTICS

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Lord Tennyson wrote:

"Who loves not knowledge? Who shall rail against her beauty?
May she mix with men and prosper! Who shall fix her pillars?
Let her work prevail."

The aim of this article is to keep abreast with the recent trends on advances in Medicine and Therapeutics.

I THE ADVANCES IN ANTIBIOTICS:

This subject has been progressing rapidly with new compounds against bacteria, fungi and even against tumour cells.

(a) *The new penicillins*: 1. Six-amino-penicillanic acid is available as Phenithillin or Broxyl and is given orally in a dose of 125 mgm thrice daily.

2. Another new penicillin which has been now introduced is Celebenin.

These new penicillins are effective against ordinary penicillin resistant staphylococcal infections.

(b) *Evrarmycin*: Is Tri-acetyl-oleandomycin and is given in dose of 250 mgm four times daily and is useful against Erythromycin resistant staphylococcal infections.

(c) *Ristacetin*: (Spontin) is prepared from Actinomycis Nocardiasis and is active against grampositive cocci and in full dosage is bactericidal, while Evramycin is bacteriostatic. It is given I. V. in glucose drip in dose of 11 mgm per pound of bodyweight per day and is given in two equal amounts. It is an ideal drug in sub-acute endocarditis. The

most toxic serious effect is neutropenia and hence periodical blood count is essential.

(d) *Vancomycin*: Is a bactericidal drug, very useful in staphylococcal infections. It is absorbed poorly by the gastro-intestinal tract and hence is given by I. V. drip. The daily dosage is 2 gms (20 mgm per lb. of bodyweight). The toxic effects are fever, skin rashes and nephrotoxicity.

(e) *Kanamycin*: Is related to neomycin but is less toxic than that and is administered by intramuscular route of 1 gm daily in two divided doses. It has a wide range of action against staphylococcal infection and also shigella infection and also against proteus. The side effects are tinnitus and pain at the site of injection.

(f) *Colymycin*: Is especially important in proteus vulgaris and pseudomonas and is given in doses of 500 thousand units three times daily.

(g) *Humytin or Paromycin*: Is an oral antibiotic in dysentery, salmonella and coliform infections. It is also active in intestinal amoebiasis. Dose: 12.5 mgm per lb. of body weight daily in 5 divided doses.

(h) *Amphotericin or Fungizone*: Is a new antibiotic very useful against deep mycosis as histoplasmosis and systemic moniliasis, etc. The dose

is 0.25 mgm per kilo daily and is increased gradually to 1.5 mgm per kilo daily.

(i) *Framycetin sulphate*: (Seframycin) is a new antibiotic useful in local therapy in pyogenic dermatosis. It is available as 1.5% water soluble ointment and there is no occurrence of contact sensitivity.

(j) *Di-methyl-chlor Tetracycline*: (Available as Ledermycin-Lederle) Dose: 600 mgm per day in 2 or 4 divided doses. The significant properties of D. M. C. T. are:

- (1) High stability.
- (2) Activity against most bacteria exceeding that of Tetracycline by approximately twofold.
- (3) A rate of renal excretion less than half that of Tetracycline with the result that the therapeutic concentration is maintained in the blood for a much longer time after a dose.

Penicillinase in the treatment of Penicillin Reaction: The best treatment for penicillin reaction is to administer in small doses of steroid for about 4 to 5 days along with an initial dosage of 1 mega unit intramuscularly of penicillinase.

II CORTICO STEROIDS:

A significant milestone has been reached in medicine and therapeutics with the advent of corticosteroids. They are useful in three major ways:

- (a) Diagnosis
- (b) Replacement therapy
- (c) Pharmacological therapy.

Diagnosis: (1) For diagnosis of latent diabetes mellitus by using 50 mgm of cortisone and repeating G. T. T.

(2) For diagnosis of adrenocortical tumours from hyperplasia. In hyperplasia there is suppression of 17-ketosteroid excretion after hydrocortisone.

Replacement Therapy: In Addison's disease replacement therapy with fludro hydrocortisone and hydrocortisone is beneficial. Recently aldosterone 150 to 200 mcg has been used in Addison's disease.

Pharmacological Therapy: It is in this the corticosteroids are used or abused. The discussion will be limited with a few of the products in current clinical practice.

Dermatology: Topical use of corticosteroids—almost all the corticosteroids are useful in topical therapy. They are clean and convenient to apply. They are generally non-sensitising with the exception of fludrocortisone. Many inflammatory conditions are accompanied by pruritis and topical corticosteroids to some extent control this annoying symptom. It is better to alternate this with antipruritics in lotio calaminae (eg.) menthol 0.1%, solution of coal tar 3%, camphor 0.3%. The infection is frequently associated with inflammatory dermatosis. Many of these simple pyogenic dermatosis are treated with topical corticosteroids and antibiotics (eg) Kenalog S or Hydrocortisone fortified or Prednisolone-chloramphenicol. A combination of corticosteroids with other agents are useful for special situations, viz: Tar with corticosteroids in a atopic dermatitis, Vioform with Hydrocortisone lotion in flexural eczema and atopic dermatitis. It is better to use a water miscible ointment, cream or lotion.

When the dermatitis is generalised, the best policy is to reserve these preparations for severely involved areas due to the prohibitive cost, especially the face, eyelids, ears, axillae, genitalia, perianal areas and the elbow flexures. There are some reports of the occurrence of increased susceptibility of cutaneous infections with bacteria or fungi when using local steroids, but very rarely I have seen them.

Systematic use of Corticosteroids in Dermatology: These must be considered in the following:

(a) Those whose life is or may be in danger as in pemphigus, systemic lupus erythematosus, severe drug eruptions and erythema multiformes.

(b) Those with severe acute dermatosis expected to be of short duration eg.: acute lichen planus, contact dermatitis.

(c) Those with benign, chronic disabling disorders, eg. psoriasis, widespread eczema.

The choice of the preparations: For acute lichen planus: Medral (Methyl Prednisolone) I. V. 20 mgms initially followed by oral tablets is useful.

For systemic lupus erythematosus and generalised eczema: Cortisone 300 mgm per day or Prednisolone 65 mgm per day or Dexamethasone 6 mgm per day. The dose may be tailed off gradually. Triamcinolone is to be reserved only for psoriasis, and is better avoided in other conditions as it causes weight loss and myopathic effect. These can be counteracted by the use of Norethandrolone in 25 mgm I. M. once weekly or Nilevar 25 mgm orally once daily.

Corticosteroids in the Treatment of Asthma: For patients in status asthmaticus, prednisolone in daily dosage of 50 mgm with reduction to 15 mgm produces relief in 6 to 10 days. During emergency, hydrocortisone hemisuccinate 100 mgm I. V. or methyl prednisolone 20 mgms I. V. may be given. The other corticosteroids can also be used and the equivalent dosages are: Cortisone 25 mgm-prednisolone 5 mgm-hydrocortisone 20 mgms-methyl prednisolone 5 mgms-triamcinolone 4 mgms-dexamethasone 0.5 mgms.

All cases of bronchial asthma must be thoroughly investigated and given vigorous treatment before using corticosteroids.

III PSYCHOPHARMACOLOGY:

Tranquillisers: Many drugs have been used to influence the functions of the nervous system, mental state and the behaviour. The discussion may be confined to the newer drugs. The tranquilisers are very useful in anxiety reaction, in narcotic addiction, neurodermatitis, maniacal depressive psychosis and in psoriasis and in nausea and vomiting of pregnancy.

Of the major tranquilisers used, the newer ones are:

1. Trifluoperazine Dihydrochloride (Stelazine or Siquil)
2. Compazine (Prochlorpromazine) S. K. S.
3. Perphenazine (Trilofon-Scherring)

These tranquilisers have less tendency to produce undesired side effects—viz. Parkinsonian syndrome.

Trifluoperazine: (Eskazine) 1 mgm tablets 3 or 4 times daily and Trifluopromazine Hydrochloride (Siquil)

10 mgm tablets 4 times daily. These are very good in controlling abnormal agitations, without producing marked sedation or drowsiness. These may be given in 25 mgm in a single dose or 10 to 30 mgm in divided doses. In cases of agranulocytosis and leucopenia, the drug is to be stopped immediately and necessary antibiotic treatment instituted.

Campazine: Is available in (5 mgm per cc) 2 cc ampoules and also in ampoules of 10 mgm and tablets of 5 mgms.

Perphenazine: (Trilofon) is available in ampoules of 5 mgms and tablets of 2, 4 and 5 mgms.

These major tranquillisers are the drugs of choice in excited states.

The Minor Tranquillisers: Produce calmness and relaxation but not to the same quality as the major ones. They do not produce the extra-pyramidal motor phenomenon. They are useful in common nervous states.

The newer minor tranquillisers are:

1. Ultram (Lilly's) 200 and 300 mgm tablets
2. Atarax (Boering) 10 mgm tablets
3. Franquinel (Merrel) 20 mgm tablets.

The new non-barbiturate sedatives and calmatives produce unquestionably mild sedation and relaxation both mentally and physically. Some of these new drugs are:

- (1) *Doriden* (Ciba): 0.25 gms tablets - once or twice daily. Induction of sleep ranges from 30 minutes to 3 hours. The following side effects are noticed: Nausea and vomiting and maculo-papular rash.

- (2) *Valimid* Tablets (Lilly's): 0.5 mgm tabs.

- (3) *Noludar* (Roche): 200 mgm tabs.

- (4) *Placydyl* Tablets (Abbot): 200 mgms and 100 mgm capsules. The last three drugs have a tendency to produce anorexia, nausea and hangover effects.

Anti Depressive drugs: These stimulant drugs produce a type of euphoria with inducement of a real pleasant feeling.

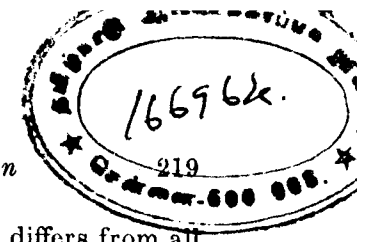
Meratron (Merrel Co.): tablets 1 mgm thrice daily. If the desired effect is not obtained, the dose may be increased to 2 mgm thrice daily.

Ritalin (Ciba): 5 mgm tablets is given two to four times daily. No evidence of addiction has been reported. To avoid disturbance of sleep in oversensitive patients, this drug should not be used after 4 p. m.

Impyramine (Tofranil tabs) (Geigy): is available in sugar coated tablets. It is very useful in endogenous depression. The dose ranges from 25 to 200 mgms per day. The side effects are minimal—producing dry mouth, dizziness and dryness.

Newer Analgesic drugs: *Metopon*: Is a new synthetic opium derivative and is more rapid than opium, effective orally and drug addiction develops more slowly. The dose is 3 mgm to 6 mgm.

Anileridine: tablets are available as *Leritine* (Sharp and Dohme) in tablets and ampoules of 25 mgm. and is useful for relief of labour pain and post operative pain. It produces less depression of respiration than *Pethidine*.



Pipadone: tablet is a new synthetic compound used in Britain in a dose of 10 to 25 mgms for relief of pain. Its effect lasts approximately 5 to 6 hours.

Drugs used in Parkinsonism: There are four aspects in parkinsonism which require control:

- (1) Rigidity
- (2) Tremors
- (3) Lethargy
- (4) Oculo-gyric crisis

For rigidity: the drug of choice is *Cogentin*. The dose is 0.5 mgm. once or twice daily and increased gradually to 5 mgms. daily—the chief side effect being dryness of the mouth. The drug has excellent action if combined with *Artane* 1 to 2 mgms thrice daily.

For control of tremors *Scopolamine* 50 mgms twice daily (1/200 gr.) is useful.

For tremors and rigidity *Pagitan* (Lilly) 1.25 mgms thrice or four times a day is advised.

For rigidity: *Kemadrine* (B. W.) 5 mgm tablets thrice daily is given.

For lethargy: *Benzedrine* 10 mgm or any of the newer antidepressives can be given.

For Oculogyric crisis: *Artane* is given in 2 mgm doses thrice daily. (In toxic doses, this drug produces delirium and hallucinations.)

Anti-epileptic drugs: There are many anticonvulsent drugs available, and the following are the newer ones.

Celontin tablets (P. D. & Co.): 0.3 gms twice daily are useful in petit mal, but may produce ataxia and drowsiness like *Milantin* but no haematuria.

Nydrane: (Hibicon) differs from all the other anticonvulsents in producing benefit in convulsive and mental states with remarkably low toxicity. Dose is 0.25 gms twice or thrice daily. This drug is useful in grandmal.

Cardrase (Upjohn Co.): is a new anticonvulsent drug used in doses of 125 mgms once or twice daily and increased gradually thrice daily. The drug is most effective in petit and grandmal and is less effective in psychomotor seizures.

Modern treatment of Alcoholism: This is no problem in our country, since there is prohibition. To produce a conditioned aversion in alcoholics, the new drug is *C.C.C.* (*Temposil*). This is given in a single dose of 50 mgms. He cannot take a drink for at least 4 days.

IV THE NEWER TRENDS IN CARDIO VASCULAR DISEASES:

Hypertension: The latest drug to this armamentarium is *Darenthin* (B. W.) tablets. This has no anticholinergic action, but has selective effect on the sympathetic. It is given in doses of 100 mgm tablets at 8 hour intervals always before meals, as it facilitates absorption and gradually increased to 1,000 mgm. The adjuvant use of *Hydrofluomathazide* is very useful. The drug may produce postural hypertension, but this is the aim of the treatment. There is a feeling of tiredness when lifting arms to shave or comb their hair. Some patients report of puffiness of face and stuffiness nose. A sharp pain in the parotid area at the onset of mastication is also a side effect. When there is a gastro-intestinal intolerance, it is better to reduce the dosage

Guanithidine: Is a hypotensive drug, similar in action to *Darenthin*, but the postural hypertension is less

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marked. The total daily dosage ranges from 40 to 150 mgms, but the average is about 60 mgms. The side effects noted are nausea, malaise, diarrhoea, muscle pain, watery eyes and nasal obstruction. Some have noted bradycardia.

Treatment of shock following infarction: This has been successfully treated with a new drug Aramine (Sharp & Dohme). The advantage is that it is a long acting sympathomimetic drug given in dose of 50 to 200 mgm in one litre of glucose at the rate of 2 to 6 cc per minute.

Two new hypotensive diuretics have now become available for clinical use:

(a) Bendrofluazide 5 mgms of which is equal to 50 mgm of Hydrochlor-thiazide.

(b) The other drug is chlorothalidone 50 mgm of which is equal to 50 mgm of Hydrofluomethiazide. The side effects are few being indigestion, skin irritation and urinary discomfort.

Spirano lactone: Aldosterone has a powerful sodium retaining property. There is increased excretion of Aldosterone in ascites and oedema due to cirrhosis liver and in some cases of cardiac oedema. To combat the ascites and oedema an anti-Aldosterone called "Aldactone" (Searle & Co.) is administered in doses of 100 mgm thrice daily. It may be combined and given for a shorter period with chlorothiazide. The usual regimen advised according to recent reports is chlorothiazide 2 gms daily for 2 days per week and aldactone 400 mgm every day for 3 days. The advantage is that Aldosterone counteracts the danger of chlorothiazide and potentiates the diuresis.

V MODERN TREATMENT OF LEPROSY:

Leprosy has changed from being a hopeless horror to be in relationship between the host and the invading pathogen which can be successfully challenged and eventually killed, though it would take time. Dapsone has been the drug of choice with a dosage of 600 mgm per week, but it is apt to produce untoward effects or lepra reaction. A new drug called CIBA 1906 or D. P. T. (Di-phenyl Thiourea, is given orally 2 gms daily. It is less toxic than Dapsone, less harmful to liver and has less tendency to provoke lepra reaction or psychosis. In 3 years, drug resistance may develop. The other drug is Etisul which is applied as inunction twice weekly with remarkable effect especially in lepromatous patients. A drug resistance may appear in six months. A phenazine dye B 282 has been on clinical trial, the results being awaited.

VI DIABETES MELLITUS:

Two new oral hypoglycemic drugs are:

(1) Diabinese (Chlorpropamide) (Pfeiser) dose: 0.25 to 0.5 gms per day. If the patient is taking 40 units of insulin, use Diabinese cutting insulin to half the dose and gradually stop it. The drug is a potent hypoglycemic agent and has action in increasing the secretion of insulin and destroying the anti-insulin factors. The side effects are nausea, abdominal pain, skin sensitivity and jaundice.

(2) D. B. I. or Phenformin has a different action, since it helps the peripheral utilisation of glucose. The initial dose of D. B. I. is 25 mgms twice or thrice a day just before meals. If glycosuria or hyperglycemia persists, the dose is gradually

increased by 25 mgms but to no more than 200 mgms per day. Some patients may develop ketonuria or ketosis, but this may be over-come by gradual stoppage of insulin. A newer product akin to D. B. I. is Dimethyl guanidin or Methformin.

Dose is $\frac{1}{2}$ gm thrice daily before meals.

It is with justifiable pride that an attempt has been made to present a resume of the recent trends in medicine. Every-day science is advancing.

"The moving finger having writ, moves on"

DANGERS OF BED REST

"Look at a patient lying long in bed! What a pathetic picture he makes! The blood clotting in his veins, the lime draining from his bones, the scybala stacking up in his colon, the flesh rotting from his seat, the urine leaking from his distended bladder, and the spirit evaporating from his soul".

— Asher, 1947.

There are men and classes of men that stand above the common herd: the soldier, the sailor and the shepherd not infrequently; the artist rarely, rarer still the clergyman; the physician almost as a rule. He is the flower of our civilization; and when that stage of men is done with and only to be marvelled at in history, he will be taught to have shared as little as any in the defeats of the period and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practise an art, never to those who drive a trade; discretion tested by a hundred secrets; tact, tried in a thousand embarrassments and what are more important, cheerfulness and courage, so that he brings air and cheer into the sick-room and often enough, though not so often as he wishes, brings healing.

— R. L. Stevenson.

REPORT OF A CASE OF NON-PUERPERAL INVERSION OF THE UTERUS

Mrs. ANNA VAREED, F. R. C. S., etc.
Obstetrician and Gynaecologist, Government Head-quarters Hospital, Coimbatore.

While I was reading an article on nonpuerperal inversion of the uterus, with a case report to illustrate the same condition in the September, 1960 issue of the American Journal of Obstetrics and Gynaecology, Page 478, I was reminded of a case we had recently in the Head-quarters Hospital, Coimbatore.

Name of the patient: Ayyammal.
Age : 42 years.
I. P. No. : 32283.
Admitted : 6-45 A.M. on 26-10-1960.

Stretcher case. She was admitted into the labour theatre as an obstetric emergency — bleeding profusely per vagina, cold and clammy, very severely anaemic, pulse rapid and very thready, and with a very offensive smell on going near her. The duty medical officer discovered a foul smelling, fungating mass, not only filling the entire vagina, but part of it being extruded outside the vulva — carcinoma cervix. So the patient was immediately sent up on a stretcher to the female surgical ward, where she was given the usual treatment for shock and collapse. The foot of the bed was raised, oxygen inhalation and I. V. glucose saline started, coramine injection given, blood grouped and obtained; the fungating mass just allowed to rest on a sterile towel. By that time the bleeding had stopped.

The patient was too weak to give out her history, but a relation of hers told us that the patient was having

more or less continuous vaginal bleeding for the previous four months, and the patient thought that she was nearing her menopause and only a week before admission, did she feel a mass coming out of her vagina on straining. She has been complaining of continuous pain in the lower abdomen.

Bowels: Constipated.

Obstetric History:

Children 8; all natural deliveries. Last child 8 years ago.

Menses regular but profuse and prolonged till 4 months previously, after which time she is having continuous bleeding, sometimes very profuse.

Chest : Haemic murmur in all areas.

Patient: Very anaemic.
Hb/50%.
R. B. C. 2.4 million.

P. A. : Nothing special felt.

P. V. : Very offensive foul smelling discharge.

Degenerating, putrid fungating fibroid polypus or advanced carcinoma cervix. (No rim of cervix could be felt by the examining finger; but we thought that the mass filling up the vagina was a big fungating polypus).

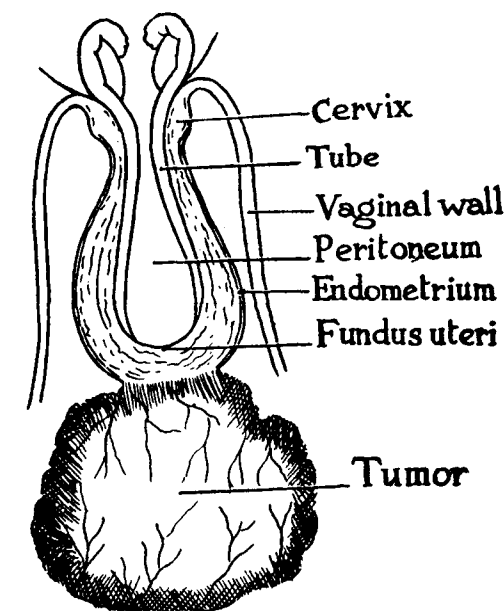
Treatment:

The area was cleaned with hydrogen peroxide and covered with sterile dressings. General measures were instituted to improve her general health and make her fit for surgical

removal of the cervical polypus, when sepsis is controlled. She was put on penicillin, extra nourishment and iron and vitamins.

Operation:

On 2-11-1960, the patient was taken to the theatre and under gas and oxygen, we examined her and then we discovered that we were dealing with an inverted uterus, with a large fundal fibroid polypus, which was hanging from the fundus like a large cauliflower, as a fungating mass. As much of the tumour that was free was removed, using big artery forceps to clamp the pedicle which has, strictly speaking, stretched the fundus of the uterus. Some stay sutures were applied, bleeding was stopped, the vaginal cavity was mopped clean and dry, streptomycin powder was put into the vagina, the vaginal cavity was plugged with roller gauge and the patient sent back to the ward with no further bleeding.



Diagrammatic sketch showing complete inversion

Biopsy report revealed that the mass was a fungating fibroid and that there was no malignant change.

Patient's general condition improved rapidly, once the septic mass was removed.

On 21-11-1960, under light spinal anaesthesia, a total hysterectomy was done per abdomen. On opening the abdomen, the tubes and ovaries were inside the invaginated depression as in the diagram and by making two longitudinal nicks anteriorly and posteriorly, the inversion was corrected, the tubes and ovaries were liberated and pulled out and the uterus was removed as usual.

A drain was put in from inside into the vagina. The patient made an uneventful recovery. She was discharged on 2-12-1960.

To quote from the article I referred to at the beginning — "Reports of non-puerperal inversion of the uterus are very few particularly in English literature. Levin in 1955 collected 65 cases from world literature and reported a case of his own making it 66. Since then only 3 more cases were added in the English literature". So this may be the 70th case.

The case reported in the article in the American Journal of Obstetrics and Gynaecology was a case of inversion due to a large sub-mucous fibroid, with profuse haemorrhage, and biopsy revealed sarcoma, the patient going down ill after the operation. In our case, there was no malignancy and the patient went home much improved in her general health.

My thanks are due to Dr. V. Selvaraj, D. M. O., and Superintendent, Head-quarters Hospital, Coimbatore for allowing me to publish the case.

NATIONAL HEALTH SERVICE IN BRITAIN *

(A DOCTOR TELLS HOW STATE MEDICINE WORKS)

Dr. ANN DALLY

I am a doctor in a working class district in London. Many of my patients are factory hands and transport workers, and their wives and children. My surgery stands in a row of shops. It is new and fitted with up-to-date equipment. It consists of two consulting rooms, a secretary's room, a small laboratory and a big airy waiting room. Patients can consult me there between 9 and 11 o'clock in the morning and between 7 and 7-30 in the evening.

Like many general practitioners in Britain, I work in a partnership. My partner and I, between us, look after 6,500 patients. Apart from our day's work, one of us is on call day and night. We take it in turns to be on duty at night and at weekends.

PAID BY THE STATE :

Our patients are nearly all national health patients. This means that they do not pay for our services or for those of any specialist or hospital. We are paid by the state according to the number of patients — a fixed amount for each patient to cover treatment of illness, and extra for some services such as immunisation against infectious diseases.

If a patient requires drugs or medicines, we prescribe these on a standard form which the patient takes to a chemist. Each prescription costs the patient a fixed sum, regardless of the cost of the drug prescribed. Since many of the modern drugs are extremely expensive, we much appreciate being able to prescribe them at such small cost to the patients who need them.

Although we work on our own, we do not feel isolated from our fellow doctors. We both have small appointments at the local hospital. On Tuesday afternoons, I work there in the ante-natal clinic and on Thursdays, my partner does an ear, nose and throat clinic. This helps us to keep in touch with other doctors with new methods of diagnosis and treatment. The hospital also arranges weekly ward rounds and monthly evening meetings and we attend these as often as possible. We also belong to several medical associations which hold meetings and arrange lectures and demonstrations. Occasionally, one of us goes away for a short refresher course, in which case the Government may pay for a locum (substitute) doctor to help in the practice while the partner is away.

TIME OF EPIDEMICS :

We have to work much harder in winter than in summer. In London, where we are apt to get fog in the winter, there is a good deal of chest disease. Although we have now comparatively little tuberculosis, we see many patients with bronchitis, asthma and pneumonia. These are much worse in foggy weather, which is also the time for epidemics. During a bad spell, we may work 15 or 16 hours a day, seeing as many as 80 patients each in the surgery and visiting 50 or 60 others who are too ill to attend. But sometimes in the summer months so few people are ill that we have four or five hours to ourselves in the middle of the day, before the evening surgery starts at 6 o'clock.

British medicine is quite different from what it was 50 or even 15 years ago. Firstly, there have been tremendous advances in medical knowledge, to which the most outstanding British contribution is probably the discovery of penicillin. Hand in hand with medical knowledge enabling us to treat disease has grown the public health measures by which to prevent it. These are controlled by the local authorities in each district. They organise clinics for immunisation against disease and watch vigilantly for outbreaks.

IMPRESSIVE RECORD :

Many diseases which were common only a few years ago are practically unknown today. For instance, I have not seen a case of diphtheria for 12 years. Only a few hundred cases of syphilis now occur each year in the whole of Britain. Tuberculosis and poliomyelitis are becoming increasingly rare. Childbed fever, once such a terrible danger to lying-in women, has practically disappeared. Thanks to the tremendous work in antenatal care, death through childbirth is now exceedingly rare. When it does occur, the patient has often ignored the facilities available for her welfare or has disobeyed the instructions of the doctor or midwife.

Infant mortality has now reached an all-time low. Only about 22 babies out of every 1,000 die before the age of one year. A large proportion of these die because they are born with serious defects. Congenital malformations are now regarded as an important cause of deaths in infants not because their incidence has increased but because nowadays so few babies die from other causes, such as infections.

IMPROVED HEALTH :

Much of the enormously improved health of the British people is due to

improved standards of feeding. For the past 20 years, British children have nearly all had enough food. Cheap milk and orange juice are available to expectant mothers and to babies and young children. These also receive cod liver oil free of cost. One-third of a pint of milk is provided free for each school child. Such children also receive an adequate hot meal in the middle of the day. It costs one shilling.

As a result, under-nutrition and deficiency diseases, such as scurvy rickets, have become extremely rare in Britain. The average height and weight of children has increased by several inches and pounds and the average age of physical maturity is now about six months younger than it was 20 years ago.

But it is not all a bed of roses. The pace of modern urban life in Britain is so great that many find it difficult to cope. Patients suffering from anxiety and depression are common visitors to the doctor's surgery and many hospital beds are filled with psychiatric patients. But the recent discovery of groups of drugs which act on the mental process is an exciting development and as a result many of these patients are again able to lead useful lives.

Another big problem, and the fear of so many patients, is cancer. We still have not found the certain cure. But all the same, it is amazing what is being done. The hospitals now have the most remarkable machinery and equipment for early diagnosis and treatment, and many cases which I would have thought were quite hopeless now emerge from hospital fit and well and with many more useful and enjoyable years to live.

* Courtesy — British Information Services.

TRAINING OF DOCTORS IN THE U. S. S. R. *

V. YERMAKOV,

Chief of the Medical Schools Department, Ministry of Public Health of the U. S. S. R.

Even the most critical foreign visitors coming to the U. S. S. R. have acknowledged that the Soviet state pays much attention to the protection of public health and has created most favourable conditions for the prevention and cure of diseases. The growing prosperity and culture of the Soviet people is the basis for the prevention of diseases.

The incidence of diseases and death of children and grown-up population from different diseases, including infectious diseases, has sharply decreased. Compared with the pre-revolutionary period, the average life span has grown more than twice—from 32 to 67 years.

380,000 Doctors :

While in tsarist Russia there was one doctor per 6,900 inhabitants, in the U. S. S. R. now there is one doctor per 560 inhabitants and there will be one per 460 in 1965. A wide network of higher medical schools allows fully to provide medical institutions with doctors. There are 380,000 doctors in the Soviet Union.

In tsarist Russia doctors were trained in 17 higher medical schools, most of which were in big cities in central Russia. There were no higher medical schools in Central Asia, Kazakhstan, Transcaucasia.

During the Soviet years, many new medical institutes have been established, which are equally distributed throughout the territory of the Soviet Union. Higher medical schools

have been opened in the Armenian, Georgian, Azerbaijan, Kazakh, Uzbek, Tajik, Turkmen, Kirghiz, Byelorussian and Moldavian republics, in the industrial areas of the Russian Federation and Ukraine. There is not a single union republic now which does not have its own medical institutes. Such distribution has created most favourable conditions for the training of doctors out of the local population of every republic, it ensures in the best way the preparation of national medical cadres. In the Kazakh Republic, for example, there are now four medical institutes; in Uzbekistan four, and the medical institutes in the capitals of these republics, Tashkent and Alma Ata, are big higher medical schools with many departments and the number of students exceeding 3,000 in each.

Over 165,000 Students :

The Soviet Union has 74 medical and 6 pharmaceutical higher schools and 5 medical departments at universities, with the total number of students exceeding 165,000. Medical institutes have one or several departments. They graduate general practitioners, pediatricists, sanitary doctors, stomatologists and pharmacutists.

The training of specialists in the U. S. S. R. is conducted in accordance with the requirements of the state plan. Higher medical schools enroll annually about 26,000 students. They are boys and girls with secondary education and all of them have

to go through competitive examinations before admission. Preference is given to young people with experience of work.

Theoretical and Practical Knowledge :

Tuition at medical institutes, as at all other higher schools of the country, is free of charge. Out-of-town students are provided with hostel accommodation. The academic year at higher medical schools is divided into two semesters—the autumn-winter and spring semesters. Students have a two months' vacation in summer and a two weeks' vacation at the middle of the academic year. During the course of studies much attention is paid to both theoretical knowledge and practical work. The amount of practical studies is double that of theoretical courses.

Medical institutes of the U. S. S. R. train mainly general practitioners, and practical work is an integral part of this training.

In 1958, the Supreme Soviet of the U. S. S. R. adopted a law on the strengthening of ties of the school with life and on the further development of the system of public education in the U. S. S. R. In accordance with this law medical institutes have considerably expanded the scope of practical work of the students and made it continuous and obligatory during all the years of study.

To teach the students the necessary skills in tending the sick, during the first two years of study they spend a certain number of hours in clinics and hospitals assisting nurses, and during the third year they already act as para-medical personnel. On completing their third year, the students work for four weeks in clinics and hospitals as assistant doctors.

On completing their fourth year, they have an eight weeks' period of practical work in the main clinical branches (therapy, surgery, midwifery and gynaecology) as subordinates in town or district hospitals. After their fifth year, the practical experience of the students is completed by independent work in polyclinics or sanitary and epidemiological institutions. They act there as district doctors.

All practical work is done by the students under the guidance of experienced specialists and professors of their institute. During their practical work the students receive their stipend and additional money grants to pay for the travel to the place of work and for their maintenance.

Institutes take care that all future doctors receive good training in preventive treatment, organization of public health services, epidemiology, hygiene, etc.

After the completion of the programme and of the required practical work the students take state examinations.

Scientific Research :

Medical institutes have everything necessary to prepare well qualified doctors. They have at their disposal well equipped laboratories, clinics, hospitals as well as all aids, manuals, etc.

Much attention is paid to the participation of students in scientific research. Students' scientific circles are functioning at all institutes.

In the Soviet Union the network of medical institutions is developing according to a plan. All young

* Courtesy — U. S. S. R. Embassy in India.

specialists immediately after their graduation from the institute receive appointments in their special fields.

As already mentioned, Soviet medical institutes are training general practitioners. For their specialization and perfection of their knowledge, 11 institutes for advanced training have been set up. Besides such institutes, much is being done in the way of specialization and improving qualifications of young specialists by big town hospitals and by the departments of medical institutes.

Opportunity for every Doctor :

Every doctor after 3 or 5 years of work has an opportunity to improve his qualification by taking courses at the institutes for advanced training. The period of study at the courses is 4 to 6 months, and during that period

the doctor is paid his full salary and a stipend and is provided with living quarters free of charge.

An important place in the training of doctors is occupied by post-graduate courses maintained by institutes and clinics, which enroll doctors with experience of work. Admission to such courses is made on the basis of competitive examinations. The term of study at the courses is three years at institutes and two years at clinics.

The post-graduate course at institutes prepare at such courses mainly teaching staff and researchers, while the clinics prepare specialists for hospitals, etc. Students of both types of courses receive stipends.

Members of teaching staffs at the institutes who are working on their scientific papers to be submitted for their candidate's or doctor's degree, are given special leaves with pay.

ABSTRACTS AND EXCERPTS

MORTALITY RATE IN OPEN HEART OPERATIONS:

The death rate in open heart operations at the University of Michigan Medical Centre, Ann Arbor, Michigan, has been reduced to 1.4 per cent for "uncomplicated congenital cardiac defects," according to a recent report in the *Journal of the State Medical Society*.

The open heart operation is a complicated process which utilises a heart-lung device to pump and oxygenate a patient's blood while the doctor is operating directly on a heart. The surgery was first performed on human beings about six years ago after extensive experiments on animals. The death rate has been decreasing rapidly since. The current 1.4 per cent compares with the risk of a gall bladder operation.

The *Journal's* report was written by four University of Michigan specialists: Doctors Herbert Sloan and James Mackenzie of the Department of Surgery and Aaron Stern and Joan Sigmann of the Department of Pediatrics. They summarised the results of 360 open heart operations undertaken at the University of Michigan Medical Centre during the past four years.

These specialists say congenital heart defects, disorders present at birth, should be corrected before the child begins school. They recommend that the surgery be performed when the child is between three and five years old unless it is a matter of life and death, when it may be done earlier. They report that the risk of major heart operation is less when the child is over two years old.

The typical open heart surgery calls for a team of about twelve men and women—doctors, nurses, and specialists. Elaborate preparations are necessary to connect the blood stream with the pump-oxygenator so the machine can take over the function of the heart and lungs. Many instruments are used to provide the surgeons with a constant flow of vital information during the course of the operation. These include blood pressure readings, electronic measurements of the heart beat and brain waves (E. K. G. and E. E. C.), body temperature readings, information on the oxygen content of the blood, and a detailed accounting of blood loss and replacement.

— U. S. I. S.

TREATMENT OF RINGWORM BY GRISEOFULVIN:

The dermatophytic fungi (*Trichophyton*, *Microsporum*) live and multiply at the expense of the keratin they digest; as a result, the growth of the hair is impaired and it falls out, leaving bald patches.

The treatment used, until quite recently, consisted in the desquamation of the parts affected so as to remove the diseased keratin and the disinfection of the patches in order to prevent contamination of new-formed keratin.

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For this purpose, fungicidal ointments and pomades, and even x-ray therapy — which causes depilation — were employed. None of these methods gave reliable and permanent results. It was necessary to find a new treatment, acting internally instead of externally, that would enable the keratin-producing cells to resist the fungus, and continue to resist it after they had become keratinized.

The discovery of griseofulvin was to provide an antibiotic satisfying these requirements. Isolated in 1939 from *Penicillium griseofulvum*, then from several other penicillia, the antibiotic was identified chemically and used in horticulture against certain fungal plant pathogens. Its powerful fungistatic action attracted the attention of dermatologists and, starting in 1958, studies were made of its use in the treatment of certain human and animal dermatomycoses. Encouraging reports came from hospitals in different parts of the world. The antibiotic gave better results than any form of treatment previously applied. It was more active when administered orally than parenterally, was not found in the serum of treated subjects but, on the other hand, could be detected in their hair. Since it was not bacteriostatic, it had no action on the intestinal flora. In therapeutic doses it did not have any harmful or irreversible side effects. As a result of these outstanding properties, it was decided to use it for mass treatment.

One of the most recent applications of griseofulvin for the systematic control of ringworm was undertaken by the Government of Israel in an Arab village. Ziprkowski *et al* describe this campaign and its results in a recent number of the WHO Bulletin.

Trichophyton violaceum is the most widespread parasite; favus caused by *T. schoenleini* is also encountered. In the Arab village where the campaign was carried out, there were 441 *T. violaceum* and *T. schoenleini* cases. Griseofulvin was administered in single doses of 25–30 mg/kg of body weight per day. At the end of 3 weeks, there was a marked improvement in most cases. After 8 weeks, 99% of the *T. violaceum* infections and 60% of the *T. schoenleini* infections were cured. All cases were cured after 10 weeks' treatment. No topical application of ointment was made. The side effects reported comprise nausea, headache, some cases of furunculosis and one of skin eruption. Some degree of leukopenia was noted, but no agranulocytosis; investigations in this connexion will, however, be continued. Twenty-five cured cases which were followed up for 2–6 months did not suffer any relapse.

— WHO CHRONICLE (1961) Vol. 15, page 65.

DOMICILIARY CHEMOTHERAPY OF TUBERCULOSIS:

The November 1960 issue of the Bulletin of the World Health Organization, which is devoted to tuberculosis, contains five articles presenting the results of studies conducted by the Tuberculosis Chemotherapy Centre in Madras. This centre was set up in 1956, under the joint auspices of the Indian Council of Medical Research, the Madras State Government,

WHO, and the Medical Research Council of Great Britain to investigate problems of large-scale chemotherapy of tuberculosis under the conditions prevailing in a developing area. A previous report from this centre (Bull. Wld. Hlth. Org., (1959), 21, 51) shows that a year's domiciliary treatment with isoniazid plus PAS gave as satisfactory results as a year's institutional treatment with the same combination of drugs. This finding suggested that domiciliary chemotherapy might be of considerable value in countries where the tuberculosis problem is aggravated by a shortage of hospital beds. There are, however, a number of important problems to be considered before domiciliary chemotherapy can be introduced on a large-scale.

It is these problems which are reviewed in the current issue of the Bulletin. There is, for instance, the problem of whether domiciliary treatment of 'open' cases exposes their contacts to a special risk of infection. The experience at the Madras centre suggests that the place where the patients were treated — at home or in sanatoria — would not influence the incidence of clinical tuberculosis or of tuberculous infection in their family contacts. The major risk for contacts lies in exposure to the infectious case before diagnosis.

Another problem concerns the risk of relapse after domiciliary chemotherapy, as compared with institutional chemotherapy. Evidence on this point is provided by a report from the Madras centre based on a twelve-month follow-up of patients who had attained bacteriological quiescence by the end of one year of combined chemotherapy either at home or in sanatoria. During this second year all the patients were treated at home, either with isoniazid or with a placebo (calcium gluconate); in each case the medicine was administered by the patients themselves. It was found that there was very little difference in the relapse rates of the 'home' and 'sanatorium' groups, and that a second year of treatment with isoniazid alone did not influence the likelihood of relapse.

Perhaps the most interesting of the Madras reports is that which presents the results of a controlled comparison of four chemotherapeutic regimes; (a) 3.9 to 5.5 mg/kg. body weight of isoniazid plus 0.2 to 0.3 mg./kg. body weight of PAS (sodium salt) daily in two doses (the standard combined chemotherapy); (b) 7.8 to 9.6 mg/kg. body weight of isoniazid alone daily in one dose; (c) 7.8 to 9.6 mg/kg. body weight of isoniazid alone daily in two doses; (d) 3.9 to 5.5 mg/kg. body weight of isoniazid alone daily in two doses. The results show that treatment with isoniazid alone is less satisfactory than the standard combined therapy with isoniazid and PAS. Not only was the latter clinically effective, but there were very few toxic manifestations. A high frequency of peripheral neuritis was observed in those patients who received a high dosage of isoniazid.

A separate report gives details of 20 cases of peripheral neuritis which occurred among 338 poorly nourished tuberculosis patients receiving a high dosage of isoniazid (i.e. 7.8 to 9.6 mg/kg. body weight daily).

These 19 patients were found to have a higher mean serum level of free isoniazid than the patients in the same groups who did not develop peripheral neuritis. It is, therefore, recommended that doses of 7.8 to 9.6 mg/kg. body weight daily should not be used for the mass therapy of poorly nourished patients unless steps are taken to prevent the development of peripheral neuritis. Although pyridoxine has been reported to be an effective preventive, this is much too expensive. A form presented in this report, however, suggests that the administration of the cheaper vitamin B complex might give satisfactory results and warrant further investigation.

— *Practitioner, January 1961.*

TOLBUTAMIDE-PHENFORMIN IN KETOACIDOSIS-RESISTANT PATIENTS:

Combined tolbutamide-phenformin therapy was evaluated in keto-acidosis resistant diabetics imperfectly controlled by tolbutamide alone. In 70 patients in whom valid comparison with prior tolbutamide therapy was possible, significant reduction in the mean fasting blood sugar level was accomplished in 70% after change from tolbutamide alone to combination therapy. The antihyperglycemic effectiveness of this regimen in the tolbutamide hyporesponsive and unreponsive groups appears to exceed by many times that of chlorpropamide, metahexamide, and phenformin alone. Tolbutamide is the drug of choice in tolbutamide-responsive diabetes; tolbutamide-phenformin combination therapy appears to be an effective and relatively safe method of treating tolbutamide-hyporesponsive and unresponsive ketoacidosis-resistant diabetes.

— *Unger, R. H., Madison, L. L., & Garter, N. W. J. A. M. A. 174, 2132-2136, 1960.*

ORALLY GIVEN COMBINATIONS OF DRUGS IN DIABETES MELLITUS THERAPY:

A total of 25 ambulatory diabetic patients were treated with a combination of drugs phenformin and a sulphonylurea drug (either tolbutamide or chlorpropamide). These patients had failed to respond fully to treatment with either sulphonylurea drug alone. The therapy was successful in reducing blood sugar to satisfactory levels in 19, but 3 had to discontinue the treatment because of gastrointestinal intolerance. The therapy was unsuccessful in 3 patients, largely because of severity of the diabetes.

— *Beaser, S. B. Boston, Journal of Amer. Med. Assn. 174, 2137-2141, 1960*

“TUMOURS OF THE PITUITARY REGION” — A REVIEW

Tumours of the Pituitary Region: BY B. RAMAMOORTHY, M. S., F. R. C. S., F. A. C. S., F. I. C. S. *Published by Ms. A. MacRae & Co. Private Limited, Bombay.*

It is a pleasure to go through the monograph on “Tumours of the Pituitary Region” by Dr. B. Ramamoorthy, Professor of Neurosurgery, Madras Medical College, Neurosurgeon, Madras General Hospital. I think that no other Indian author has dealt with this subject so thoroughly and exhaustively in recent years as Dr. Ramamoorthy has done. Every aspect of the problem has been adequately dealt with and critically analysed. The historical aspects of the subject, as well as the individual landmarks in the progress of diagnosis and treatment of the lesions have been presented. The anatomy and physiology of the Pituitary Gland and its neighbourhood have been clearly and succinctly written. I am sure not many of our students are taught the exact dural relationship of the Pituitary and that it is an extradural structure. Besides mentioning the various clinical features, he has dealt with each individual manifestation and has compared them with the findings of other neuro-surgeons.

The various investigations and their usefulness and interpretations are well dealt with. Likewise, the operative procedures, the various approaches to the Pituitary are well discussed. The operative results and analysis of mortality are thoroughly discussed. His method of analysing the mortality under two heads as (1) intra-sellar and (2) extra-sellar is, I think, really sensible and justified. The complications following surgery like cerebrospinal rhinorrhoea are effectively mentioned. Especially, the “Nun’s Story” of rhinorrhoea is as interesting as the novel and film of the same name! The histopathology of the tumours removed is dealt with adequately and compared with the findings of other surgeons. One feels surprised to learn that even though Dr. Ramamoorthy had published two cases of “Pituitary Apoplexy” as early as 1953 in the *Indian Journal of Surgery*, it has not received the attention of the Mayo Clinic workers when they published their recent “Complete” review of the subject in 1957.

By and large, this is a very interesting and instructive monograph. It is the result of a fine team work. Reproductions of x-rays and clinical photographs are good, but can be improved. This monograph will be very useful not only to the specialists but also to the general surgeons, practitioners and students preparing for higher examinations.

Dr. Ramamoorthy and his team are to be congratulated on the fine performance of theirs.

— C. N. S.

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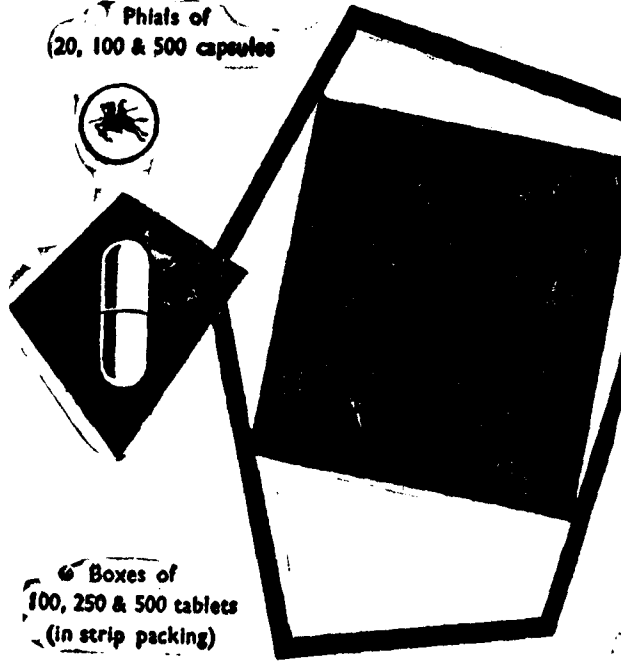
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ASSOCIATION NOTES

BRANCH NOTES

Anamalai Branch:

1. A clinical meeting of the association for the month of December, 1960 was held on 17—12—1960 at the residence of Dr. R. Perumal, Medical Officer, Sholayar. Dr. P. Satyanarayana Rao gave a speech on the "Congenital malformations of the female genital organs and dystocia associated with such conditions".

2. A clinical meeting was held on 21—1—1961 at Dr. Narayan's residence. Dr. Mrs. Dissawalla gave a talk on "Investigations in Sterility".

3. A clinical meeting was held at Dr. Subbarathinam's residence on 15th February, 1961. Dr. Narayanan gave a talk on "Pleural Effusion".

4. A clinical meeting was held at Dr. Jayachandran's residence on 25th March, 1961. Dr. K. John gave a talk on "Infective Hepatitis".

Madras City Branch:

A reception to the new members of the Indian Medical Association, Madras City Branch was got up on 15—2—1960 at 6 p. m. at the Woodlands Hotel. Dr. B. M. Sundaravadanam, B. A., M. B., B. S., L. R. C. P., F. R. C. S., Dr. D. V. Venkappa, former President of the Indian Medical Association, Major General S. C. Alagappan and Dr. K. Rama Rao, addressed the new members.

Madura Branch:

A monthly meeting of the Madura Medical Association was held on Saturday the 11th March 1961, under the presidentship of Dr. K. G. Ramabadrar, L. M. P., Madurai. Dr. O. Francis, M. D., Obstetrician and Gynaecologist, Erskine Hospital, Madurai, gave an interesting lecture on "Obstetrics then and now".

Nagapattinam Branch:

A condolence meeting of the Indian Medical Association, Nagapattinam was held on 3—4—1961 under the presidentship of Dr. A. Thiagarajan, M. B., B. S., D. T. M., retired D. M. O., on the death of Dr. V. D. Rajan, L. M. P. who died of coronary thrombosis on the afternoon of 18—3—1961.

Tiruchy Branch:

A meeting of the association was held on Saturday, the 25th March, 1961 at the medical association premises, Tiruchy. Dr. K. V. Thiruvengadam, B. Sc., M. D., Professor of Clinical Medicine, Stanley Medical college, Madras and Physician, Government Stanley Hospital, Madras gave a talk on "Common Chronic Pulmonary Diseases".

After the usual discussion, a film on "The Griseofulvin Story" sent by M/s. Glaxo Laboratories (India) Private Ltd., Bombay was shown to the members.

Madras State Branch of I. M. A. — Office-bearers for the year 1960-'61

President: Dr. T. V. Sivanandam, M. B., B. S., M. L. C.

Vice-Presidents: 1. Dr. C. Nathamuni Naidu
2. Dr. V. Samuel

At the annual meeting of the State Council of the Madras State Branch of I. M. A. held at 'Tamilagam' (Arranmore Palace), Ootacamund, on Saturday, the 1st April 1961 at 4-30 p. m., the following office-bearers were re-elected for the year 1960-'61:—

Hony. State Secretary: Dr. M. P. Jesudasan, D. M. & S.,
Medical Officer,
Brooke Bond (India) Ltd.,
Coimbatore.

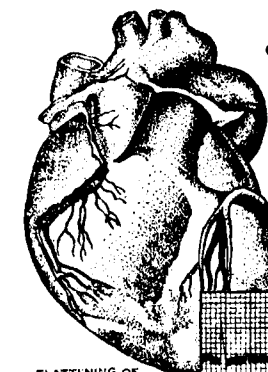
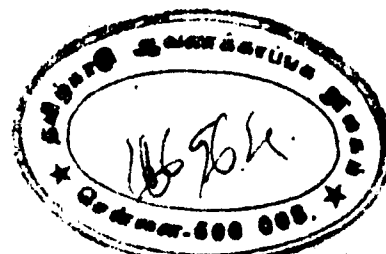
Hony. Joint Secretary: Dr. A. Pattabi, D. M. & S.,
63, Swami Naicken Street,
Chintadripet, Madras-2.

Hony. Treasurer: Dr. S. G. Rajarathnam, M. B., B. S.,
Chitra Bavan, Kattur,
Coimbatore-9.

The office of the Madras State Branch of I. M. A. will be located in the Medical Association Building, Syrian Church Road No. 2, Coimbatore-1. All communications intended for the Madras State Branch of I. M. A. may be addressed to:—

"The Hony. State Secretary,
Madras State Branch of I. M. A.,
Medical Association Building,
Krishnaswami Mudaliar Road,
Coimbatore-1".

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FLATTENING OF
"T" WAVES INDICATING
MYOCARDIAL DEFECT

• Myocardial Damage • Cardiac Insufficiency.

"Cardiovascular diseases are caused primarily by the degeneration of heart muscle. If we replace the used up and missing active chemical constituents contained in the heart muscle responsible for normal myocardial activity, the onset of organic heart diseases could be prevented and a number of lives thus saved".

HERZOLAN is a concentrated heart muscle extract containing all the important chemicals and the essential enzyme Cytochrome C present in the heart muscle. HERZOLAN is a natural food and nourishment for the degenerating heart muscle which quickly responds to this nourishment and regains normal activity. (Ref: Abstract of World Medicine, Sept, 1950, No. 1047; Science 104.)

HERZOLAN

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THE IDEAL, NATURAL
NOURISHMENT FOR THE HEART MUSCLE.

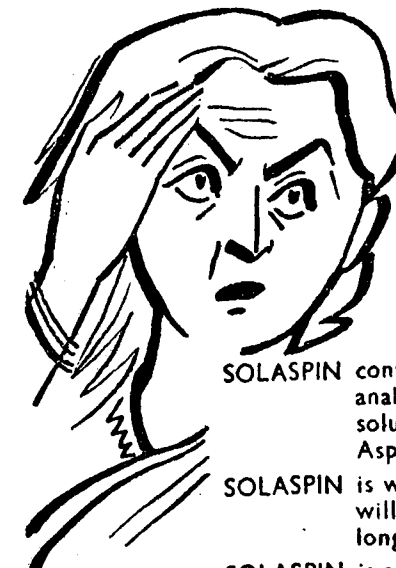


PACKING
BOTTLE OF 6 OZ.

"HERZOLAN" Exhaustive Literature sent on request

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HEALTH'S SOLASPIN (CALCIUM ASPIRIN)

"Aspirin is a serious gastric irritant in peptic ulcer patients. Calcium Aspirin (Health's Solaspin) can be used with impunity."

EXTRACTS. BRIT. MED. J., 2.7.55

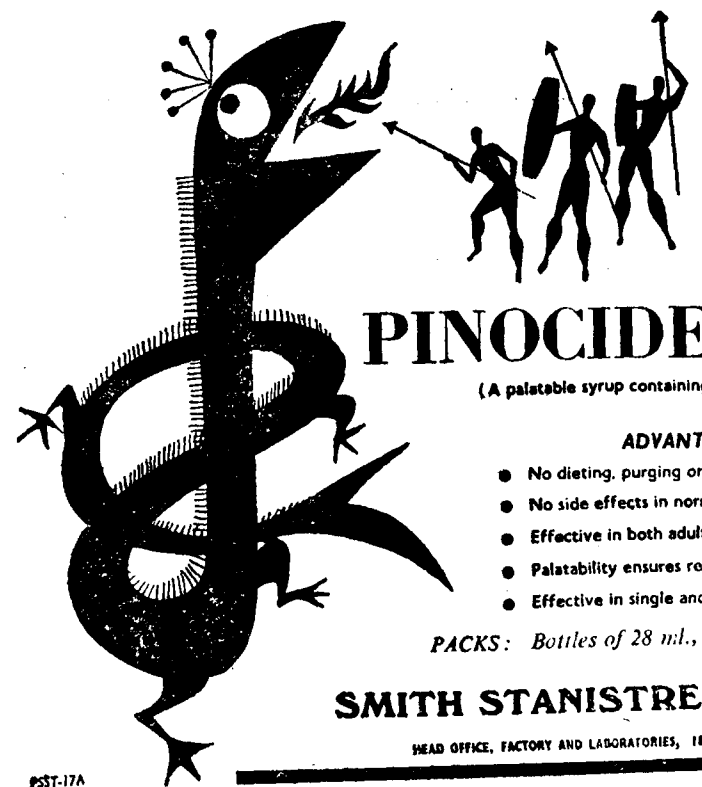
SOLASPIN contains Aspirin in soluble form. It is a highly efficient analgesic, more quickly and easily absorbed due to its solubility. Dissolved in water, a solution of Calcium Aspirin is formed.

SOLASPIN is well tolerated even by sufferers from Peptic Ulcer and will be found particularly useful when heavy and prolonged doses are called for.

SOLASPIN is easy to take, palatable and substantially neutral.

Packings: Tube of 10 & Phials of 50 and 100 Tablets

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**FIGHT
Threadworm
Roundworm
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PINOCIDE SYRUP**
(A palatable syrup containing piperazine citrate)

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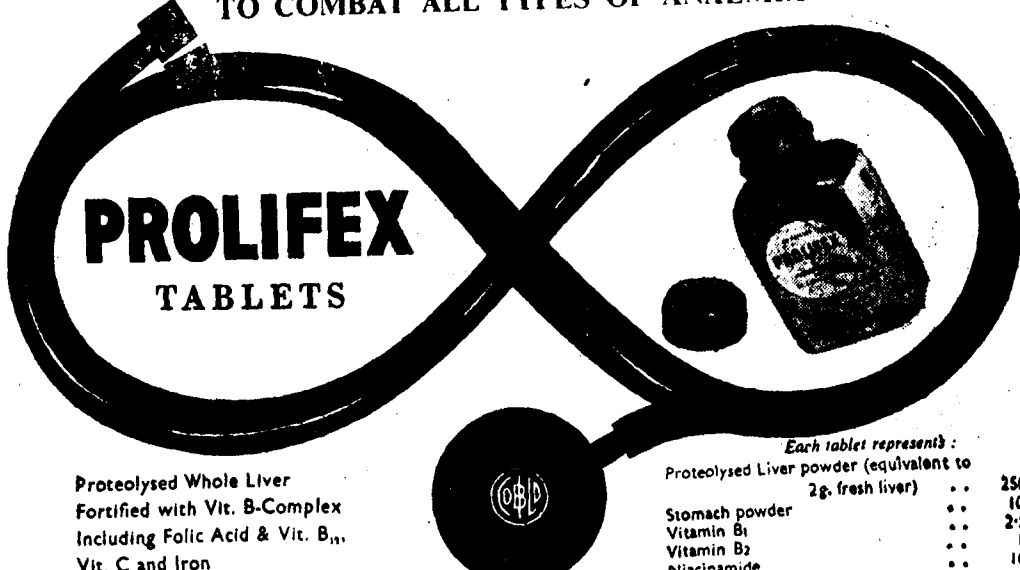
- No dieting, purging or enemas required.
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- Effective in both adults and children.
- Palatability ensures regular dosage.
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TO COMBAT ALL TYPES OF ANAEMIA



**PROLIFEX
TABLETS**

Proteolysed Whole Liver
Fortified with Vit. B-Complex
Including Folic Acid & Vit. B₁₂,
Vit. C and Iron

BENGAL IMMUNITY CO., LTD.
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Each tablet represents:

Proteolysed Liver powder (equivalent to 2g. fresh liver)	250 mg.
Stomach powder	10 mg.
Vitamin B ₁	2.5 mg.
Vitamin B ₂	1 mg.
Niacinamide	10 mg.
Vitamin B ₆	0.5 mg.
Panthenol	1 mg.
Folic Acid	1 mg.
Vitamin B ₁₂	2.5 mcg.
Vitamin C	20 mg.
Ferrous sulphate (exsiccated)	100 mg.
Cobalt nitrate	5 mcg.

In Packs of
50, 100, 500
& 1000 Tablets

NEWS AND NOTES

GRANT FOR VELLORE HOSPITAL FROM U. K. POLIO FUND

The National Fund for research into poliomyelitis and other crippling diseases announced in London on March 1 that it had made grants totalling £ 59,447.

Among the grants is a sum of £ 13,000 for the Christian Medical College and Hospital at Vellore, Madras State, toward enlarging and equipping the department of physical medicine, including the provision of salaries for technicians.

— *British Information Services.*

"AVAFORTAN" — A NEW ANTISPASMODIC & ANALGESIC.

Avafortan is an antispasmodic & analgesic; originally a product of Messrs. ASTA WERKE A-G. of West Germany is manufactured and marketed in India by Messrs. Khandelwal Laboratories Private Limited, 79/87 Kalachowki Road, Bombay-12.

Avafortan combines the antispasmodic & analgesic effects in a single injection. Avafortan also combines the pharmacological effects of atropine and papaverine without the side effects of either.

Avafortan is indicated in urinary & biliary colic, spasms of the abdominal organs, angina pectoris, bronchial asthma, tenesmus, severe migraine, post-operative surgical pains and labour pain.

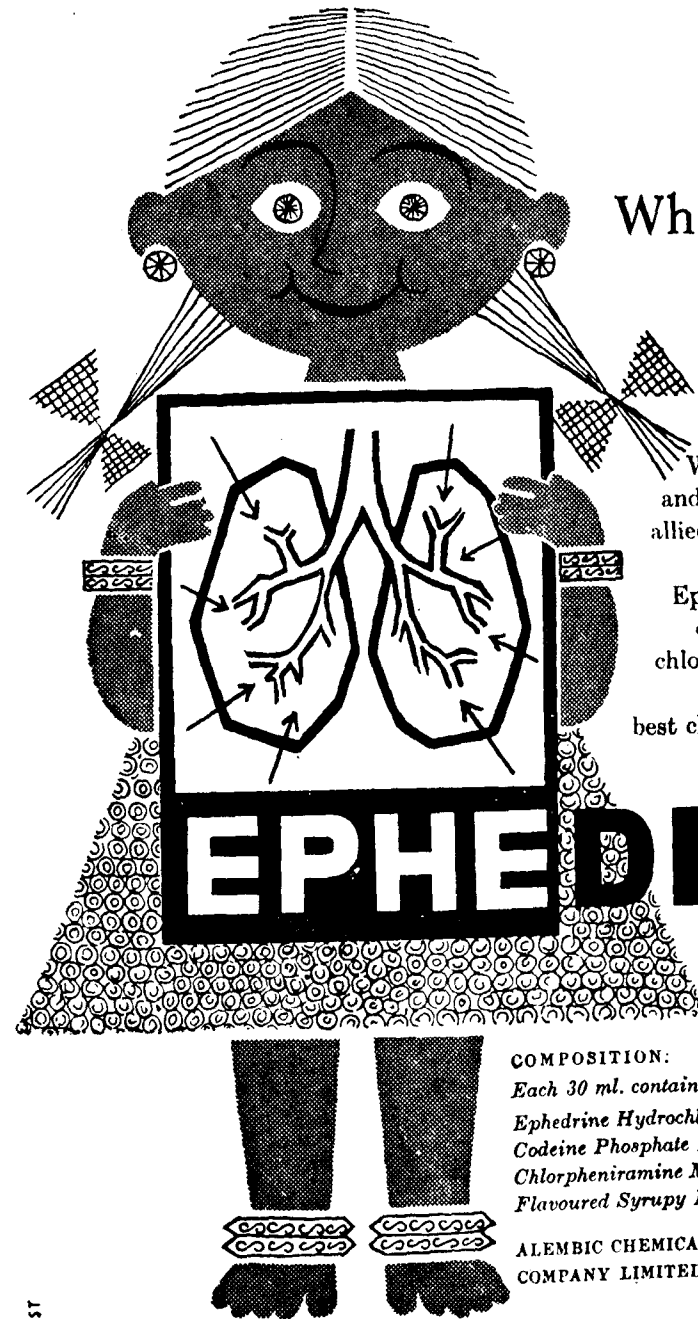
Clinical trials in West Germany have shown that Avafortan is very useful in reducing the period of dilation of the cervix and in producing analgesic effect during delivery.

SEMI-CONDUCTOR THERMOMETER.

You merely have to touch the body with one end of this thermometer, and the needle on its dial will immediately show the right temperature. Its pinpoint end is so small that, if need be, one can measure the temperature of a fly's eye. These properties make it possible to use the semi-conductor thermometer for biological research. The new thermometer has also been approved by medical workers, and with slight modifications the new instrument will be used for the investigations of the internal organs of the human body.

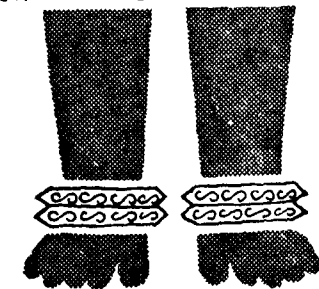
The new semi-conductor thermometer was designed by Leonid Sterin, research worker of the Laboratory of Automation and Remote Control. Mining Institute, Siberian Branch, U. S. S. R. Academy of Sciences.

— *Information Department U. S. S. R. Embassy in India.*



Where did
the cough
go?

With Ephedrex allergic
and spasmodic cough and
allied conditions disappear
quickly. For palatable
Ephedrex syrup contains
ephedrine, codeine and
chlorpheniramine, an anti-
histamine—the drugs
best chosen in the treatment
of such conditions.



COMPOSITION:

Each 30 ml. contains:

Ephedrine Hydrochloride B.P.	60 mg.
Codeine Phosphate B.P.	15 mg.
Chlorpheniramine Maleate U.S.P.	5 mg.
Flavoured Syrupy Base	q. s.

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