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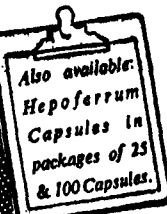
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Iatrogenic Diseases in Children JL

By

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Paediatrics interest and research, together with the advent of the antibiotics and the improved care of the sick child during the past twenty to thirty years, have been effective in reducing the incidence of many diseases, and combating the severity of many others. Nevertheless, a group of diseases of infants and children has come to the fore in recent years, diseases which have been actually but unwittingly produced by doctors themselves. A discussion of these so-called 'iatrogenic diseases' would appear to be of interest.

RETROLENTAL FIBROPLASIA

Improved care of the premature infant has been a special interest of the paediatrician in the past ten years. Special premature baby units have been built or

organised in many obstetrical departments. The newly born infant has been placed in a plastic bell tent or incubator, and oxygen, piped in throughout the unit, has been supplied *ad lib.*, to the baby, whether it was required or not, often for two or three weeks. After all, as oxygen is considered to be life-saving, a little more rather than a little less was thought to be advantageous. Between 1947 and 1950, however, for the first time in this country a new disease, retrolental fibroplasia, was recognised. A large proportion of premature infants nursed under these conditions were found at the age of three to six months to have a white opacity behind the lens, and to be completely blind. Articles published by Terry in the United States between 1942 and 1945 had called atten-

tion to this disease, and various factors in the care of the premature baby, for example, nursing in bright, light administration of vitamins in special diluents, shortage of vitamin E, had been suggested, without proof, as etiological agents.

Undoubtedly, isolated examples of the disease had also occurred in this country before 1950, but if and when it was found that an infant aged 6 to 9 months was unable to see, he was usually referred to an ophthalmologist rather than a paediatrician. Unfortunately, a diagnosis of glioma or retinoblastoma was usually made and the eye enucleated. It was not until 1951 that routine examination of premature babies' eyes while in the nursery revealed a large number of these cases. Moreover, it was recognised that the disease could be identified quite early, and started with proliferation and tortuosity of the retinal vessels and was quickly followed by oedema of the retina and finally retinal detachment, associated with the formation of fibrous tissues in the vitreous. In the final stages there was complete blindness, but the process was temporary and reversible in the early stages. The smaller babies, i. e. those under 3 lb. (1.4 kg.), were most likely to show these signs.

Numerous possible etiological factors were investigated but the incidence of the disease seemed to be linked with the duration of exposure of the baby to oxygen, and the amount used. Those infants nursed in high concentrations (about 90%) of oxygen such as were obtained in the plastic bell tents, or

incubators, were most likely to be affected. It has now been shown (Jefferson, 1952; Forrester *et al.*, 1954) quite conclusively that excess oxygen administration is the cause of damage to retinal vessels and that if the quantity of oxygen is kept low (25 percent or less) and not given for more than three days, the disease is averted. Moreover, this reduced oxygen policy has in no way altered the survival rate of these small premature infants, but in the past three years it has led to the virtual disappearance of this terrible disease. Oxygen, which was formerly thought to be invaluable for premature infants, has been shown to be dangerous to their eyes and not so essential for their life.

KERNICTERUS

Another hazard of the newborn is the condition called Kernicterus. This may occur in the jaundiced baby about the third day of life and shows itself by spasticity, disappearance of the normal Moro and grasp reflexes, and failure to feed. Eventually the child shows a picture of mental defect with deafness and athetotic movements. The condition is due to bile staining of the basal nuclei of the brain and may occur if the serum bilirubin rises above 18 to 20 mg. per cent. as a result of haemolytic disease caused by blood incompatibility of the Rhesus or ABO types between mother and infant.

As was shown by Aidin, Corner and Tovey (1950), however, kernicterus may develop in the premature infant unassociated with any blood incompatibility.

This type of kernicterus occurs later, usually towards the end of the first week, instead of the second or third day, as in full term infants, (Cross, Meyer and Gerrard, 1955). It is due to a higher level of circulating bilirubin in the premature infant, associated with a greater degree of functional immaturity of the liver, and greater destruction of the foetal type of haemoglobin. Vitamin K is usually given to the premature infant at birth because of the greater danger of bleeding, owing to increased capillary permeability and hypoprothrombinaemia. Vitamin K is essential for the synthesis of prothrombin by the liver, and until recently it had been thought that vitamin K was entirely non-toxic and could be safely given repeatedly, in doses of 10 mg. Recent investigations have shown that the naphthoquinone derivatives (of which synthetic vitamin K is one) are potential haemolytic agents, and in these large doses are capable of destroying red cells, increasing the amount of circulating bilirubin in the blood and thereby causing kernicterus by bile-staining of the basal nuclei of the brain (Allison, 1955; Laurance, 1955). It has been noted (Moore and Sharman, 1955) that in experimental animals the haemolytic effect of vitamin K when given in large doses is enhanced by lack or absence of vitamin E and premature infants, if they are artificially fed or have not yet been fed at all, are certainly deficient in vitamin E for the first few days. It is suggested therefore that large intramuscular doses of vitamin K increases the risk of kernicterus in

premature babies by raising the already high level of the serum bilirubin.

These two points must be stressed: (1) the realization that in the past many premature infants may have been converted into spastic, mentally retarded, athetotic defectives by the physician's over-liberal use of vitamin K; (2) the appreciation of the fact that this type of iatrogenic disaster can be prevented by using no more than 1 mg. of vitamin K as a prophylactic agent in the premature baby.

At the International Paediatric Conference at Copenhagen in July 1956, it was reported from the United States that 'gantrism' (sulphafurazole), which had been given routinely to premature infants in many nurseries to try to prevent the spread of infection, has also been associated with an increased number of cases of kernicterus, presumably as a result of a hepato-toxic or haemolytic effect. Here again, the doctor in his zeal to prevent one type of disease, i.e. infection, has unwittingly been the agent for the production of another.

HYPERVITAMINOSIS

It is recommended that new-born babies should receive vitamin supplements in daily doses. The daily doses should be 3000 units of vitamin A and 800 units of vitamin D. In addition, vitamin C, in the form of 25 to 50 mg. of ascorbic acid, daily should be given at the same time. Poisoning due to vitamin A, however, has been described in the American literature since 1944, due apparently to excessive or prolonged

administration of halibut liver oil, or oleum percomorph (Josephs, 1944); Toomey and Morissette, 1947; Caffey, 1950). Recently in Britain a pure vitamin A product has been made available and is being used by many dermatologists for the treatment of certain skin diseases, and now cases of vitamin A poisoning have been described in this country as a result of prolonged administration of such a pure vitamin A product.

Usually there is a lapse of several months between the start of the excessive dosage and the appearance of the diagnostic clinical signs, but the clinical picture is fairly uniform. Initial symptoms are anorexia, fretfulness and itching of the skin. Tender subcutaneous swellings appear over the long bones and scalp; bleeding fissures appear on the lips at the muco-cutaneous junctions, and the liver and spleen are enlarged. Loss of hair and a macular rash, associated with the dryness of the skin, also characterise the condition. Bulging of the fontanelle, vomiting and agitation have been described after a single large dose (350,000 units), so that meningitis may be wrongly diagnosed. The most valuable investigation is the estimation of vitamin A blood level, showing a rise above the normal level of 50 to 130 international units per 100ml. Characteristically, when the vitamin A administration is stopped, the signs and symptoms of the disease regress and there is rapid recovery.

Wolf (1943) confirmed that vitamin D in large doses can cause nephrocalcinosis

in healthy infants, and Lightwood (1952) and Fanconi (1952) have described benign and severe types of idiopathic hypercalcaemia in infancy, which in many ways resemble and are thought to be due to hypervitaminosis D. The clinical picture is well defined: anorexia, vomiting constipation and failure to thrive, with a raised serum calcium and blood urea level. There is disturbed calcium metabolism, and renal failure, but no evidence of rickets (Bonham-Carter *et al.*, 1955). The picture is very similar to the hypercalcaemia produced by vitamin D poisoning. Improvement takes place on a low-calcium diet, with the addition of cortisone to hasten calcium elimination. Vitamin D is usually given in the form of cod-liver oil, but babies fed on a reliable brand of dried milk or evaporated milk, both of which are reinforced by vitamin D, and at the same time receiving cod-liver oil, or 'adexolin' in addition, will obtain much larger doses than 800 to 1000 international units usually suggested as the prophylactic requirement. Not all infants develop this picture when given large doses of vitamin D, but it may be that some infants are particularly sensitive to this vitamin, and unable to tolerate large quantities. We must, therefore, make sure that, whilst infants have enough vitamin D to prevent rickets, they do not receive excessive quantities by simultaneous administration of several vitamin preparations. Furthermore, it is well known that adults receiving milk and alkalis over prolonged periods for the dietetic treatment of peptic ulcer may develop an alkalosis characterized by

anorexia, vomiting and constipation associated with renal calcification and failure—a picture very similar to that of hypercalcaemia in infancy. Now, all infants receive milk feeds for several months, and many of them also receive milk of magnesia for prolonged periods, often for no very adequate reason except that mother or grandmother thinks that the baby is not having enough motions each day. Once the baby is started on magnesia, it seems to become a routine to give it for all feeding disturbances.

The exact etiology of so-called idiopathic hypercalcaemia of infants, and renal acidosis in infancy, is not known, but excessive intake of vitamin D and alkalis may be important etiological factors. It is important therefore, not to prescribe magnesia and, in addition, to stop the mother giving it.

ECZEMA VACCINATUM

From time to time, in hospitals, we see babies with generalised eczema upon which are superimposed the lesions of vaccinia—so-called eczema vaccinatum. The baby is usually severely ill, with high fever, marked toxicity and often superimposed secondary infection. This is due to the vaccination of a baby who already has infantile eczema, or close contact between a vaccinated individual and a younger sibling with eczema. Whilst every endeavour should be made to raise the vaccinal state of the population by advising vaccination of our newly born babies, the presence of infantile eczema is a definite contraindication and the carrying out of vaccination in such a child causes harm and

may even lead to the death of the child.

In this connection might be mentioned the dangers of serum shock following the administration of tetanus antitoxin to the child with a dirty lacerated wound. This could be avoided by the carrying out of active immunization against tetanus in infancy, by the use of triple diphtheria-pertussis-tetanus immunization, which would protect from tetanus the child who has sustained a dirty wound and did not attend hospital for treatment.

PINK DISEASE

Between the ages of six months and two years, many children have phases when they are very fretful and somewhat feverish, and spend their time with their fingers pushed into their mouths. They are said to be 'teething' and many mothers, with or without the advice of the doctor, prescribe a teething powder. The most popular one on the market used to contain 29% of calomel and the relationship between this and pink disease is now established. The clinical picture of pink disease is well known; a child of about one year old who refuses to stand, is miserable and hypotonic with anorexia, extreme fretfulness, and loss of hair and teeth and skin tone. There is often a skin rash and marked tachycardia. Mercury is found in the urine, and usually one is able to get a story of administration of mercurial teething powders preceding the onset of the illness. Unfortunately the giving of teething powder is an old-established practice and is often carried out because

teeth are expected, rather than because the baby is showing any real distress. As a result mercury can be given continually over long periods, with the risk of mercurial intoxication.

Mercury can be absorbed from other sources apart from teething powders. Calomel itself has often been administered to infants in the past as cholagogue or purgative, and mercurial ointments may be another source of trouble. The liquid metal spilt on the floor from a broken barometer or a thermometer has been recovered in the vacuum cleaner sweepings quite a long time after the accident, and has been incriminated as the source of mercury poisoning in the child with pink disease, who had played on that floor. It is significant that if the excretion of mercury is hastened by giving injections of dimercaprol, the course of the disease is shortened.

Since the manufacturers withdrew calomel from teething powders about three years ago, and the danger of the use of mercurial pills and ointments in infancy have been realised, pink disease has virtually disappeared. The only case which I have seen in the past twelve months was that of a child who showed mercury in the urine, and came from a country village, where teething powders of ancient vintage obtained from the local chemist's shop had been administered.

Nephrosis has been reported as a complication of pink disease, and the association of the two diseases has led to the search of mercury in the urine of all cases of nephrosis in childhood

(Wilson *et al.*, 1952). There is no doubt that this disease occur and the fact that mercurial poisoning may be the cause of the disease in some children, and lead to their death, was recently demonstrated in the Coroner's Court in Liverpool.

LEAD POISONING

Lead is another metal which produces a threat to health. Lead colic, due to poisoning, used to be common before it was recognised that children sucked the lead paint from their cot rails or toy soldiers. These sources of trouble were understood and removed, but then it was discovered that babies could get lead poisoning from lead nipple shields prescribed for, and used by, their lactating mothers. More recently, attention has been drawn to the dangers of the habit of older children in sucking iced lollies, which are so popular especially in the summer time. These are made by freezing water and coloured syrups in moulds made of poor quality tin plate, which may have been soldered with lead. Semple has reported from Liverpool (*The Practitioner*, 1953) that these concoctions may contain 11 parts per million of lead, and also copper, tin and zinc in similar high proportions.

ACCIDENTAL POISONING

Acute poisoning in infants and children is almost always the result of an accident. Fortunately, therapeutic mishaps are rare. This accidental type of poisoning seems to be increasing in frequency and since most of the poisons are medicinal in nature the accidents are of particular interest to doctors. The commonest age incidence is one to two

years, and many fatalities have been recorded. Ferrous sulphate, aspirin, antihistamines and barbiturate preparations seem to be the commonest drug involved. One effect of the National Health Service seems to have been to bring medicaments into more homes than ever, thus increasing the risk to children, and, presumably larger quantities are prescribed than formerly, so that more are left lying about the house within reach of the child. In the prevention of these deaths, the family doctor has an important part to play in warning parents about the dangers to their children of these apparently harmless preparations.

BORIC ACID POISONING

Many doctors may recall having seen small infants with large areas of erythematous desquamation, extending from the buttocks and napkin area over the whole body, particularly involving the palms and soles—the so-called 'boiled lobster' appearance. This was often diagnosed as a severe 'nappy rash' but was really an example of exfoliative dermatitis in infancy: so-called Ritter's disease, which used to be quite common. Sometimes a bulging fontanelle with opisthotonos was noted, and a mistaken diagnosis of meningitis made. In those days the eyes of the new-born baby were bathed with boric acid solution, the umbilicus and buttocks were dusted with boric powder and the mouth was swabbed with borax and honey, whilst the mother's nipples were bathed with boric solution. In other words, every effort was made to poison the baby!

Whereas there has been for many years overwhelming evidence proving the toxicity of boric acid, and many fatalities have occurred following its accidental ingestion, only recently has it been realised that the widespread topical use of boric acid as a mild antiseptic agent in the form of dusting powder may also lead to unsuspected trouble because of absorption through the abraded skin (Goldbloom and Goldbloom, 1953; Ducey and Williams, 1953). The usual story is that of a young infant who develops diarrhoea with some excoriation of the buttocks. Boric powder is used locally and is absorbed, producing an increase in the excoriation and intensification of the diarrhoea and vomiting and development of the typical skin appearances.

It is incredible that a drug with such toxic properties and doubtful hygienic value should come to enjoy such popularity, both in the hands of the physician and the medicine chest of the bathroom at home. Here then is another disease caused by our own medication, which could be prevented by abolishing the use of a substance which in any case is a very poor antiseptic, and which could easily be replaced by a safer and more efficient agent.

SULPHONAMIDES AND ANTIBIOTICS

In the administrations to infants and children of sulphonamides, particularly the less soluble preparations, care should be taken lest the therapeutic benefits becomes offset by the dangers of crystalluria. Recently, three children have

been seen in hospital with haematuria going on to complete suppression of urine, due to administration of one of the less soluble sulphonamides. Ureteric catheterization and washing out of the renal pelvises was required before urine secretion was restarted. If the child is vomiting or taking insufficient fluids, these complications of sulphonamide therapy must be remembered, and can be easily avoided.

The beneficial effects obtained by the use of a wide-spectrum antibiotic have also brought hazards to the child. The normal bacterial flora in the gastrointestinal tract is so altered that the synthesis of vitamin K and the B complex is diminished or abolished. As a result, monilial (thrush) infection may flourish and may become generalised with fatal consequences. Moreover, an acute form of ulcerative colitis, due to staphylococcal infection, is increasingly reported in association with the prolonged use of these wide-spectrum antibiotics. Apparently, the staphylococcus proliferates in an environment which has been rendered free of other bacterial organisms. It is important therefore not to use all these powerful drugs for more than a few days, and the addition of vitamin B complex is an important adjuvant to therapy.

Fatal aplastic anaemia was recognised in the United States as a sequel to prolonged administration of chloramphenicol before it was realised in this country that this antibiotic could produce such a catastrophic disease. One of the first

cases of fatal aplastic anaemia to occur in this country was reported from my own department, and occurred in a young child who had been given chloramphenicol for a month for the treatment of pertussis (Wolman, 1952). Nowadays it is realised that this drug should not be given for more than five days and should be reserved for special conditions such as typhoid fever and influenzal meningitis, where its use is most beneficial.

STEROID THERAPY

Examples of Cushing's syndrome are being repeatedly seen among children in hospital. These are the children who develop obesity, 'moonface' hirsutism, hypertension and glycosuria while receiving treatment with corticotrophin or cortisone. These hormones are now being used for the treatment of rheumatic fever, the nephrotic syndrome, leukaemia and many other diseases. Fortunately, the abnormal side-actions of the hormones are usually reversible and temporary, but occasionally permanent diabetic changes and psychological disturbances may result from prolonged treatment. Thus, while realising the great value of these preparations, it must be understood that troubles may arise occasionally from their side-effects.

IRRADIATION HAZARDS

Finally, mention must be made of the harm which can be caused by the doctor to the unborn child. It has been known for sometime that excessive exposure of the pregnant woman to X-radiation in the early months of pregnancy is liable

to cause microcephaly and other congenital defects in the foetus,¹ but evidence is now forth-coming (Stewart *et al.*, 1956) that leukaemia and malignant disease

are considerably more common in children whose mothers have had x-ray examination of the abdomen during pregnancy.

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"Substantial progress" is reported in the environmental sanitation project in Trivandrum, Kerala. In a preliminary survey it was found that only 3.75 per cent of houses in the project area had latrines. Today the figure has risen to 13 per cent. Latrines in use number 1,886 and 3,660 slabs have been sold. Latrines are being put into service at the rate of about ten every day. The Government has recommended the adoption of the water seal latrine slab used in this project throughout the State.

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May we therefore request the publishers to send us their publications for review at their earliest convenience.

—Editor

The Investigation and Treatment of Sterility in Gynaecological Practice

By

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The great emphasis which has been laid on family planning in India has pushed the problem of infertility and sterility to the background. Yet, the gynaecologist meets with a case now and again of a couple who wish to have progeny but have been unsuccessful. Such problems have to be investigated with great tact, sympathy and common-sense. There is a trend now a days to rush off into performing elaborate investigations on a woman without any attempt whatever to consider the biological aspect of the problem. This is to be deprecated. James Mathews Duncan (1866), distinguished obstetrician of St. Bartholomew's Hospital, believed that it was wrong to start investigating any couple who have not lived together for at least four years after marriage. Although in many cases children are born after this time, it might be worthwhile making preliminary examinations of both the husband and wife before this period. It is desirable to exclude gross deviations from normal function and structure.

If we view the whole problem from a biological view it is apparent that both the partners must be healthy. Without a careful examination of the male partner it seems unwise to embark on

elaborate and risky methods of investigation on the female.

EXAMINATION OF THE FEMALE PARTNER

Good history taking is important. The genital health as well as the reproductive capacity is influenced to a large extent by the state of the general health of the body. In obtaining history, one should make a note of points such as age, occupation, duration of married life and sexual and other habits. One should find out whether the patient has been pregnant and if so, whether there had been any complications. The character of the menstrual periods and the presence of vaginal discharge or other related symptoms should be enquired into. It is also important to know whether any partner has been open to infection with venereal disease. A thorough general examination should always precede an examination of the genital tract. The expression of the patient as well as the general appearance should be noted. The general stature and the development of the external secondary sex characters should be noted. Evidence of endocrine disturbances such as thyroid deficiency and obesity should be looked for. The abdomen should be looked at to see if

there are any scars of a previous operation or whether any abdominal swellings are present. The urine should be examined both for sugar and albumin. The blood pressure should be taken.

After a general examination a gynaecological internal examination should be performed. Evidence of infection such as acute Bartholinitis and vaginal discharge should be looked for. The urethra should be milked to see if it discharges pus. If it does, it points to the presence of a gonococcal infection. During bimanual examination undue elongation of the cervix, abnormalities in uterine development, tenderness of the adnexae and other abnormalities should be noted. Occasionally, diseases such as fibromyoma or endometriosis may be found. An examination with a speculum and a direct inspection of the cervix should never be omitted. Conditions such as an erosion of the cervix and purulent cervical discharge should be noted. The object of this examination on the female is to discover whether any gross deviations from the normal are present. If nothing abnormal is discovered it is a wise step to examine the husband before going on to perform further complicated investigations.

EXAMINATION OF THE MALE PARTNER

A general examination should always precede inspection of the genitalia. The following conditions should be excluded in the examination of the male genital organs: gross abnormalities of the penis, hydrocele, varicocele, pendulous scrotum, small testicles, abnormally situated testes

with epididymitis, lack of sensation or a beaded vas deferens. The male spermatozoa should be analysed and the following characters should be noted: volume of ejaculate, number of sperms per ml., motility at six hours and the morphology of the sperms. Many gynaecologists prefer to get tests performed on a post-coital specimen rather than to get the male partner to provide the ejaculate. In performing these tests attention is to be paid to details such as having a fresh specimen conveyed in a sterile container. In certain cases, it may be necessary for additional investigations such as a testicular biopsy.

SPECIAL INVESTIGATIONS ON THE FEMALE PARTNER

Provided that the sperms are healthy and are being injected into the vagina during the sexual act, certain conditions have to be fulfilled before it can reach the ovum and result in fertilisation. The female must produce an ovum. This must be discharged into the peritoneal cavity (ovulation) and then swept into the fallopian tube. Meanwhile the sperms have to enter the cervix, cross the lumen of the uterus and enter the tube which contains the ovum. Fertilisation takes place here. The fertilised egg then travels down into the uterine cavity and for successful nidation the endometrial bed of the uterus has to be suitably prepared. This preparation is brought about by the action of hormones. In the investigation of sterility one has to determine therefore whether ovulation is taking place, whether the lumen of the uterus and the tube is

patent, see whether the sperms are able to penetrate the cervical mucus barrier and then traverse across the lumen of the uterine cavity.

The only certain way to determine whether ovulation is occurring is to inspect the ovaries and to visualise the ruptured ovarian follicle by culdoscopy. The other method is to isolate the ovum from the uterine cavity. Neither of these methods are practicable, and so the gynaecologist has to rely on circumstantial evidence. He does this by means of a study of basal temperature recordings. This needs intelligent cooperation from the patient but if temperatures have been steadily maintained it is recognised that just before ovulation there is a drop in the temperature (pre-ovulatory dip). After ovulation there is a sharp rise in temperature. The other evidence which he can find is by studying the pattern of the endometrium at different times. It is known that the pre-menstrual endometrium is of the proliferative type. The endometrium of the post-ovulatory period is secretory in type. If there is a sudden alteration in the character of the endometrial pattern it is strongly suggestive of ovulation having taken place.

In order to find out whether the tubes are patent or not, there are two methods commonly used. The first is called the tubal patency test. The second is hystero-salpingography. In tubal insufflation; carbon dioxide is blown through the uterus by the use of a special nozzle inserted into the cervix. The pressure at which this gas is blown inside is re-

corded by a manometric device. The pressure rises up to a point and then falls steeply as the gas rushes through the tubes into the peritoneal cavity. If a stethoscope is applied at this moment to the abdominal wall a rustling sound of gas entering the peritoneal cavity will be heard. When this gas reaches the diaphragm it gives rise to pain which is experienced by the patient in one or other shoulder tips (referred pain). Sometimes the gas does not enter until the pressure reaches a certain level and only then does so. This is suggestive of temporary obstruction of the tube due to spasm. When the tubes are completely blocked, the pressure of the gas which is injected steadily rises and the gas does not pass through at all but the pressure must never be allowed to rise beyond a safe limit. By the method of tubal insufflation an idea can be obtained whether the tubes are patent or not, but obviously it is impossible to diagnose whether an individual tube is blocked or not.

Hystero-salpingography consists of injecting a radio-opaque substance into the uterus so that it outlines the lumen of the uterus as well as that of the tubes. By studying the pattern which it leaves, it is possible to diagnose various abnormalities or lesions obstructing the cavity of the uterus or the lumen of the fallopian tube. This method of investigation is of very great value and in skilled hands can yield a lot of useful information.

TREATMENT

When sterility is being investigated or treated it must be remembered that in

most cases it is not one or the other partner that is wholly to blame. In most instances it is a summation of unfavourable factors in both partners. When any ailment is discovered in the male partner, he should be referred to a competent urologist. The treatment to be given to the female partner depends very largely on what abnormality is found during examination. There is little doubt that attention should be paid to improve the general health. In cases where intercourse is painful (dysparuenia) or impossible because of vaginismus, the hymen should be excised. This is a minor surgical procedure. Sometimes a course of dilatation using vaginal dilators may be prescribed. If the patient is intelligent or enlightened enough to discuss her problems relating to intercourse it may be possible to advise her to adopt a posture after ejaculation which enables the semen to be retained in the vagina for as long a time as possible giving the spermatozoa an opportunity to enter the cervical canal. When it is found that the chemical character of the cervical secretions are such as to prove hostile to the sperms it might be possible to correct this by altering the chemical composition. There are several substances available and these are made up of a mixture of dextrose, potassium chloride, sodium chloride and calcium gluconate dissolved in water. When a patient suffers from mental apprehension it is known that this may be a cause for the tubes to go into spasm. Apart from psychological advice, a sedative might prove effective by diminishing fear and

encouraging relaxation. Organic lesions of the cervix such as an erosion should be cauterized. It is dangerous to perform a tubal insufflation or a hysterosalpingogram, if the cervix is infected. Stricture of the cervix can be treated by dilatation.

Fibromyomas of the uterus are some times held responsible for sterility. It is difficult to know how fibromyomas can actually interfere with conception unless they actually obstruct the path which the sperms have to take. Nevertheless it has been established that many women who have fibroids have been enabled to conceive satisfactorily after removal of the tumours. When a submucous polypus is present it should be removed. Occasionally investigations reveal the presence of a double uterus. It is difficult again to explain why conception should not occur in this condition. Some authorities advise unification by a plastic operation. An operation should not be undertaken without determining the exact nature of the malformation as well as whether one or both horns are patent. Malpositions of the uterus such as retroversion or retroflexion are blamed but unless there is some additional pathology, the mere correction of the position of the uterus probably does not make any substantial difference. It may be that when the uterus is retroverted and the cervix points away from the seminal pool in the posterior fornix, the sperms cannot enter; and in such cases the adoption of a knee-chest position may be advised (Crosse 1950). With the establishment of endometrial biopsy as a method of investigation for cases

of sterility, an increasing number of cases of symptomless pelvic tuberculosis has come to light. When tuberculosis of the female genital tract is present, the prospects of conception are not exactly bright. The treatment is that of the disease. Although sporadic reports in the literature occur from time to time of conception following medical treatment in a case of established tuberculosis, in actual fact sterility due to tuberculosis is almost invariably irreversible.

Advances in modern surgical treatment offer those patients in whom there is an organic block of the tube some hope. If the patient is of child bearing age, has at least one functioning ovary, there are no causes other than a blocked tube to account for her sterility, the possibility of pelvic or abdominal tuberculosis has been excluded, her husband has been carefully investigated and there is no evidence whatever of active infection of the tube, it is permissible to embark on plastic operations to restore the continuity of the tube. These operations consist mainly of salpingolysis, salpingostomy or tubal implantation. In salpingolysis when the tube is found to be bound down by peri-tubal adhesions, these are released. Special care is taken to see that the fimbrial end of the tube and the abdominal ostium are in close relation to the ovary. In salpingostomy where an occlusion is at the fimbrial end a plastic operation is performed to evert the tube so that the opening is made patent.

When the isthmus or the interstitial part of the tube is blocked, that portion

of the tube is excised and the proximal end of the tube is then inserted into the uterine cavity and maintained in its new place. These are complicated operations to be performed by experts. It is not a sort of thing for general practitioners or a "try-it-and-see" surgeon. These operations hold out hope because in many cases which have been very carefully selected and on which the operation has been skilfully performed, conception has resulted.

However much our knowledge of endocrinology and other physiological processes which govern reproduction may advance, there is no doubt that the general principles in the investigation and treatment of a sterile couple will remain unchanged. We have to accept finally that in a small percentage of cases even the most elaborate and detailed investigations may reveal nothing of importance and it is for cases like these that certain procedures which raise public interest and controversy such as artificial insemination have to be considered.

The general practitioner should realise that he is in the fore-front in the investigation of a sterile couple; because he, more than a specialist can command his patient's confidence and obtain an intimate, detailed and reliable history. Very often he can offer good advice based on sound common sense. When the problem is one which is distinctly beyond his compass he should realise what hope a specialist in gynaecology can hold out and have no hesitation in seeking his aid.

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MEDISCOPE

*Early Diagnosis of Cancer

By

Dr. S. KRISHNAMURTHI, M S.,
 Scientific Director, Cancer Institute, Madras

It is usual to say that Cancer is a dark disease, ill understood and uncontrolled. This might have been true a decade ago but it is certainly not so today.

Cancer has been defined in many ways, as uncontrolled purposeless growth etc, etc. These definitions are in my opinion not entirely correct, for cancer is not entirely uncontrolled and definitely not purposeless. The cancer cell carries in itself, the essential characteristics of all life, namely to perpetuate its species and to survive.

Cancer though apparently evilth the limited vision of man, need not necessarily be so when viewed from the broader view point of evolution. It is an inherent characteristic of all living cells to suffer mutations and evolve cells with different characters and stronger survival power. It is very probable that the cancer cell is such a random mutation, a defensive reaction elicited by the impact of harmful extrinsic forces, intended to create a stronger race but unhappily and unwittingly causing the very result that it was intended to prevent.

Viewed from the background, it will be obvious that Cancer is not a disease that can be prevented, for though the carcinogenic factors could be controlled

in some cases, not all of them will be in our power to eliminate. We cannot control a background of cosmic radiations nor can we control the metabolic aberrations, endocrine or otherwise, that can happen in the human system.

It is, therefore, of paramount importance that Cancer, though in itself bearing no malice is yet a foe to be combatted. The fundamental element in the fight against Cancer is the prevention of metastases. We have not yet reached the stage where we are able to control the occurrence of metastases and therefore it is essential that we should act before metastases can occur.

This brings us to the purpose of this paper, "early diagnosis." An analysis of 202 cases of Carcinoma of the oral cavity carried out a year ago, revealed the following tragic figures.

SLIDE I

i. Early	8%
Late	92%
ii. Metastases : Lymphnodal	100%
No lymphnodal metastases	0%
iii. Supraclavicular	6%
Bilateral	27.5%
Fixed	23.5%
Blood stream metastases	2.5%

The next slide gives you the figures of five year results in Carcinoma breast and

* Read at the 13th Madras State Medical Conference.

DECEMBER '58

325.

the Uterine cervix in cases with and without lymph nodal metastases.

SLIDE II FIVE YEAR CURE

	Lymph node free	Lymph node metastases
Marie Curie		
Uterine Cervix.	77.27%	24.9%
Breast Cade.	87%	29%

These figures make the need for an early diagnosis self evident. It would be wiser at this stage to clarify the concept of early diagnosis. I would consider it early enough if a cancer can be diagnosed before it has spread beyond the tissue or organ of its origin or disseminated to lymph node or via the blood stream. Cancer of the oropharyngeal cavities, the uterine cervix and the breast constitute 76% of all cancers in our state and these are cancers which unlike the leukaemias, are essentially local diseases at the outset. A diagnosis of these diseases in the stage that I have defined would eliminate nearly 70% of Cancer deaths though not the incidence.

In recent years, the concept of early diagnosis has been still further extended to states of pure intraepithelial alterations. But it is my experience that not all apparently intraepithelial malignancies progress to established cancer and quite a few of them can be reversed by what is usually called conservative treatment. I would, therefore, not proceed to radical treatment in the pure intraepithelial malignancy. I would confine the term 'early' to the limits of my original definition.

It is an unfortunate fact that in our country an early case is a rare phenomenon. The responsibility for this is certainly the ignorance of our people, but an analysis of our case histories has revealed that the medical profession is not entirely blameless.

SLIDE III RESPONSIBILITY FOR DELAY IN DIAGNOSIS.

Patient's ignorance	70%	} approximately.
Family Physician	25%	
Physician consultant	5%	

It is, therefore, our foremost duty to rid ourselves of our weaknesses whilst striving at the same time to dispel the ignorance of the people.

The early diagnosis of Cancer, in the vast majority should not present any insurmountable difficulty. A careful clinical examination, a rectal examination, a vaginal examination, a careful intraoral examination, a simple biopsy or a smear are all that are necessary to make a diagnosis. The next slide will give you examples of what devastating consequences could ensue from a mild neglect of a simple examination procedure.

SLIDE IV TEMPORISING TREATMENT

1. Carcinoma of the Rectum treated as Amoebic dysentery 18%
2. Carcinoma of the Rectum treated as Piles 8%
3. Carcinoma of uterine cervix treated with hormones 45%

4. Carcinoma of Penis or Mouth treated as Chronic ulcer with antibiotics 96%
5. Carcinoma stomach treated as peptic ulcer 80%

I need not elaborate further on the technic of a rectal or vaginal examination. But there are two studies which are easy and simple office procedures and at the same time of the greatest value in an early diagnosis. The first is the biopsy. The punch that I demonstrate is a simple and a cheap equipment which anybody could possess. For a diagnostic biopsy from the mouth, skin, or anal canal or cervix, no anaesthesia is necessary. A quick firm bite and the procedure is over. The piece thus removed has only to be placed in a penicillin vial containing 3% formalin in normal saline (about 2ccs. of commercial formaline to 10ccs. of saline). The bottle could then be sealed and sent to the nearest pathology laboratory. The Cancer Institute would only be glad to place its facilities for such diagnostic work at the service of the profession. In this connection, I cannot condemn emphatically enough the habit of placing such material in rectified spirit or in normal saline.

The other procedure is the study of the smears of secretions from the offending sites. The smear technic as it has been called is of the greatest value in the study of the uterine cervical cancer and to a lesser extent in the diagnosis of bronchogenic carcinomas. The procedure is a very simple one where the uterine cervix is concerned. A speculum

inserted in the vagina, a good brushing of the uterine cervix and the surrounding region with an ordinary paint brush, pressing the secretion on to a slide and placing the slide in a mixture of equal parts of either and rectified spirit is all that is necessary. The slide can then be sent in the fixative to the nearest laboratory and report can be obtained in 48 hours. To obtain similar smears from the bronchi or the stomach or colon involves a more complicated manoeuvre. The two brushes I have here are one for gastric brushing and the other for colonic brushing. We shall demonstrate the technics when the delegates visit the Cancer Institute.

In cases where such simple methods are not likely to yield results, the wisest thing would be to refer the cases to the nearest diagnostic centre.

Having outlined the simple diagnostic procedures that any physician could perform, I would like to define the symptomatology of malignant disease. The most vital thing to remember in malignant diagnosis is that Cancer as such has no specific symptom. The earliest symptom of cancer is the persistent dysfunction or disfigurement of the organ of its origin. Thus in the stomach, anorexia and nausea; in the rectum, tenesmus and mucosanguinous discharge, and in the colon progressive constipation or frequent diarrhoea; in the uterine cervix bleeding on coitus; in the breast or mouth, a lump or an ulcer. Please remember that these symptoms do not indicate cancer but at the same time powerfully suggest the need for a thorough

examination, especially if the symptoms do not improve with scientific treatment in a month's time. Kindly remember that "pain" and "glands" are not criteria of Cancer but indications of the transition across the lethal border to possible incurability.

No age is exempt from Cancer nor sex. It is time that the fallacy of the "cancer age" was forgotten.

I shall now briefly mention the special methods of investigations that are employed at the Cancer Institute for early diagnosis. They are:—

- i. Radiological.
- ii. Endoscopy.
- iii. Histological and Cytological.
- iv. Hormonal and Chemical assays of blood and urine.

The day is long past when a diagnosis of Cancer could arouse us to no greater

activity than prayer and stir no stronger emotion than despair. It is well that every one should realise that Cancer is a curable disease—more curable than nephritis, hypertension, cardiac disease or diabetes. But as in all diseases, early diagnosis is the key to successful therapy. While in tuberculosis and leprosy the margin of available safety is fairly wide, in cancer, it is very narrow indeed and whether the patient shall pass this narrow strip into the valley of the shadow of death will depend as much on the intelligence of the patient as on the knowledge, ability, care and integrity of the family physician.

And before I close I would like you to remember one dictum in the diagnosis of malignant disease "that Cancer is curable only when it is still a clinical suspicion and not a clinical diagnosis".

The development of primary health centres and sub-centres in Saurashtra is described by WHO as "unique" and "by far the most successful in India". When the plan of operations was drawn up there were only six primary centres. Twelve more were set up in 1956 and six more by the end of 1957, a total of 24. By the end of 1957 the number of sub-centres, each staffed by a qualified midwife and a trained *dai*, had reached 120.

Enzymatic Zonulolysis

ANOTHER ADVANCEMENT IN CATARACT SURGERY

(Preliminary report)

By

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Just a few months ago, ophthalmologists could hardly imagine that the lens could be easily delivered and detached by a nontraumatising chemical enzyme. It is because of Dr. Joaquin Barraquer of Barcelona (Spain) who carried out extensive researches and ultimately achieved this end of Enzymatic Zonulolysis by means of a selective innocuous action of a pure enzyme called "Quimotrase of Alpha chymotrypsin" on suspensory ligament.

Alpha chymotrypsin is a protein which is extracted from veal's pancreas under the form of chymotrypsinogen. It is then activated and purified until crystallised chymotrypsin is obtained. The so called Alpha type is characterised by its greater chemical stability and by its more steady diffusibility through the tissues.

It has been found extremely useful in a number of conditions, but its selective action on the Zonule without any alteration of any other structures of the eye has been well demonstrated by Barraquer and his co-workers. Pieces of eye tissues submerged in 1 in 5000 solution of Alpha chymotrypsin during several hours do not show any action, neither to microscopical nor histological

careful examination but it induces Zonulolysis.

TECHNIQUE OF OPERATION

Preparation of the patient by local anaesthesia, Vonlint akinesia and preplaced corneo-scleral stitches is the same. After the incision is given, 3-4cc of Alpha chymotrypsin 1 in 5000 solution is introduced into the posterior chamber slowly between lens and iris by a fine syringe fitted with a blunt lacrimal needle. Now one should wait for 3 minutes because during this time the Zonule is lysed and the lens shows increased sphericity and mobility and it is ready to be detached. Peripheral small iridectomy can be done during this time. Now the lens can be extracted by suction tip, Barraquer erisophaque (20 mm Hg pressure) or even by Smith method of expression without any danger of vitreous loss or other complications. After this extraction, the chamber may be washed with 1 in 10,000 solution of acetyl-choline which induces miosis and also washes away all traces of any solution of Alpha chymotrypsin. The stitches can be tied and Penicillin injection given subconjunctively before giving a Binocular Bandage.

RESULTS

We have recently got this enzyme through Dr. M. P. Mehrey who was in Barcelona and we are trying it in many cases to determine the minimum effective concentration to lyse the Zonule in our country and evolve a safe method in our hands to extract the lens. It is really an advancement in cataract surgery particularly useful for young individuals etc.

PRECAUTIONS

Care must be taken that neither in the syringe used for the enzyme nor any other instruments employed are there any traces of Alcohol or other chemical agent that inactivate the enzyme.

(2) The enzyme solution should be freshly prepared. Solutions older than 6 hours should not be used.

(3) After the injection of the enzyme, one should wait for at least 3 minutes during which time complete zonulolysis takes place, otherwise injection may be repeated.

(4) Enzyme does not destroy the synechias so if there are posterior synechiae these should be dealt with in the usual way.

(5) In spite of the fact that enzymatic solution becomes inactive in vivo

by normal anti-chymotryptic agent, it is deemed advisable to wash away the chamber by normal saline solution or of by Acetylcholine solution.

ADVANTAGES

(1) The intra-capsular extraction is possible at any age most suited for young people and myopic persons.

(2) Renders extra-capsular extraction unnecessary and in consequence its inherent complications of capsular retraction, secondary cataract irido-cyclitis etc., are eliminated.

(3) The following accidents that sometimes occur during and after ordinary intra-capsular extraction are eliminated.

- (a) Tearing of the capsule.
 - (b) Traumatic irido-cyclitis.
 - (c) Loss of vitreous due to traction and pressure exerted.
 - (d) Detachment of the Retina as a late complication due to loss of vitreous and excessive traction.
- (4) It advantageously substitutes the mechanical Zonulotomy technique of direct separation of Zonule.

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Cardiac Emergencies in General Practice

By

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Heart disease is by far the most common cause of natural death in the world today. It is responsible for about two-fifth of all such deaths. Both incidence and mortality curves have been rising steadily for many years, which is not explained by aging population or by better control of infective fevers, pulmonary tuberculosis, pyogenic infection etc. Ischaemic heart diseases particularly is becoming more frequent.

The symptoms of heart diseases vary according to the nature of cardiopathy and the physiological disturbances in the circulation that results. It should be understood that heart diseases may be very severe without any symptoms whatsoever, i.e., a silent cardiac infarction on the other hand a patient of ordinary dyspepsia or of left inframammary pain presents as cardiac invalid. There are relatively few symptoms indicating cardiac emergencies. They are as follows:—

1. **Dyspnoea of Effort or Paroxysmal Dyspnoea** is the first and most important symptom of cardiac failure whether due to valvular or myocardial disease.

2. **Pain**: Precordial pain is due to occlusive coronary disease leading to cardiac ischaemia.

3. **Palpitation**: It is awareness of heart beating due to hyperactivity of heart action either in rate or force or due to arrhythmias.

4. **Syneope**: May be a presenting symptom of heart disease.

In considering cardiac emergencies the major symptoms i.e., dyspnoea, pain, palpitation and syncope give a clue to the cardiac pathology and as such direct the Physician towards proper management of their patients and thus saving human life.

DYSPNOEA OR BREATHLESSNESS

This is the most important and most common of all the symptoms relating to Heart diseases. Various other causes like Hysteria, Diabetic or uraemic acidosis, Pulmonary interstitial fibrosis and anaemia are to be excluded. Paroxysmal dyspnoea due to heart failure is termed "Cardiac asthma". This clinical syndrome ranges in severity extending from urgent acute Pulmonary oedema to transient nightly attacks of cough, wheezing and breathlessness. Although these paroxysms may occur in cases of mitral stenosis, they are commonly an expression of left ventricular failure which may be due to:—

Paper read before I. M. A. Sitapur Branch

(i) Systemic hypertension, (ii) Aortic valve disease, (iii) mitral incompetence or (iv) Myocardial infarction.

CLINICAL PICTURE

The patient is most commonly in the second half of life. The clinical picture varies greatly depending on the acuteness of perception of the individual and the degree of left ventricular failure. The patient may present in the four following manner:

1. Undue breathlessness on effort,
2. Orthopnoea: patient adopts the upright or sitting position to breathe comfortably.
3. Paroxysmal cardiac dyspnoea or "cardiac asthma".
4. Acute Pulmonary oedema:

We will consider 3 & 4 which are cardiac emergencies. Cardiac Asthma occurs at night. Patient awakes with a feeling of suffocation and sits bolt upright gasping for breath. There is often a history of an anxiety dream immediately before the attack. Characteristically patient seeks an open window or may walk in an agitated way. In simple orthopnoea it brings immediate relief and he may return to sleep without medication but in paroxysmal cardiac dyspnoea the feeling of suffocation increases and coughing and wheezing are commonly present this attack lasts for 10 to 20 minutes.

In more severe cases, patient may complain of palpitation or faintness. The skin is pale, cyanosed and cold, sweating is profuse. The blood pressure and venous pressure are both raised.

The attacks usually subside spontaneously, but may be repeated nightly or at interval of days and weeks. Attacks may follow undue vigorous exertion during the preceding day or an injudiciously large meal with greater salt intake during the preceding evening or high excitement including intercourse. There may be a sense of constriction in the chest, cough and expectoration of blood tinged watery mucus. Breathing becomes extremely difficult and wheezy. Relief is mostly spontaneous occurring within an hour.

In pulmonary oedema the dyspnoea is worst and there is often precordial pain respiration is noisy and accompanied by coughing and expectoration of copious mucus tinged with blood. Cynosis develops from asphyxia caused by transudate. Mental confusion may supervene.

In some patients distress may be accentuated by the occurrence of cheyne-stokes periodic respiration in which during apnoea phase patients falls back on pillow with closed eyes and is aroused by terrifying distress in hyperpnoea.

Physical examination shows signs of bilateral basal pulmonary congestion with rales, radiological evidence of increased quantity of blood in the lungs, a raised left atrial pressure and prolonged pulmonary circulation time. The diagnosis is supported by Gallop Rhythm, pulses alternans and cheyne-stokes breathing.

PATHOGENESIS OF CARDIAC DYSPNOEA

1. Pulmonary Engorgement: Two

work to increase the venous return to the right ventricle.

Reabsorption of tissue oedema

(b) Adoption of horizontal position removing the influence of gravity and increasing the venous return as much as by 500 ml (McMichael 1939).

These two factors increase the venous filling pressure which stimulates the Right ventricle (according to Starling's law) to pump more blood into the lung, but the left ventricular output does not keep pace with the right, more so in presence of left Ventricular failure the extra engorgement due to horizontal position proves critical. The congestion of the pulmonary vascular bed results in transudation of the oedema fluid into the alveolar walls and cavities progressively reducing the vital capacity. While the emergence of fluid on the sensitive bronchial epithelium stimulates the cough reflex as well.

So either the reduced vital capacity or the cough awakens the patient. The intense effort of breathing and cough aggravates the cardiac embarrassment.

2. Capillary permeability is increased by infection and anoxia (Maurer) encouraging pulmonary oedema during the attack (Drinker 1945)

3. Bronchospasm is a complicating factor producing increased ventilating difficulty and encouraging hypoxia.

It is not clear why the attacks terminate spontaneously. The great respiratory struggle, the mental anguish, the increased anoxia and bronchospasm all

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tends to encourage transudate adoption of upright position the right direction. This is reduction in venous return so labouring left ventricle can gradually overtake its debt, cleaning the pulmonary congestion below the critical level. Another factor may be acute hypoxia causing pulmonary vasoconstriction (Litjestrang 1948) probably leading to active pulmonary hypertension terminating the attack by reducing the output of Right Ventricle. In worst cases the vicious cycle progresses and the patient dies drowned in his own pulmonary transudate.

TREATMENT

The treatment of cardiac asthma is (i) Immediate (ii) Long-term management.

1. Immediate Treatment:
The drugs useful in dealing with the acute attack are:
1. Morphia,
2. Pethidine (Dargactil (Chlorpromazine))
3. Aminophylline.

The role of morphia is to reduce the sensitivity of the cough reflex and respiratory reflexes acting through vagus. Secondly it calms the apprehension and restlessness.

With these effects achieved venous filling pressure is reduced thereby the right ventricular out-put is lowered giving opportunity to the left ventricle of clearing the congested pulmonary vascular bed. The effects must be

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(Given with maximum certainty without delay as severe attack may be regarded as critical endangering life. But the cases of cardiac dyspnoea with marked cynosis or pulmonary oedema, it is of grave risk to give ordinary dose of morphia. In these cases much smaller dose should be given as trial dose and after watching for about $\frac{1}{2}$ hour a supplementary dose repeated. Pethidine is of much greater help in these cases. Specially when the bronchial spasm is also a factor in this emergency. For an average weight individual $\frac{1}{4}$ gr. (15 mgrm.) of morphia is given intravenously and the same amount sub-cutaneously. Atropine is of no use.

As already mentioned risks about the use of morphia pethidine is becoming a drug of choice. It is a safe and satisfactory therapy. Intravenous injection of 50 mgm. of pethidine is given as the initial dose followed by 50 mgm. intramuscularly. I use Largactil 50 mgm. ampule intramuscularly following pethidine injection. This drug has very marked emotional sedation effect without producing unconsciousness. It potentiates the action of Pethidine. A combination of these two drugs have acted excellent in almost all cases. Following are the advantages of these drugs over morphia :

1. They are safe to be used in severe cases with cynosis and pulmonary oedema.
2. Where morphia is fatal in cases of Bronchial asthma, these can be safely used.

3. There are no chances for addiction with their use.

Aminophylline is given intravenously in doses of 0.25 to 0.5 gm. in cases of paroxysmal cardiac dyspnoea or pulmonary oedema with dramatic results. It should be injected slowly, in order to avoid over stimulation of respiration. It lowers the venous pressure. It is excellent bronchial anti-spasmodic. It acts by way of carotid sinus chemoreceptor, stimulating the respiratory centre and abolishing cheyne-stokes breathing I give Aminophylline 10 ml. ampule diluted in 50% Glucose solution 25 or 50 ml. This avoids the over stimulation of respiration and glucose acts as cardiac tonic. Intramuscular injections of Aminophylline are painful, oral administration causes dyspepsia when given in effective doses. Improvement has been made by adding aluminium hydroxide gel; another preparation which is quite effective orally is Etophylate.

OTHER MEASURES

1. Digitalis: Except in those cases who have received digitalis before or patients of acute myocardial infarction, patients should be rapidly digitalised by giving intravenous injection of Digoxin 1 mgm. It may be combined with aminophylline. The other method is to give intravenously Quabain (Strophanthin) slowly 0.5 mgm. followed by Digoxin orally.

2. Oxygen inhalation 6 to 8 litres per minute helps in lessening hypoxia and thus breaking the vicious circle.

3. If acute attack does not subside in 10 to 30 minutes tourniquets to the proximal parts of all the four limbs are applied to reduce venous return. These are left for one hour and then released slowly one at a time to avoid sudden increase in venous return.

4. Venesection of one pint of blood in plethoric patients is very helpful.

5. When the blood pressure is high suggesting hypertensive crisis; intravenous injection of powerful vasodilators and hypotensive agents such as methonium compound of T.E.A.B.i.m. 5 ml. help in avoiding this crisis.

6. In myocardial infarction, anti-coagulant therapy should be instituted immediately starting with heparin and followed by tromexanor dindevan.

LONG-TERM MANAGEMENT

- 1: Rest: Patient is confined to bed for about 2 weeks, in propped up position at night. The head end of the bed is better raised for about 6 to 9 inches (i. e. two bricks thickness) allowing extra pillows. The rest is given longer in infarction cases.

2. Diuretics should be given regularly to remove any accumulation of extra fluid and salt. The course that I have found satisfactory is to give mercurial diuretic i. e. mersalyl or Neptal 2 c. c. or tiomerin once a week and one tablet of Diamox twice a week.

3. Digitalisation should be continued. As a matter of fact cardiac asthma is a signal for institution of "digitalis life." Digoxin 25 mgm. tablet to be taken

thrice daily till the full effect is reached. The dose is then adjusted to a maintenance dose, which is continued for the rest of life.

4. Moderate salt intake: Prohibition of salty foods and added salt, limitation of salt in cooking, avoidance of sodium containing medicines specially carminative mixtures is aimed at. After the acute phase, I allow my patients to have one meal with pulse and vegetables containing small quantity of salt. The other meals of the day have no salt. This makes the life more pleasant.

5. Sedation: After the acute attack is over it is advisable that the patient should have complete rest at night pethidine injection should be given (100ml.) for 3 to 4 days. Later on it is followed for about one week by hypnotics and pethidine tablets at bed time and Largactil or Meproamate (Miltown) tablets in the morning and noon to allay anxiety.

6. Rehabilitation: Patients without chronic heart failure or coronary heart diseases need not be confined to bed for more than a day or two but they should have one or two weeks off from work with modified rest about the house. They are advised to have moderation in physical and mental efforts.

Patients with serious and dangerous cardiac disorder require a prolonged rest—treatment on the line mentioned above i. e., morphia or pethidine, Largactil Miltown, aminophylline, and Digoxin with salt restriction and diuretics.

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GLEANINGS FROM THE MEDICAL PRESS

A Treatment of Undescended Testicles in Infancy. C. G. Scorer. Arch. Dis. Childhood: 32: 520-522 (Dec) 1957 (London) Via JAMA 26-4-58:

Of 2700 boys examined in the maternity department of a general hospital, 108 were found to have incomplete descent of 1 or both testes. In 89 of these, the testis, was found to descend during the first year of life. The remaining 19 boys included 5 in whom the testes were small and at the external ring, 3 testes had never been felt and were presumably within the inguinal canal or abdomen, and 11 persisted just outside the top of the scrotum. The author is especially concerned with the group of 11 boys who presented the latter condition with 3 distinctive features. 1. The testis was present at birth or appeared within first few days of life. 2. It was of good size and firm consistency. 3. It did not change position during the many weeks or months of observation; it remained at the pubic crest or, at most, could be pushed to 2 to 2 cm. below it. In several of these boys herniation into the unclosed processes vaginalis resulted, and in treating these hernias by surgical excision of the sac, the author found that the path way from the external ring to the scrotum was blocked by a definite septum; or fibrous barrier, which had to be broken through by firm pressure before the scrotal cavity could be reached. This seemed to indicate that the cause of failure of descent is an obstruction and is not inherent in a deformity of the testis or a shortness of the chord. The rational treatment is, therefore, to remove the obstruction at an early age to enable the

testis to descend spontaneously or to place the organ in its normal position. The policy of waiting and the subsequent use of hormones is unlikely ever to be rewarded.

The following operation was performed on the 11 boys. The superficial inguinal pouch is opened by an incision over the external ring. The testis and the chord with their coverings are dissected clear. The tunica vaginalis is opened and explored with a probe to find out if it communicates with the peritoneal cavity. If a hernia is present, the sac is dissected off the cord and ligated as high as possible. The lower end of the superficial inguinal pouch is then broken through with pressure by the little finger. A stitch of nylon is passed through the gubernaculum, which at this stage is a thick and strong structure attached to the lower pole of the testis. Both ends of the nylon are threaded into the inguinal incision and out through the bottom of the scrotum, thus drawing the testis down towards its normal position. After closing inguinal wound, the stitch is attached to the skin halfway down the inner side of the thigh. The stitch is kept in for 2 or 3 days, and tight napkins are not allowed for several days. Ten of the 11 infants treated now have the testis between 5 and 7 cm. from the pubic crest. The testis could not always descend fully because the scrotum was often smaller. Age at operation varied between 3 and 52 weeks, but the majority of the infants were under three months, and this appears to be the most satisfactory time.

SEVERE INTOXICATION WITH VITAMIN D: Treatment with Cortisone. A. A. Eggink. Nederl. tijdschr. geneek. 101:2004-2008 (Oct. 26) 1957 (in Dutch) (Amsterdam) via JAMA April 19, '58.

The author presents the history of a 6 year old boy who in the course of six weeks had received 3.7 million units of vitamin D. The dose had been administered by intramuscular injection and by

mouth. All typical signs and symptoms of vitamin D intoxication were present, namely, anorexia, nausea, vomiting, thirst, polyuria, polydipsia, constipation, loss of weight, high blood pressure, albuminuria, erythrocyturia, cylindruria (tube casts), increased erythrocyte, sedimentation rate, hyper-calcemia, and hypercalciuria. Treatment consisted of forced fluid intake, low calcium diet, and administration of cortisone. Calcium balance studies were carried out. It appears probable that a fatal outcome of the intoxication was prevented by cortisone therapy.

CHRONIC BRONCHITIS IN THE AGED: (via The Practitioner, London, Vol 179 Sept '57).

In the experience of Trevor H. Howell (British Journal of Tuberculosis and diseases of the chest, July 1957, 51, 232), the use of oral and parenteral antibiotics has proved disappointing in the treatment of bronchitis in the aged. He has obtained much more satisfactory results from their use in the form of aerosols. This he attributes to the higher concentration of antibiotic thus obtained directly at the seat of the disease. The drugs employed are usually penicillin and streptomycin. They are dissolved in saline or a solution of 10% calcium chloride, which appears to diminish the viscosity of the sputum. A Collison type of inhaler is used, and antispasmodics, such as aminophylline, can either precede, or be combined with, the antibiotic aerosol which is vaporized by oxygen, or oxygen and 5% carbon dioxide. The number of inhalations varies from two to five a day. The present tendency is to increase the dose of antibiotic and lessen the number of treatments. Because of the danger of fungus infections of the lung, periodic short periods of aerosols, lasting five to seven days, are preferred to longer periods of administration.

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TREATMENT OF SEVERE TETANUS (via) The Practitioner, London No. 1072 Vol. 179, Oct '57.

The method of selection and the technique of treatment of seven Nigerian patients with 'tetanus of fatal severity,' treated by muscular paralysis and intermittent positive pressure respiration, are discussed by M.W. Glossop and M.D.W. Low (British Journal of Anaesthesia, July 1957, 29, 326). No patient was treated by paralysis and intermittent positive pressure respiration unless it was considered that 'a fatal outcome was both inevitable and near at hand if therapy were to be continued along conventional lines by heavy sedation only.' The view is expressed that had the respirator treatment not been instituted when it was, each of these patients would definitely have died within a period of twenty-four hours.' One of them survived. The general technique consisted of oral intubation under thiopentone and suxamethonium chloride, maintenance of a completely flaccid paralysis with laudexium methysulphate intravenously, and intermittent positive pressure respiration continued in six cases with a Radcliffe Respirator. The patient who recovered was ventilated with a Clevedon respirator, but it is not considered that the design of the respirator had anything to do with the outcome. Tracheotomy was performed within a period of twentyfour hours after the start of respirator treatment. All the patients received 50,000 international units of antitoxin intramuscularly on admission 2 mega units of soluble penicillin daily, and other antibiotics as indicated. Sedation with sodium amylbarbitone was given if needed. A continuous intravenous drip was kept running, the relaxant being mixed with the fluid in the bottle.

The authors are 'of firm opinion that a proportion of otherwise moribund patients can be saved in this manner.' They add: 'Perhaps had the patients selected for respi-

rator treatment been those in whom the prognostic criteria were not quite so unfavourable, we might have saved more lives.

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NYSTATIN IN VAGINITIS (via) The Practitioner, London No. 1071: Vol: 179 Sept. '57.

'Nystatin vaginal tablets appear to be a satisfactory preparation for the treatment of vaginal candidiasis in pregnancy,' according to H.L. Kayser and his colleagues (American Journal of Obstetrics. and Gynecology, July 1957, 74, 167). This conclusion is based upon the findings in 24 pregnant Negro women with vaginal pruritus or discharge positive for *C. albicans*. The drug was used in the form of a lactose tablet. The course of treatment of one tablet twice daily—on rising and on retiring - for two weeks. Of the 24 patients, (92%) were symptomatically improved. Post treatment cultures were taken from 20 of the patients, and 10 (50%) of these became negative. There was no apparent correlation between symptomatic improvement and disappearance of *C. albicans* from the vagina. No symptoms of primary drug irritation were encountered, and no toxic effects were observed.

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CLINICAL APPLICATIONS OF CHLOROTRIANISENE. by A. Ravina and J. Ravina. La Presse Medicale Vol. 66. No. 34, April 30. 1958. (Via La Medicine En France

On a series of about 100 patients suffering from various affections the authors studied the effect of chlorotrianisene, a synthetic estrogen, derived from halotriphenyl-ethylene, and having the property of fixing itself inside the fat tissue whence it is gradually released.

Chlorotrianisene proved effective in the treatment of hormonal disorders in women particularly at the time of menopause. The

clinical observations were confirmed by the examination of the vaginal smears. The drug is capable of inhibiting the milk secretion in many a case on the condition that rather high doses were used. It lastly proved effective in the treatment of carcinoma of the prostate and seemed susceptible of counteracting the development of recurrence and metastases in certain carcinomas of the breast.

Tolerance to the drug is very good. Its use does not practically cause any mammary painful feelings or gynecomastia or digestive intolerance.

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VAGINITIS AND NEO-NATAL INFECTIONS (Etiology of mycoses in the new-born). by J. Bret and CL. Coupe. La Presse Medicale, Vol. 66 No. 41, May 24 1958. (Via La Medicine En France.

The following are the authors' conclusions:

Their study made it possible to affirm that the great majority of mycoses in the new-born are due to infestation by a maternal vaginal mycosis:

(1) 20% of pregnant women are, at the time of delivery, bearers of *candida albicans* in the vagina.

(2) No infant born to a mother who is not suffering from vaginal mycosis is known to present *Candida albicans* in the buccal cavity and nostrils immediately after birth.

(3) New-born who are at birth bearers of *Condida albicans* in the buccal cavity and nostrils are issued from mothers who are bearers of the same germ.

(4) 83% of women affected with vaginal moniliasis bring this infection to the new-born during the course of labour (16.3% of the number of deliveries).

(5) In 40% of those cases where the infant was bearer of mycosis at the time of birth

the germ is found on the 10th day following birth.

(6) Of the infants bearers of *Candida albicans* on leaving the Maternity Department, 7% (of the total number of deliveries) are contaminated during the delivery; 2% are contaminated after birth (hospital contamination).

(7) The spontaneous disappearance of germs in the new born remains unexplained.

(8) The transient presence of *Candida albicans* in the urine of the new-born, apart from any associated sign, is not necessarily evidence of a pathologic condition.

(9) Prophylaxis of neo-natal infections is constituted by thorough bacteriological investigations and by treatment of vaginitis in the course of pregnancy.

(10) Determination of the agent responsible for an infection of the new-born should always include a bacteriological study of the vaginal medium in the mother, this being particularly necessary when the germ was difficult to detect in the new-born (hepatitis, pneumopathy).

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FURTHER RESULTS FROM TREATMENT OF ACUTE LEUKEMIA WITH THE USE OF PREDNISONE. by R. Picard, J. Horeau, J. Guillon and C. Robin. La Presse Medicale, Vol. 66. No 47. June 14, 1958. (Via) La Medicine En France.

This paper is the continuation of a previous article concerning the result of treatment of 11 cases of leukemia, of which 6 acute leukemia, with the use of Prednisone. A follow-up for about two years and the addition of 19 further cases have made possible more substantial conclusions than previously:

The authors observed the same spectacular effect as before on the temperature and the general condition, except for certain cases having ended fatally within a few days.

The effect on the osteo-articular pains is regularly obtained except for certain cases with localized foci which, on the contrary, do respond remarkably to a local radiotherapy. In opposition, the effect on the blood picture cannot be easily assessed owing to the almost constant therapeutic adjunction of blood transfusion. It was, however, possible to get an obvious improvement in the peripheral blood regarding the rate of both red and white cells, with the only use of Prednisone and even to get a complete normalization of the hemogram.

Furthermore, the remission was markedly shown from the functional stand point, thus affording to the patients a feeling of full recovery.

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INSAPONIFIABLE SUBSTANCE OF THE OIL FROM MAIZE SEEDS, Its therapeutic indications. by H. Thiers, Jouanneau and Zwingelstein. La Presse Medicale, Vol. 66. No. 56. July 26. 1958. (Via) La Medicine En France.

The authors have been for the last years investigating the whole of those insaponifiable substances which are present in oils from vegetal seeds. They found the insaponifiable substance from maize seeds to be of particular interest. It was experimentally and clinically shown to possess no toxicity and to exert a therapeutic action which cannot be explained by its contents in liposoluble vitamins and phytosterols. In oral administration and in alcoholic solution it proved to be a very beneficial drug in scleroderma, benign epiphysis with growing age, Paget's osseous disease, osteolyeis from progressive chronic polyarthritis and also in paradentosis. This last indication is particularly demonstrative of the value of this new therapeutic agent.

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PLEURAL MANIFESTATIONS IN CIRRHOTIC PATIENTS. by R. Poinso and P. Chanas. La Presse Medicale, Vol.

66. No. 49, June 21, 1958. (Via) *La Medicine En France*.

This study is based on examination of 400 patients affected by cirrhosis, of whom 174 by Laennec's cirrhosis, 138 by Hanot and Gilbert hypertrophic cirrhosis, 5 by cirrhosis with an atropho-hypertrophic form, 15 by pigmentary cirrhosis, 9 by meta-icteric cirrhosis, 3 by cardioethylic cirrhosis, 2 by fatty cirrhosis, 1 by cholostatic cirrhosis. 2 by adeno-carcinoma and 49 by an undefined form of cirrhosis (for lack of post-mortem or sufficient follow-up)

Of these 400 cirrhosis cases, 103 showed pleural effusion and in most of these the effusion was due to a mechanical factor. The stasis, edematous alveolitis and subsequent pleural transudation were relevant to the rising of the diaphragm and the hushing upwards and pressure of ascitic fluid upon the pulmonary bases. Only in 5 cases out of 103 was the pleural effusion recognized to be of tuberculous origin. Thus pleural hydrops of cirrhotic patients has no relation to Koch's bacillus.

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ROSACEA OF THE FACE (*Diagnosis, physiopathology and treatment*). by R. Aron-Brunetiere. *La Presse Medicale*, Vol. 66, No. 50, June 25, 1958. (Via) *La Medicine En France*

Rosacea of the face—quite different from acne vulgaris because of its anatomo-clinical features especially absence of onmedo), its evolutive modalities and the cotiopathogenetic circumstances of its occurrence—is made of the intricacy of two types of lesions, which may exist separately from each other, on the side, erythrosis of the face accompanied immediately or later by telangiectasis; on the other side, folliculitis.

The same duality seems to exist as regards the determining factors: on the one side, climatic factors (exposure to light, heat, cold, wind, dampness) inducing a focal circulatory stasis causative of erythrosis; on the other side, microbial allergy causative of folliculitis.

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The part of other disorders, digestive, neuro-vegetative, and endocrinous (diminution of the value of the ratio androgen + progesterone) is discussed. estrogen

Considering the scarce effectiveness or complete failure of diets and also of neurologic and endocrinous treatments, one should resort to focal therapy (electrocoagulation of the telangiectasis, regular skin hygienic cares, peeling by the strong resorcinol paste of Unna) and to systemic treatment for the folliculitis (broad-spectrum antibiotics of tetracycline type used in low prolonged dosage).

Only a combination of these two kinds of treatment can warrant a lasting result.

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FOCAL INJECTIONS OF FINE BONE POWDER AS APPLIED TO PSEUDARTHROSIS OF THE LONG BONES. by Pul Aglave. *La Presse Medicale*, Vol. 66, No. 52, July 2, 1958. (Via) *La Medicine En France*.

As early as 1933 in the *Bulletin de la Societe de Chirurgie de Paris* the author had reported a case of fracture of the femoral diaphysis that proved refractory to consolidation for a period of several months. Injections of bone powder were made into the focus of the fracture every week for six consecutive weeks. The preparation was composed of a very fine powder from rasped bone set in suspension in an isotonic fluid and poured into ampoules of 5 cc. The result was very good.

Another report is presented by the author concerning a particularly severe case of pseudarthrosis of the humerus with neighbouring osseous lesions, that was treated in the same manner. The patient after 24 years is radiologically shown to have a perfect consolidation of the bone as well as a mobile radio-cubital joint permitting both pronation and supination movements.

In the author's opinion such results are unquestionably due to the focal injections of fine powder.

MEDISCOPE

Notes & News

TRAINING OF AUXILIARY HEALTH WORKERS

Replying to a question in the Lok Sabha on September 18, Shri D. P. Karmarkar, Minister for Health, said that the scheme for training of auxiliary health workers had been started at three places, namely, Public Health Institute, Patna; Andhra Medical College, Visakhapatnam and Sawai Man Singh Medical College, Jaipur.

The Minister added that grants-in-aid of Rs. 15,181 during 1957-58 and Rs. 4,811 during 1958-59 had been paid to the Governments of Bihar and Andhra Pradesh respectively towards the establishment of training centres for auxiliary health workers.

CENTRAL AID FOR TRAINING AUXILIARY NURSE-MIDWIVES

The Government of India have sanctioned a further grant of Rs. 14,850 to the Ludhiana Maternity Hospital for the training of auxiliary nurse-midwives under the Community Development Programme during 1958-59. The number of auxiliary nurse-midwives receiving training under the scheme is 15.

The Union Ministry of Health has sanctioned Rs. 32,760 as grant-in-aid for 1958-59 to the Sitabuldi Maternity Home, Nagpur, for the training of auxiliary nurse-midwives under the Community Development Programme, it was announced on November 3.

For a similar scheme, a sum of Rs. 15,000, being the fourth instalment of the Union Government's grant-in-aid, has been sanctioned by the Ministry to the Avvai Rural Medical Service (Kasturba Gandhi Maternity Home), Gandhigram, for the year 1958-59.

SCIENCE RESEARCH SCHOLARSHIPS

The Royal Commission for the London Exhibition 1851, has repeated its offer of

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the Science Research Scholarship and the Rutherford Scholarship of the Royal Society for 1959, says a Press Note issued by the Ministry of Scientific Research and Cultural Affairs on November 1.

The Science Research Scholarship is for research in some branch of pure or applied science for a period of two years and is of the basic value of £ 550 per annum.

The Rutherford Scholarship will be awarded for experimental research in any branch of natural sciences, but preference will be given to candidates who propose to work in Experimental Physics. It will be tenable for three years and its value will be between £ 650 to £ 850 per annum.

MEETING OF FAMILY PLANNING BOARD

The Family Planning Board, which met in New Delhi on November 15 under the chairmanship of the Union Health Minister, Shri D. P. Karmarkar, recommended that a tentative provision of Rs. 100 lakhs be made by the Government of India for the implementation of the Family Planning Programme during 1959-60.

The main features of the programme for 1959-60 would be: intensification of training and education schemes, opening and maintenance of clinics, appointment of family planning education leaders, holding of orientation camps, free distribution of contraceptives gradually through all primary health centres and medical institutions, and strengthening of the inspection organization and research.

The Board discussed the progress of the family planning programme and noted that the number of clinics so far opened was 718. Against the target of 150 urban and 600 rural clinics up to March, 1959, 171 urban and 400 rural clinics had been started. The State Governments had informed the Central Government that they proposed to open 151 additional rural clinics before March, 1959.

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The Board suggested the holding of orientation camps of short duration for training a selected number of persons. The camps would be of about 'seven days' duration held at the headquarters of the Community Development Blocks or suitable places in each district. The object was to have a group of persons in each village and town trained as voluntary family planning educators (prachark).

To overcome the shortage of technical personnel needed for the implementation of the programme, a difficulty experienced by the State Governments, the Board recommended that they might be permitted to employ, in consultation with the Indian Medical Association, wherever possible, part-time doctors on payment of an additional allowance, provided the officers were not whole-time Government servants.

The Board also suggested that the present policy regarding sterilization should be continued i. e. the operation should be performed on the merits of each case in hospitals and institutions where such facilities exist and not in the family planning clinics.

CHILD GUIDANCE CLINIC FOR MADHYA PRADESH

The Union Ministry of Health has allotted one unit under the scheme for the establishment of child guidance clinics and psychiatric departments in teaching hospitals to the Government of Madhya Pradesh during 1958-59.

The number of child guidance clinics and psychiatric department allotted so far under the Second Five-Year Plan is seven against 20 proposed to be sanctioned during this period. These seven units have been sanctioned in the states of the Punjab (one), U. P. (one), Madras (two) Andhra Pradesh (one), Bombay (one), and Madhya Pradesh (one). A sum of Rs. 20 lakhs has been provided for this scheme in the Plan.

The clinics will be providing treatment of behaviour, personality and habit disorders of children and psychosomatic disturbances, juvenile psychoneurosis and psychoses by the application of mass treatment method. The Union Government gives financial assistance to the extent of 75 per cent non-recurring and 50 per cent recurring grants.

SCHOOL TO TRAIN HEALTH VISITORS IN KASHMIR

The Union Ministry of Health has approved the opening of a school for training health visitors in Jammu and Kashmir by the State Government with Central assistance, it was announced on October 16. The school is being started to meet the increasing demand of health personnel in connection with the various expansion schemes under the Community Development Programme.

This school is in addition to the six institutions already established during the Second Five Year Plan with Central assistance for the training of health visitors. The total cost per institution for 90 trainees is estimated at Rs. 3,14,200, of which the share of the Central Government will be Rs. 1,92,100 and of the State Government Rs. 1,22,100.

NEW INSECTICIDE DISCOVERED

Replying to a question in the Lok Sabha on September 27, Shri D. P. Karmarkar, Minister of Health, said that a new insecticide had been found in the research laboratory at Hyderabad. Limited laboratory tests against a few insects had shown that the insecticide compared favourably with D.D.T. when tested under similar circumstances.

PROGRESS OF CHILD WELFARE

The Social Welfare Board has set up 460 welfare extension projects in the rural areas. It has given grants to voluntary welfare institutions engaged in child welfare work

in different States. It has formulated and assisted other schemes in which child welfare work forms an important aspect of programmes.

The welfare projects of the Board cover more than 10,000 villages and about 10 million people. In the project areas child welfare programmes include *balwadi* and pre-basic training and training of the child in the use of its hands. Children are looked after by the *gram sevika* employed in the project.

During the last five years the Board has provided Rs. 72.12 lakhs as grants-in-aid to about, 1600 voluntary institutions in urban areas for expanding their welfare activities for the orphans, including the organization of creches for the children of working mothers in industrial areas and nursery schools, education and upbringing of orphans, recreational activities, construction and maintenance of parks and playgrounds and running of children's libraries. Institutions for the welfare of the handicapped numbering 275, have been given grants totalling Rs. 28.23 lakhs.

Under a new programme, about 100 Homes are proposed to be set up in hill stations before the end of the Second Plan, in which children of poor families are given the benefits of healthy surroundings, food and recreation for a part of the year.

INCREASED STIPENDS FOR C.S.I.R. FELLOWSHIPS

To encourage young and brilliant scientists to pursue research in the scientific and technological fields, the Council of Scientific and Industrial Research has decided to enhance the rate of stipend of Junior Research Fellowship from Rs. 200/- p.m. to Rs. 250/- p.m. fixed, and in the case of certain specialized subjects, to Rs. 300/- p.m., it was announced on October 17.

It was also decided that for certain specialized subjects the Senior Fellowships will

be of the value of Rs. 400/- and Rs. 500/- p.m.

The Council has been awarding Junior and Senior Research Fellowships for research work in National Laboratories and Institutes run by the Council as well as in other research institutions, university laboratories, scientific and technological colleges.

About 400 scholars are at present receiving these stipends.

HUNGARIAN GOVERNMENT SCHOLARSHIPS

The Government of Hungary have offered six scholarships for post-graduate study/research in: (i) Manufacture of Railway Rolling Stock; (ii) Manufacture of Thermal—Electric Power Plants. (iii) Manufacture of Aluminium and (iv) Manufacture of Scientific Instruments in Hungary, says a Press Note issued by the Ministry of Scientific Research and Cultural Affairs on October 18.

The value of each scholarship, which is tenable for 1 year (with a possibility of extension for another year) is Rs. 811 p.m. In addition, free accommodation, free medical aid and passage both ways will also be provided.

ALL-INDIA CONFERENCE OF PUBLIC HEALTH ENGINEERS

The third all-India Conference of Public Health Engineers was inaugurated by Shri D P. Karmarkar, Union Minister of Health, in New Delhi on October 28.

Inaugurating the Conference Shri Karmarkar said that the urban phase of public health engineering works had received prominence, while the rural side of the picture had not received the attention it deserved. Even so, due to growing industrialization and influx of population, the demand for sanitation, facilities in urban areas were ever increasing, and the local bodies in charge of urban units were finding it very difficult to meet the situation. But financial limitations even

in the matter of implementing schemes for basic amenities like drinking water supply stood in the way. Under this emergency, said the Minister, it became the responsibility of Public Health Engineers to get the maximum utility for the money made available.

Emphasizing the rural phase of the Programme, the Minister said that with over 80% of the country's population living in the villages, the need to provide safe drinking water and minimum sanitation facilities in the rural areas was very great.

The achievements under the First Plan and the Second Plan, the Minister said, had been below expectations. While on the urban side we are unable to meet the demands made, on the rural side, the State Governments have been unable to avail fully of the funds made available to them due to various reasons. The Minister said that dearth of qualified trained Public Health Engineers was a serious handicap in expanding the facilities of protected water supply and sanitation. He pleaded for each State building up its own independent Public Health Engineering organization to tackle the urban and rural phases of the water supply and sanitation programme.

CENTRAL AID TO PRIMARY HEALTH CENTRES

The Government of India have revised the pattern of giving aid for the establishment of primary health centres in the Community Development areas, says an announcement of October 23 from New Delhi.

This follows the decision of the Ministry of Community Development to abolish the distinction between Community Development Blocks and National Extension Service Blocks. There will be only two stages of progress in the Community Development Programme—Stage I being intensive development and Stage II a post-intensive period. Stage I of the Programme

will include the setting up of primary health centres in each Block.

While there is provision in the Second Five-Year Plan of the Ministry of Community Development for starting primary health centres in community project areas, the Ministry of Health gives assistance to State Governments against provision in the State Plans for such centres in National Extension Service Blocks. Now that the primary health centres will be established in each Block, it has been decided that the provision in the Plans of both Ministries should be combined to avoid duplication.

Accordingly under the revised pattern of Central assistance, the non-recurring grant for buildings and equipment will be up to a maximum of Rs. 67,500 on each unit, including the cost of construction of suitable accommodation for family planning clinics and staff quarters; recurring grant of Rs. 8,500 will be given for drugs and staff. The Ministry of Health and the Ministry of Community Development will share the assistance according to a determined proportion.

It has further been decided that the primary health centres opened in the Community Development Blocks before April 1, 1958, will continue to remain in those Blocks and receive assistance from the Ministry of Community Development. All centres in Stage I Blocks opened after this date will receive aid according to the revised pattern. Centres opened in the National Extension Service Blocks between April 1, 1956, and March 31, 1958, will get assistance for building purposes according to the revised pattern.

A design of the building for the Centres has been forwarded to State Governments for adoption as far as practicable.

TRAINING SCHOOL FOR HEALTH VISITORS

The scheme of the Mysore Government to open a school for training health visitors

at the Victoria Hospital, Bangalore, has been approved by the Union Ministry of Health, it was announced on October 20. The State Government will receive Central assistance for establishing the school.

This school is in addition to the six institutions already started during the Second Five Year Plan with Central assistance. The total cost per institution is estimated at Rs. 3,14,200 for training 90 health visitors. Of the estimated cost, the Central Government will contribute Rs. 1,92,100 and the State Government Rs. 1,22,100.

The institutions are being set up to meet the increasing demand of health personnel for the various expansion schemes under the Community Development Programme.

CENTRAL AID FOR WATER SUPPLY IN STATES

Replying to a question in the Rajya Sabha on August 21, Shri D. P. Karmarkar, Union Minister of Health, said that from this financial year the procedure of giving Central assistance to various States under the National Water Supply and Sanitation Programme had been revised. The State Governments were now being paid monthly assistance by the Centre based on 1/12th of the total lump sum assistance for all the Health Plan Schemes would be issued by the Health Ministry only in February/March 1958. However, a sum of Rs. 15 lakhs was paid to the Rajasthan Government as a loan for their urban water supply and sanitation schemes in April 1958 before the revised procedure was adopted.

Regarding the assistance given by the Government of India to various States during 1957-58, the Minister placed the following statement on the Table of the House:

THE SWISS WATCH IN MEDICINE

The watchmakers of Switzerland, believing did the father of modern medicine, as

Hippocrates, that "a doctor is only as good as his knowledge and use of it", have devised a wide range of medical timers to aid doctors in gaining such knowledge and applying it.

These chronographs range from the relatively simple wrist and pocket models which do the doctor's mathematics for him when he takes a pulse to more intricate timers which bolt onto the anesthetist's equipment and during a critical operation keep him constantly informed on the state of the patient's breathing and heartbeat. By watching the dial of this timer, the anesthetist is guided in adjusting the rate at which the narcosis is administered.

Other timers assist the doctor during stethoscopic exams, help him check vestibular reactions or time intravenous injections of such anesthetics as novocain or procain.

A recent survey conducted among doctors in Switzerland indicated that the use of a medical timepiece was much wider than had been expected.

Some physicians reported they used their watches during pre-birth labor cases for stethoscopic checks of the foetus and also to time the uterine contractions. Others said watches were invaluable in timing short-wave diathermy or X-rays.

Psychiatrists revealed that they used watches in certain psychotechnic testing. Hospitals stressed the all important time factor in many laboratory analyses, particularly in testing blood coagulation.

Medical research laboratories reported that precise timing of chemical reactions was required in many of their experiments and that they would be lost without their chronographs. One laboratory added as a postscript: "We even time the sterilization of our instruments."

These laboratories cited as their favorites a timer with a second hand that stops for a full second at each interval before jumping to the next, instead of sweeping around the dial, and an all-purpose chronograph with

snap-on, snap-off dial rings which permit researchers to change timing gradations at will. One of the rings is blank, permitting the scientists to grade it as the experiment requires, then erase and use it again. Both timers are adaptable to a great many experiments, the laboratories reported, and they suggested that the watchmakers consider addition of an alarm mechanism to each.

Perhaps the medical watch the average citizen is most likely to see is the model worn by his personal physician who starts almost every examination by pulse-taking. If he wears a normal wrist watch with a sweep second hand, the doctor counts the pulse beats with one hand while watching his timepiece in the other. When 15 seconds have passed, he multiplies the number of pulse beats by four to obtain the pulse rate per minute.

However the up-to-date doctor more often wears a Swiss jeweled-lever medical watch which not only tells time but does his multiplying. He simply presses a button at the first pulse beat. Fifteen or twenty pulse beats later—depending upon the setting of the watch—the doctor pushes the button again, stopping a sweep hand which points out on the dial the number of pulses per minute. Some models have a magnifying lens to facilitate reading.

This watch is also in widespread use among professional nurses although there is a special lapel watch designed for them with an upside-down dial for easy reading.

Dentists, who use a great deal of local anesthesia and also often do their own X-raying, indicated a marked preference for an alarm wrist watch to buzz them when the novocain should begin numbing the jaw or when their X-rays are ready to come out of the soup.

The most amusing survey reply came in a plaintive note from a country physician deep in the Alps: "Develop a timer which will tell me how long a patient will take to pay his bill," he suggested.

The survey officials' straight-faced reply: "Any good Swiss watch can eventually tell you this since they are made to last a lifetime."

010047— Up to date doctors and nurses let fine Swiss watches—especially designed for the medical profession—do their mathematics for them when taking pulses. The doctor merely has to count up to 15 or 20 pulses, push a button, and the watch tells him the pulses per minute. Other Swiss medical watches perform a wide variety of special takes.

010048— This close-up shows a Swiss jeweled-lever operation room timer which normally is bolted to the anesthetist's equipment. During a critical operation it helps keep the anesthetist constantly informed on the state of the patient's breathing and heartbeat, thus guiding the rate at which the narcosis must be administered.

010049— This is an all purpose timer with snap-on, snap-off dial rings graded for different purposes. In this photo the ring in place measures pulse and respiration. The unusual instrument—a great favorite of laboratory researchers—even has a blank ring which can be graded for any timing purpose, then be erased and used again.

010050— This watch has been called "the general practitioner's best friend". It does his mathematics for him at the push of a button when he takes pulses. He starts the timer at the first beat of the pulse and 15 or 20 beats later stops it. The sweep hand points out the pulses per minute.

PRACTITIONERS' FORUM

142952

Dear Doctor,

If you have some specific problems relating to some of the cases you have in hand, kindly send us your questions giving the necessary details.

The questions will be answered by eminent Specialists on the subject. The question and answer will be published in the columns of 'Mediscope'.

Please state if the answer is desired before the date of publication. We shall endeavour our best to reply you direct as early as possible.

Every letter must carry the name and address. Anonymous letters will not be answered, but the writer's name and address will be omitted, if desired.

The Editor is under no obligation to answer all or any question. Answers to queries by specialists are their own.

We hope you will avail of the extra services offered by us without any obligation.

Very truly Yours,
DR. B. RAMA RAU, B.Sc., M.B.B.S.
Editor

MS
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