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Vol. X

JANUARY 1961

No. 4

A QUARTERLY
DEVOTED TO HYGIENE, PREVENTIVE MEDICINE,
MEDICAL SCIENCE AND ALLIED SUBJECTS



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INFORMATION

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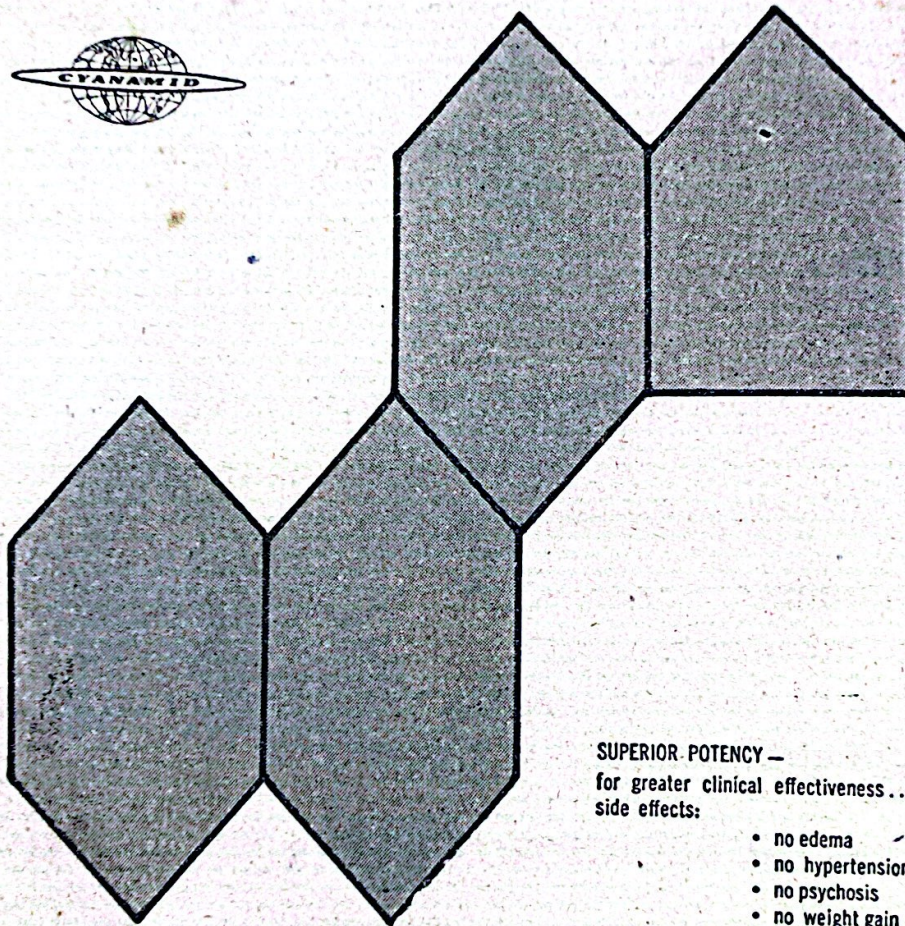
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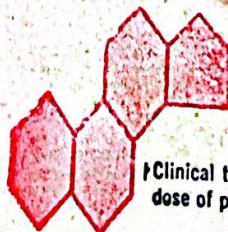
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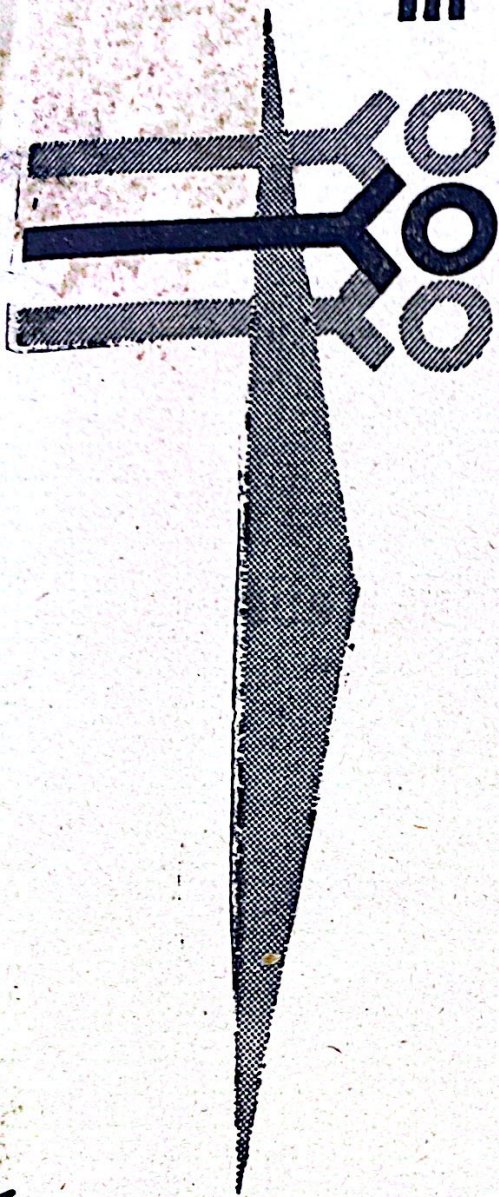
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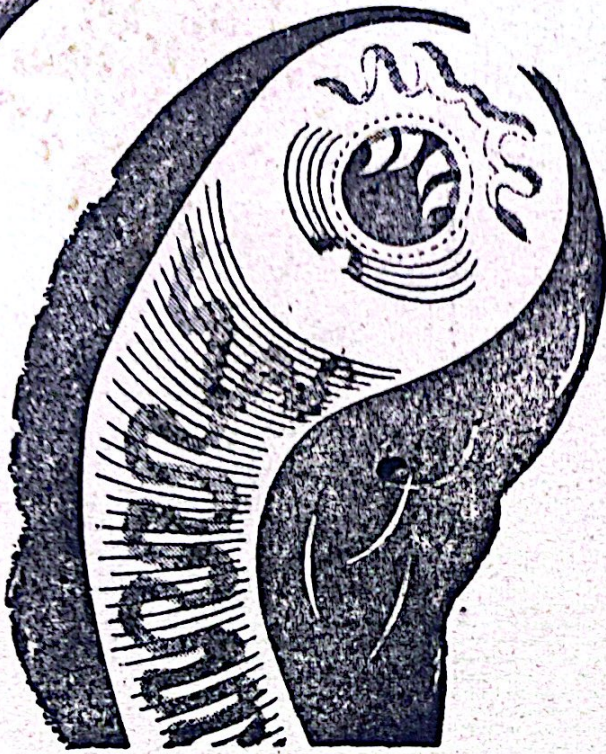
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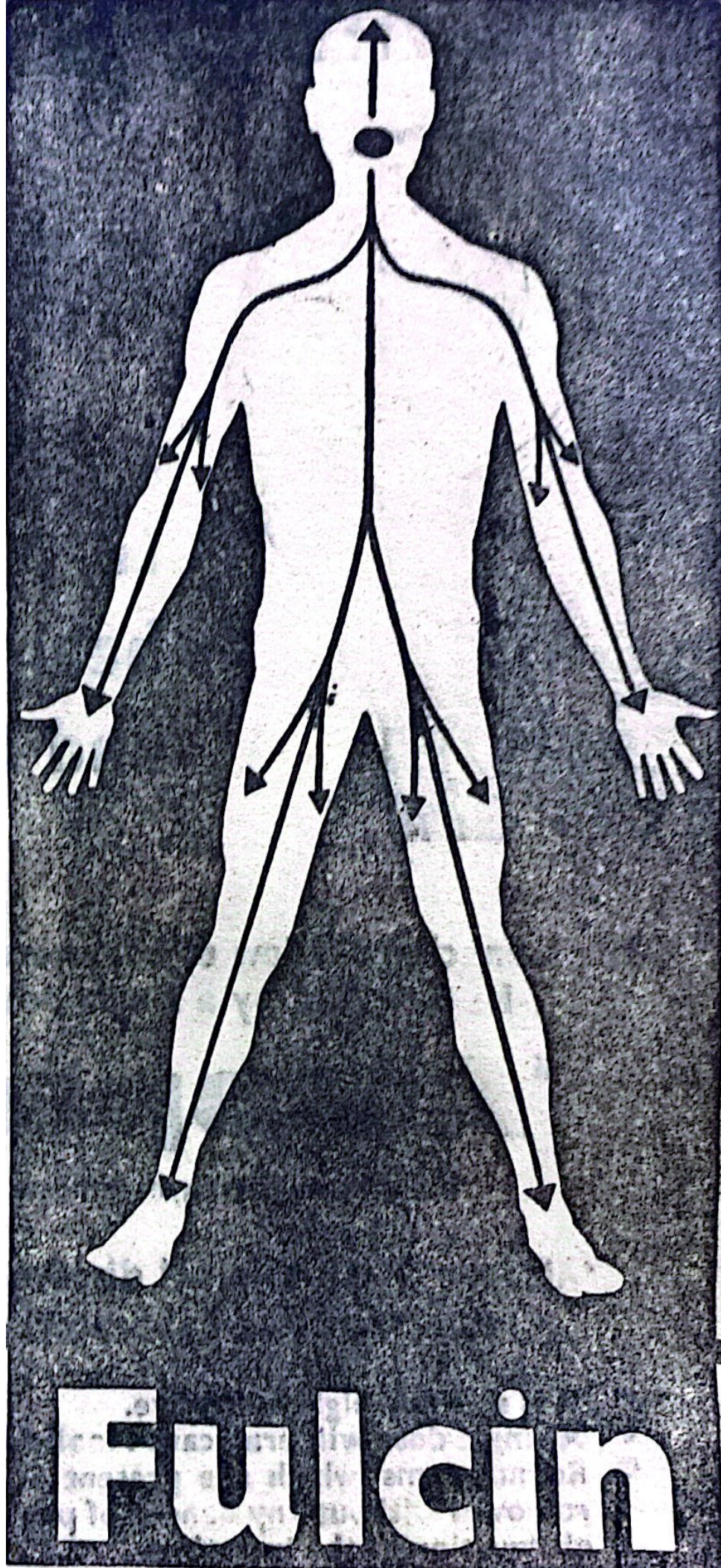
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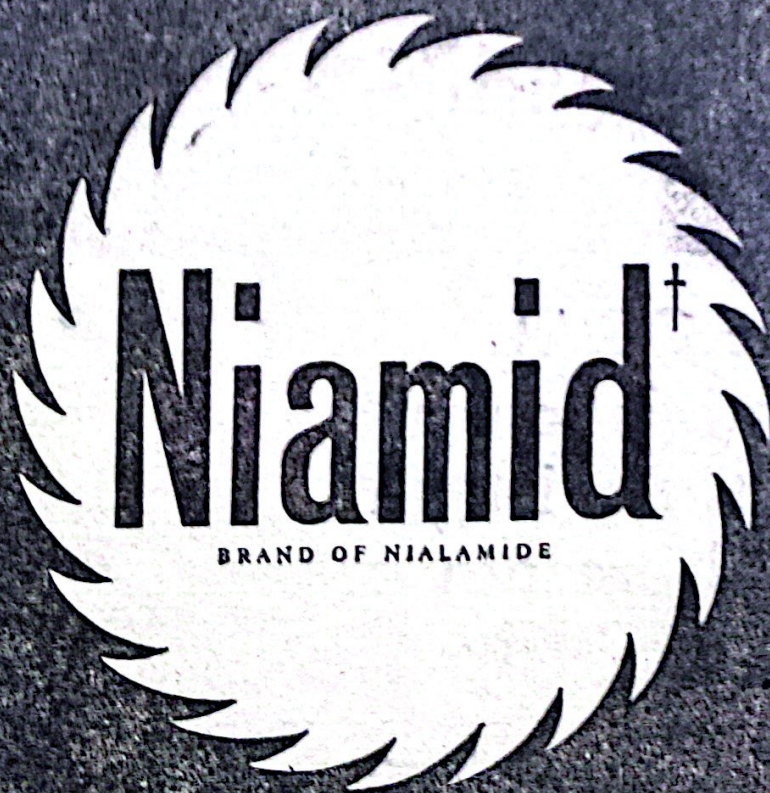
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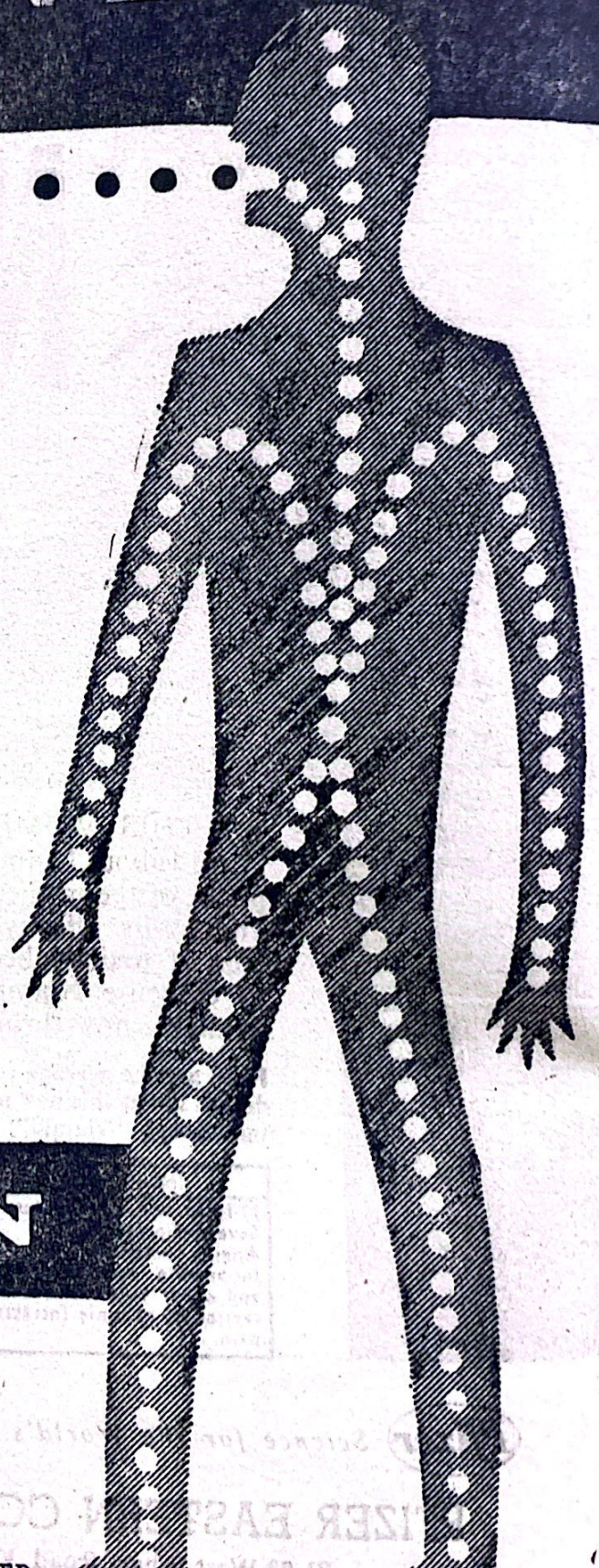
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Effects of Ionizing Radiation on Human Embryo and Foetus

BY

Professor M. MAQSOOD*

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GENERAL INTRODUCTION

IN the present Atomic age, problems arising from the exposure of man to irradiation are extremely numerous and they bear on many aspects of his health and his children's health. To the extent that the original exposure—medical or industrial—aim at improving man's welfare, he benefits; to the extent, however, that the exposure does him bodily harm or induces gene mutations that will harm his offspring, he suffers. At the United Nations meeting held at Geneva during 1955, Dr. H. J. Muller (U. S. A.) said, "Man's own reproductive material is his most invaluable ir retrievable possession. It is already subjected to an amount of variation which in relation to his present reproductive practices borders on the excessive. Under these circumstances man's first concern in dealing with radiation must be his own protection. Radiation causes gene mutation and these mutations are the kind which are the greatest danger to human population, since they give us the hereditary defectives who in extreme cases go to asylums and hospitals and in less severe cases lead the frustrated life of the partially unfit." The problem of radiation hazards presents a serious threat to mankind. On the other hand the numerous uses of atomic energy in different branches of Science and Technology hold great promise for a better and happier life for this and the succeeding generations and have been reviewed by Maqsood (1957). Recently Maqsood (1960 a, b) has discussed the effects of radiation on fertility and life span and in the present paper, the available literature on the effects of ionizing radiation on human embryo and foetus is reviewed.

EMBRYO AND FOETUS

The embryo or foetus appears to be more radiosensitive than any postnatal stage; attributable in part to the presence of undifferentiated or differentiating organ

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Brain :

Anencephaly

Porencephaly

Microcephaly

Encephalocoele

Mongolism

Reduced Medulla

Cerebral atrophy

Mental retardation

Idiocy

Neuroblastoma

Deformities :

Hydrocephalus

Dilation of ventricles

Spinal cord anomalies

Absence of some cranial nerves

Eyes :

Complete Absence-anophthalmia

Microphthalmia

Microcornea

Coloboma

Deformed iris

Absence of lens or retina

Open eyelids

Retinoblastoma

Hypermetropia

Congenital glaucoma

Partial albinism

Skeleton :

Uniform reduction
Reduced skull dimensions
Vaulted cranium
Narrow head
Cranial blisters
Funnel chest
Congenital dislocation of hips
Deformed feet
Digital reductions
Abnormal limbs
Brachydactyly
Exostosis on proximal tibia
Scleratomal necrosis

Miscellaneous :

Hydronephrosis
Hydrocoele
Absence of kidney
Degenerate gonad
Atrophy of lower extremities
Cutaneous depigmentation
Hyper-pigmentation
Leukemia
Congenital heart disease
Deformed ear
Facial deformities
Pituitary irregularity

Microcephalic idiocy has long been attributed to the exposure of the human foetus to ionizing radiation (Dunlop, 1947). The diagnostic X-ray examination of a pregnant woman at four, five and six months was followed by delivery of a child showing a whole group of congenital anomalies such as microphthalmus, microcornea, etc. (Pitter and Svijda), 1952). According to Plummer (1952), the data from Hiroshima and Nagasaki show that there is a reduction in the head dimensions and evidence of retardation in children who were exposed in utero. The closer the pregnant Japanese woman was to ground zero, the more likely she was to have a microcephalic child and mental retardation occurred in a high percentage of these children. Kawamoto *et al.* (1954) reported that while both Japanese boys and girls showed stunting as a result of embryonic exposure to the atomic bomb, it appeared that the boys showed a reduction in head circumference while the girls not only showed this deficit but also reduction in average weight and height. Sutow (1954) reported that exposure during the second half of gestation was not so damaging, but the boys exposed during this period showed poorer I. Q. than the girls. Microcephaly and mental retardation occurred among the 205 children exposed to the atomic bombs at Hiroshima, with congenital dislocation of hips, mongolism, congenital heart disease and hydrocoele as other effects (Kawamoto, 1955). According to

Yamazaki *et al.* (1954), among the children of 30 pregnant women exposed at Nagasaki, 23.4 percent showed foetal mortality, 26 percent neonatal or infant death, and among 16 surviving children 25 percent showed mental retardation. The overall mortality of atomic bomb exposure of human embryos was 60 percent in this group, in contrast with 6 percent for the unexposed general population.

There has been no systematic study of the long term sequelae of embryonic or foetal-irradiation. It may be of interest to mention here that cancer has been found in foetus and the newborn so that the origin of this slowly developing malignancy may well start by changes in some of the peculiarly sensitive cells of the embryo or foetus at a very early stage (Rugh, 1959). Stewart *et al.* (1956) reported a higher incidence of leukemia and cancer in offspring of mothers X-irradiated during pregnancy. Further, Stewart (1957) stated that among 515 leukemia cases following foetal irradiation, there appeared 15 mongolian idiots and there were also tumors of the brain, spinal cord, kidneys, and adrenals.

Court-Brown and Doll (1956) state that even therapeutic irradiation of pregnant women has been considered as a factor in causing microcephaly and other defects in the foetus. Russell *et al.* (1957) reported that two cases of pregnant women receiving large doses of I^{131} not only developed hypothyroidism, but that there was also congenital hypothyroidism in the offspring. Gyllenstein (1958) has rightly emphasized that from a genetic aspect every dose of radiation, no matter how small, to the embryo will cause damage. Rugh (1959) states that there is reason to believe that the human embryo is not exceptional and that the findings with other mammalian embryos may be, in general extrapolated to the human until more accurate human data are available. This means that exposure of the human embryo should be avoided under all circumstances particularly during early development. Rugh (1959) further states that it is believed that gross congenital anomalies may result from exposure to ionizing radiation at any time from immediately after conception through at least the first trimester.

In emphasizing the sensitivity of the embryo and foetus to ionizing radiation, we must not lose sight of the fact that these ionizing radiations are proving a boon to research, diagnosis, and therapy with postnatal organisms. All that is required, is that human beings should not be unnecessarily exposed to the hazards of ionizing radiation and according to Muller (1954) the physicians and surgeons should prescribe radiostopic examination only when it is really necessary.

ACKNOWLEDGMENT

The writer is grateful to Dr. J. H. Lawrence M.D., D.Sc., Professor of Medical Physics and Director, Donner Lab. University of California, Berkeley, for his guidance and encouragement.

REFERENCES

- Court-Brown, W. M. and Doll, R. (1956). *Med. Res. Council Rept.* 87.
- Dunlop, C. E. (1947). *Human Fertility*, 12, 33.
- Gyllensten, A. L. (1958). *Nord. Med.* 59, 846.
- Hicks, S. P. (1954). *Arch. Path.*, 57, 363.
- Hicks, S. P. (1957). *Pros. 4th Intern. Cong. Neuropath.*, Brussels.
- Kawamoto, S. ; Hamada, M. ; Sutow W. ; Reynolds, E. and Kuschner, J. (1954). *Atomic Bomb Casualty Commission Pub.*, Washington D. C.
- Kawamoto, S. (1955). *Atom Bomb Casualty Comm. Pub.*, Washington D. C.
- Maqsood, M. (1957). *Atomic Energy-A Boon to Humanity*, University Book Agency, Lahore.
- Maqsood, M. (1960-a). *Pak. J. Health*, 10, 28.
- Maqsood, M. (1960-b). *Pak. J. Health*, 10.
- Miller R. W. (1956). *Pediatrics*, 18, 1,
- Muller, H. J. (1954). *Acta Radiol.*, 41, 5.
- Pitter, J. and Svijsda, J. (1952). *Ophthalmologica*, 123, 3861.
- Plummer, G. (1952), *Pediatrics*, 10, 687.
- Rugh, R. (1959). *In Ann. Review Nuclear Sci.*, 9, 493,
- Rugh, R. (1959). *In Radiation Biology*, Acad. Press, New York.
- Russell, L. B. (1954). *J. Exple. Zool.*, 131, 329.
- Russel, L. B. (1957). *Proc. Soc. Exple. Biol. Med.*, 95, 174.
- Russell, C. P., Rose, H. and Starr, P. 1957. *Surg. Gynecol. Obstet.*, 104, 560.
- Stewart, A. Wybb, J., Giles, D., and Hewitt, D. (1956). *Lancet*, 11, 667.
- Stewart, A. (1957). *Proc. Roy. Soc. Med.*, 50, 251.
- Sutow, W. W. (1954). *Atomic Bomb Casualty Commission Pub.*, Washington, D. C.
- Yamzaki, J., Wright, S., and Wright P. 1954). *J. Diseases Children*, 87, 448.

Diseases of Poultry Transmissible to Man

BY

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WITH the increase in poultry industry and growth of interest in people towards poultry keeping, the diseases transmissible to man have also acquired considerable importance. This situation shall grow as the closeness of birds to human beings grows.

The public interest concerns primarily with the diseases of birds transmissible to man and the reservoirs of such infections. Most poultry diseases transmitted to human beings belong to the group of occupational diseases because the exposure in most of the cases occurs due to the nature and type of work done by the man infected. There are people who work in poultry farms, poultry laboratories and poultry markets where they virtually live with the birds and remain in close contact with them and provide ample chances to receive heavy doses of infection required to establish infection in humans.

Although a number of infectious agents have been found both in human beings and poultry but in most cases they are of no great concern from public or poultry

point of view. Only four diseases will be discussed here that are important not only from public health but economic aspect as well.

(1) Ranikhet disease was first recognized in the poultry in 1926 in the Dutch East Indies. The following year *i.e.*, in 1927, Doyle reported a highly fatal virus disease in poultry in England which he named Newcastle disease. In 1941 a disease serologically identical to the Newcastle disease was recognised in United States of America. Because of the highly contagious nature of this disease much work has been devoted towards its control.

It was first recognised by Burnet in 1943 in Australia as causing acute conjunctivitis in man. Ingalls and Mahoney in 1949 were first to isolate Ranikhet disease virus from human beings in United States. Relatively few of the cases reported since have had actual virus isolations supporting the diagnosis. Most cases involving virus isolations have been laboratory

workers who became infected either by handling infected birds or working with the virus. The disease has also been diagnosed in poultry owners who have had the disease in their chickens or who became infected following exposure to Newcastle diseases vaccine. The author and a Laboratory Assistant while engaged in the production of Ranikhet disease vaccine at the College of Animal Husbandry, Lahore, had an attack of mild but painful conjunctivitis that persisted for three days but no virus could be isolated.

The chief effect on human eye is an acute painful inflammation of the mucous membrane lining the conjunctival sac of the eye. The course of disease is 5-10 days and there are no reports of permanent or chronic injury to the eyes.

(2) Swine erysipelas a disease of pigs due to *Erysipelothrix rhusiopathiae* was first recognised in turkeys in Germany in 1905 and in United States in 1936. This infection in birds, that is often referred to as erysipelas, should not be confused with the condition referred to as erysipelas in man because they are each due to a different type of infectious agent. The cause of erysipelas in birds does however produce an infection in human beings and this condition is known as erysipeloid. During and immediately after the world war II this disease was savagely rampant in the turkeys of the north west coast of the United States. During this period painful, swollen, discolored erysipeloid lesions of hands and arms were reported in the turkey raisers and other

people connected with the turkeys. Occasionally the infection was seen on the feet. The infection occurs usually through cuts and bruises on hands and feet. There is a painful swelling at the point of infection. The area turns red, or purple and becomes necrotic.

Generalized infection of erysipeloid in man is rare but may occur unless promptly attended to. Klauder and co-workers in 1926 reported *E. rhusiopathiae* infection in fish handlers.

3) Salmonellosis or paratyphoid infection is a contagion that may affect various animals and man and is caused by any one of a variety of organisms that belong to the genus *Salmonella*. Salmonellosis does not include Pullorum disease caused by *S. pullorum* and Fowl typhoid caused by *S. gallinarum*. There is large number of *Salmonella* types identified up to now and more are constantly being found and identified serologically. The range of animal hosts from which *Salmonella* have been isolated is also very wide including lizards, snakes, turtles, birds as well as mammals and man. There is no clear cut evidence of certain salmonella types being found only in one type of animal. *S. typhimurium* common in birds is also frequently recovered from man and other animals. This as well as other salmonella types have been recovered often from such free migrating animals as rats, mice and water-fowls. In fact the universal distribution of salmonella is quite accepted.

Salmonellae primarily affect the intestinal tract and are shed in the droppings of the birds for a number of days even months. Such birds are 'Carriers' of infection and may serve as reservoirs for other susceptible animals. In the case of birds it is known that some develop infection of ovaries and that some of the eggs that are laid carry the organisms. The organisms may be so few that it is difficult to find them in a newly laid egg, however, if the infected egg is put in incubator the organisms grow and are demonstrated without trouble. Such eggs if used without first destroying the organisms, by boiling or cooking, are a source of infection to man. Therefore, the hazards involved with items like creams and custards etc., are not insignificant. There is every indication, however, that in most cases of salmonella infection in human beings or other animals there has to be such condition that would provide fairly large dose of the organisms.

Tests of sample of dried eggs have shown some to be carrying salmonella organisms. As long as the dried eggs are used in foods that are thoroughly cooked there would be no danger. Report of a survey by Felsenfeld *et al.* in 1950 on the presence of salmonella in meat, eggs and milk revealed the presence of these organisms in some samples of beef, pork, poultry, eggs and dried egg powder but no salmonella in samples of grade 'A' pasteurised milk.

It is not always possible to detect the source of infection when the people be-

come ill from this infection. Preparation and handling of food plays a very important part. There is considerable difference in heat sensitivity between different strains of salmonella, however, none have shown high resistance to heat. Poultry and its products are not the only source of infection for man considering the universal distribution of the organism in nature.

(4) Ornithosis or Psittacosis is a disease of birds that has acquired some importance amongst human beings during recent years. Previously human cases were traced back to exposures from Psittacine birds such as parrots and parakeets, but Meyers has reported more than 70 different species of birds that are infected with the causative agent of Psittacosis. Pigeons, chickens and sea-gulls also harbour the virus of psittacosis and birds without clinical evidence of disease are known to be a source of infection. Irons and his associates in 1948 diagnosed this disease in Texas amongst turkey slaughter-house workers. In 1954 number of outbreaks of ornithosis occurred amongst slaughter-house workers in five different turkey processing plants. Ornithosis virus was isolated from 11 turkey flocks of Texas.

In 1956 a man who worked on a turkey farm in Oregon was suspected to be suffering from ornithosis and virus was isolated from some of the affected turkeys. It was estimated that at least 80 persons became ill from exposure in one way or another to the infection. It is an acute febrile illness characterised by intense

head-ache and an atypical pneumonia. Although the virus that causes ornithosis is wide spread, the occurrence of the disease is manifest only under rather limited circumstances. Outbreaks have occurred under conditions that have provided exposure to large quantities of the virus.

SUMMARY

With the increased poultry keeping some diseases are liable to be noted in poultry keepers that are carried by the birds. Four diseases, *i.e.*, Ranikhet disease, Erysipelas, Salmonellosis and Ornithosis that have been reported in human beings are briefly discussed.

REFERENCES

- Beaudette, F. R. (1943), A review of the literature on Newcastle Disease. Proc. U.S.L.S.S. Assoc., 122-127.
- Beaudette, F. R. and C. B. Hudson, (1936), An outbreak of acute swine Erysipelas infection in turkeys, J.A.V.M.A. 88 : 475-488.
- Burnet, F. M., (1943), Human infection with the virus of Newcastle disease of fowls, Med. J. Australia. 2 : 313-314.
- Davis, D. F. and J. P. Delaplane, (1955), Ornithosis in turkeys. Proc. A.V.M.A. 296-301.
- Dickinson, E.M., W. E. Babcock, and G. Kilian, (1957), Ornithosis in Oregon turkeys, J.A.V.M.A. 130 ; 117-118.
- Felsenfeld, Oscar, Viola Mae Young and Tama Yoshimura, (1950), A survey of Salmonella organisms in Market Meat, Eggs and Milk, J.A.V.M.A. 116 : 17-20.
- Gordon, R. F. and A. Buxton. (1947), Dried egg and Salmonella, Brit. Med. J. 8 : 898.
- Ingalls, W. L. and A. Mahoney, (1949), Isolation of virus of Newcastle disease from human beings. Amer. J. Pub. Health. 39 : 737-740.
- Irons, J. V., T. D. Sullivan, and J. Rowan, (1951). Outbreaks of Psittacosis (Ornithosis) from working with turkeys and chickens, Amer. J. Pub. Health. 41 : 931-939.
- Klauder, Joseph V., Lindwood L. Richter, and Malcolm J. Howkins, (1926), A distinctive and severe form of Erysipeloid among fish handlers, Arch. Dermat. & Syph., 14 : 662-678.
- Meyers, K. F. (1952). Ornithosis and Psittacosis in 'Diseases of Poultry' edited by H. E. Biester and L. H. Schwarte. 3rd Ed. Iowa State College Press, 569-618.
- Pate, D. D., W. A. Boney, and J. P. Delaplane, (1954), Turkey Ornithosis. I. A report of natural and experimental infections. J. A. V. M. A. 125 : 476-478.

Ectopia Vesica in a Female Child

By

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JANAT Bibi daughter of Umer Din, aged $5\frac{1}{2}$ years was admitted in Civil Hospital, Jhelum on 14th January 1960. Her mother complained that since birth Urine had been constantly dribbling from an ulcerated surface on the lower part of the child's abdomen causing great discomfort to the child who remained constantly wet. She also stated that some times bleeding occurred from the ulcerated surface. The child had been brought from a village in District Mirpur (Azad Kashmir).

EXAMINATION

On clinical examination of the abdomen a red rounded swelling 1 inch in Diameter covered with a rough irregular surface and ulcerated areas here and there was found. The swelling had excoriations and when touched over the ulcerated areas slight bleeding occurred, Swelling moved to and fro on respiration and was partially reducible by hand pressure. There was thick band of scar Tissue around the swelling. The skin of the abdomen and thighs was red and sore at various places. Urine was con-

stantly dribbling from two points on the swelling. The Umbilicus was absent.

Of the external genital organs, labium Majus on either side was fairly well developed with a cleft between the two labia. There was no union of the two labia either at the upper or the lower ends with the result that the cleft between the labia was directly continuous at its upper end with the raw surfaced swelling on the lower part of the abdomen. The Labia Minora, the Clitoris, the Vaginal Orifice, Vestibular Fossa were absent (See Photograph).

The patient by appearance was a fair complexioned female child. When made to walk her gait was waddling in character.

X-Ray examination of the pelvis (See film) showed the following anatomical defects —

1. There was a gap in the Pubic Symphysis; Symphysis pubic was absent.
2. The Horizontal Rami of pubic Arch terminated on either side

in the inguinal Region without joining with each other.

3. The innominate bones seemed to be rotated outwards.
4. The Sacrum was convex anteriorly instead of being concave.

Urine examination did not reveal anything abnormal except fairly large number of pus cells. Blood examination showed the child to be a little anaemic with Haemoglobin 12 grammes.

DIAGNOSIS

Diagnosis of Ectopia Vesica, Extroversion of the bladder, was obvious.

TREATMENT

The child was put on anti-anaemic treatment for 12 days after which transplantation of Ureters into the Sigmoid Colon was done in two stages by the Method of Grey-Turner, under general Anaesthesia. The right Ureter was implanted into the Colon on 26th January 1960 and the left Ureter was similarly implanted four weeks later on 23rd February, 1960. At the time of second implantation when the abdomen was opened through the original incision-scar the left ureter could not be found easily due to adhesions as a result of first operation. The Ureter was located by passing a probe from its external opening on the exposed surface of the extroverted bladder after which no difficulty was encountered in the further steps of implantation. The Ureters were made to traverse the bowel wall before entering the bowel Mucosa so as to make more or

less a Valvular opening to prevent ascending infection. After each operation a rubber Catheter was placed in the rectum for 3 days for outflow of Urine, Faeces and Flatus.

For 3 days before each operation, the patient was given Chlorostrep 1 Capsule 8 hourly for more or less Sterilization of the bowel lumen and on each post-operative occasion patient was given Strepto-penicillin 1/2 gm. formula for 5 days.

RESULTS

Recovery from each operation was uneventful. The first operation wound healed completely in 10 days and 2nd operation wound healed in 2 weeks time. The control of micturition was soon learnt by the child and the bowel wall could contain the urine for several hours. After the second operation the child is now passing Urine every 3 to 4 hours through anus. The child is now very happy as she no longer remains wet. She has become brighter mentally and has started playing about without embarrassment. The child has been put on diet restricting Sodium Chloride and is being given 5 grains of Soda Bicarb 3 times daily to prevent Hyperchloraemic Acidosis. No post operative complication has occurred so far.

DISCUSSION

Ectopia Vesicator Extroversion of the bladder is a distressing congenital malformation in which there is total absence of

the anterior and lower wall of the bladder and lower part of the anterior abdominal wall. The result is that the Mucous Membrane of the posterior Vesical wall is exposed on which orifices of the Ureters open with consequent constant dribbling of Urine. Due to the absence of anterior abdominal and vesicle walls the posterior wall of the bladder with its Mucous Membrane is pushed forward by the abdominal contents behind it and it projects in the middle line below the naval as a red rounded swelling. In addition to this Malformation other defects in the bony pelvis as seen in the Skiagram of the case are also present. Most constant defect is the absence of Symphysis pubis. Ulcers, excoriations, pain and irritation due to friction of the clothes against the exposed Mucous Membrane appear and so do the Haemorrhages. There is a tendency to ascending infection of Kidneys and pyelitis with the result that these unfortunate children are not likely to live to a great age. The ugly waddling gait is due to outward rotation of the innominate bones with absent symphysis.

The incidence of the condition is said to be one in 5000 live births. Though stated to be more common in males, the present case was obviously a female both by appearance, presence of Labia Majora etc. The sex in this case was further confirmed to be female by finding Rudimentary Uterus, Tiny Fallopian Tubes and Ovaries at the time of operation.

In the male, in whom the condition is more common, the penis is always rudimentary and is split open on the dorsal surface into a gutter, which is continuous with the bladder Mucous Membrane. The condition is known as Epispadias. The testes are often in inguinal canal or if in the Scrotum are accompanied by congenital Hernia.

At birth the lower portion of the Umbilical Cord is expanded over the raw surface constituting the anterior Vesical wall. When the Cord separates the Posterior Vesical wall is necessarily exposed.

The condition is due to impaired development of the Anterior wall of the Allantois and the lower segment of the abdominal Parietes.

Transplantation or implantation of Ureter into the Colon is the usual method of treatment for this distressing condition. Different Surgeons have different modifications. Gray-Turner's method used in this case seems to be as effective as the others. Details of different methods can be found in Standard Operative Surgery Books. The suggestion by one of my colleagues in the meeting as to why not suture skin flaps of lower abdominal wall over the exposed surface of the bladder, though, seems to be a very easy, will not solve the problem. Skin of lower abdominal wall when sutured to line the bladder develops a big growth of pubic hair which soon become encrusted with

phosphates. Also there won't be any Sphincter control.

In the female when the conditions permit the bladder Mucous Membrane and the Ureters may be implanted into the Vagina while the Vulva is almost completely closed so that the Vagina may form a reservoir. Such favourable conditions were not available in the present case.

The operation should not be done until the child is 5 years old so that the child can learn to control the accumulation of Urine in the Colon as the patient's intelligent cooperation is essential.

COMPLICATIONS

After all is said and done the unfortunate child is likely to suffer from complications which are as follows :—

1. Development of Hyperchloraemic Acidosis after both Ureters are transplanted in the Sigmoid Colon. This abnormal Electrolyte pattern may develop after interval of days and months after the operation. The patient will then suffer from lassitude, weakness, Anorexia, Nausea, Thirst, loss of weight and Diarrhoea. The imbalance occurs in about 50 per cent of cases after Uretro-Sigmoidostomy. It is said that this Electrolyte imbalance occurs due to resorption of large amounts of Chlorides from the Gut or that the disorder is in the renal Tubules. The first is most likely explanation. The condition can be prevented to a fair

extent by restriction of chlorides and increased Bicarbonates by mouth.

2. Stone formation may occur in lower end of the transplanted Ureters.
3. Encrustation at the lower end of Ureters leading to rectal bleeding may occur. This can be treated with rectal irrigations with dilute Acid solution.
4. Stricture of Ureter. This might require Nephrectomy.
4. Renal failure :—This is most likely to occur in Uretrocaecostomy and is not seen in Uretrocolostomy. Therefore Uretrocal costomy is never justifiable.

In due course of time when the patient develops good Sphincter control, gain of weight and absence of thirst, the Ectopic bladder should be excised and the gap closed by suturing the anterior layer of the recti sheaths. This 3rd stage of the operation will be performed in due course of time in the present case.

SUMMARY

1. A female child with Ectopia Vesicae in whom bilateral Uretro-Sigmoidostomy has been done, was presented.
2. The anatomy and Pathology of the condition has been discussed.
3. The important points in treatment have been given.
4. Complications have been discussed.
5. Ectopia Vesicae is said to be more common in the male. The present case was that of a female.

A Study of some Aspects of Virology

BY

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NO branch of Microbiology has developed so quickly in past 20 years or so as virology. It is one of the subjects formerly prerogative of the biologist, in which in recent years great knowledge has been obtained.

Bedsor (1937) stressed the point that one should not generalise for, just as there are considerable differences between bacteria e.g. Pneumo-cocci, Tubercle bacilli and Cholera Vibrios, similarly a difference can be expected to occur between viruses.

At times the suggestions had been made that mechanism of immunity in virus diseases is quite a different process from that occurring in bacterial diseases. The theories at that time were :—

- (a) Active immunity could only be engendered by actual infection in a virus disease.
- (b) In a virus disease the immunity was in part, or in whole, a tissue immunity.

- (c) The protective antibody was produced in response to an antigen elaborated by the tissues of the host and not by the virus itself.

The history of civilization is largely the record of man's struggle against deleterious factors in his environment. He must either insulate himself from such factors, adopt himself to those factors or overcome them. To maintain and extend his supremacy, man must, therefore understand not only himself but the world in which he lives, for his body is not a passive unit in a passive environment.

The cruder inclinations of nature present no problem today. These items continue to be a centre of argument. As far as viruses are concerned it is now generally agreed that antibody combines with the virus to neutralize it. Bedsor and a number of other workers, who have discussed the subject more recently have also suggested three mechanisms, that

is :—

- (i) Persistence of virus without neutralizing antibody for virus.
- (ii) Persistence of antibody without virus.
- (iii) Persistence of virus and persistence of antibody.

Humoral immunity had received the strongest support as being the predominant mechanisms in most virus infections. Antibodies are sometimes relatively tangible which one can measure by various tests in vitro and in vivo, but the presence of tissue immunity by itself is much more difficult to assess.

Here it may be mentioned by the way, that among microbes, pathogenic organisms have a special place. Only an infinitesimal part of microbial life is disadvantageous to human life. Much of this category is indifferent to human being in the sense that human tissues do not form a favourable environment for its existence and therefore no tangible interaction between the microbial life and man can occur. Some of the micro-organisms are highly useful to man directly e.g., the normal inhabitants of alimentary canal. The small group of micro-organisms that interact unfavourably with human life are important more by any scale of nature but only in relation to man. Pathogenic organisms are not rigid entities carrying destructive forces, for the

living things they struggle for survival and this effect on man is incidental to their own life and not due to planned malice. From man's point of view they are foreign proteins against which he has a considerable power of insulation and defence when insulation fails.

The introduction of the use of hen's fertile egg and more particularly, the use of tissue culture since 1949, has resulted in even more intensive investigations of the mechanism of the investigation of virus by neutralizing antibody in the blood. However, in spite of the many advantages which the technique of tissue culture has in comparison with experiments in animal hosts, the cultures are not an exact model of the natural condition and the condition of primary hypo or agammaglobulinaemia in man which offers suitable subjects for investigating this problem, has been recognised at an opportune time (Brunton (1952), Jean (1953), Good (1954)). The term agammaglobulinaemia has priority over hypogammaglobulinaemia where they are considered synonymous but as nearly all these patients have some gamma globulin circulating, the term hypogammaglobulinaemia will be used here. No reference to a similar condition to animals had been found. The first case was a boy aged 9 years reported by Brunton in U.S.A. Since then a small number of children of both sexes were found who are subjected to recurring The disease appears

to be congenital and is possibly due to persistence of the early faetal state, for some reason as yet undetermined. All the cases in children in U.S.A. have been males and related to one another. Janeway (1953) regards it a sex-linked mandation character of recessive type. Delontre and Fonty (1955) reported the condition in female children in France. Pearce and Perinpanayagam (1957) and some others reported the same in England. It is also being studied whether there exists any fundamental difference in the condition among male and female children. Young and Wolfron (1954) found several cases in adults in England which may be idiopathic or associated with diseases of raticulo-endo-thelial system.

There is a long list of viruses which show complexity of structure in which a number of specific particles can be separated from viral suspensions. The particles range from those which are considered as the fully infective particles to smaller ones, whose properties are mainly serological ranging from haemagglutination down to complement fixation. The term soluble antigen which was originally applied by Craig in vaccinia, has been carried through to the smaller viruses in which the solubility of the small particles is hardly a criterion of differentiation from the large particle. According to the view of the worker, both the smaller and the larger could be regarded as neither soluble or insoluble. There is a tendency now to refer to the

particles in term of their properties rather than by an arbitrary definition of solubility. The complexity mentioned above occurs in the viruses of vaccinia, mumps, herpes, influenza, yellow fever and also in encapheletides, dangue and poliomyelitis etc. etc. 234

In fresh unfractionated virus preparation the two major components exist in a proportion and that each contributes 50 per cent of the total complement—fixing activity. On storage and on more violent treatment disintegration of the large components takes place with decrease of infectivity, and relatively higher proportion of complement fixing activity appears in the small compound fraction. Heat treatment produces the effect in a few minutes. The intermediate component appears is sediments of larger material. Deposits from the original virus suspension resuspended and recentrifuged yield supernatants which have compliment fixing activity.

With regard to hypogammaglobulinaemia following points are noteworthy :—

- (i) A Medical Research Council Committee was formed in U.K. in 1955 to keep to co-ordinate the study and treatment. Serum of these patients is examined from time to time for the presence of various bacterial and virus antibodies in the Central Public Health Laboratory, Colindale.

- (ii) The group studied included, male and female children and adults all about 100 in a group.
- (iii) All those who have been vaccinated against small-pox prior to being diagnosed as hypogammaglobulinaemia cases have had a normal reaction with normal healing.
- (iv) All but one of the young males has been antibody-free before commencing treatment, one boy had low titre to one type of poliomyelitis virus. All the young females have been devoid of antibody.
- (v) As reported by Pearce one young female developed Paralytic Poliomyelitis from a type I virus infection, but she made a fairly good recovery with a weekly dose of 760 mg. of gamma globulin, which dose was continued from the onset throughout her illness. The neutralizing titre at the presumed time of illness was probably $1/8$ to $1/16$ against 100 T.C.D. in monkey kidney culture in rubber tubes.
- (vi) Children in families whose parents and siblings have antibodies to herpes simplex have had few obvious attacks of clinical herpes simplex. This is also true of adults.

- (vii) In general those injected with Influenza or Poliomyelitis vaccine have failed to produce antibody. One adult female who made a spontaneous recovery developed antibodies during the course of an attack of Influenza Asian type and about 8 months later had a good antibody response to one dose of influenza vaccine and also responded to two doses of poliomyelitis virus vaccine.

With regard to vaccinia virus which is more interesting from the point of view of Pakistan the following may be mentioned :—

- (i) Normal "take" and normal level of Gamma globulin in serum with development of neutralizing antibody.
- (ii) Normal "take" in the presence of passively administered antibody.
- (iii) Normal "take" but hypogammaglobulinaemia present and no detectable neutralizing antibody develop.
- (iv) Abnormal "take" followed by:—
 - (a) Generalised vaccinia with normal skin with slow development of antibody and recovery.
 - (b) Generalised vaccinia with eczema ; may have normal

gamma globulin, development of antibody, recovery or death, may have normal gamma globulin but no neutralizing antibody development, and when given gamma globulin may recover or die.

- (c) Serum from one fatal case of vaccinia gangrenosa was said not to contain gamma globulin but neutralised virus on chorio-allantoic membrane of developing chick embryo.

My thanks are due to my colleague Dr. Ijaz Hassan for his valuable suggestions and correcting the proof.

REFERENCES

Brunton, S. P., (1937), *Proc. R. S. C. Med.*, 31, 1.

Brunton, O. C., (1952), *Pediatrics Springfield*, 9, 722.

Good, R. A., (1954), *Amer. J. Dis., Child*, 88, 625.

Hassan, S. R. (1933), *Arch. F. Sch. Tropen. Hygiene, B.* 37, 48.

Hassan, S. R. (1960), *Pak. J. Health, Vol. X*, No. 1.

Hassan, S. R. (1949), *Proc. Pak. Sc. Con.* (1).

Janeway, C. A. (1953), *Trns. Ass. Amer. Physns.*, 66, 200.

Jean, R. (1953) *Pr. Med.*, 61, 823.

The Tuberculosis Association : A Potent Force in the Fight Against Tuberculosis

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TUBERCULOSIS is a major cause of death in our country. It is roughly estimated that it takes a heavy toll of one precious life every three minutes and at any time the country is faced with the vast multitude of tuberculosis patients numbering in the neighbourhood of one million. The economic loss calculated on account of death and sufferings due to the onslaught of tuberculosis is estimated to be 168 crores rupees every year. Besides the physical and economic loss, the immense emotional and physiological setbacks, which are felt by the tuberculosis patients, their family members, relations and friends cannot be measured either in terms of figures or words. In fact the disease corrodes the very foundation on which rests the stability and vitality of our society. What a loss indeed it is from a disease which is curable, preventable and which has been successfully eradicated from many technically developed countries of the world.

Tuberculosis is not only a physical disease, which need to be treated biologically, but it is also a social disease, and therefore it must be dealt with on both physical and social fronts. Tubercular Bacillus is just like a seed which flourishes in the fertile soil of poverty, congested and unsanitary living, ignorance, poor personal hygiene, lack of recreational facilities, mal-nutrition, mental worries, etc.

The disease has implications of disgrace and taint and this leads people to adopt an attitude of hush-hush about its presence. Generally speaking, the majority of our population are misinformed and believe that tuberculosis is an incurable disease which is inherited. A dreadful fatalism has grown up in regard to it.

THE NEED AND THE LIMITATIONS OF GOVERNMENT.

The question now arises, how to grapple with the situation? Let us first take up the

primary and the most important aspect of a tuberculosis control programme. It is the provision of diagnostic and treatment facilities to the tuberculosis patients, which is their basic right.

Basing our need of one lac population as one TB clinic and 20 tuberculosis beds, which is a modest estimate, we require 800 Tuberculosis Clinics and 16,000 tuberculosis beds in our country. And calculating fifty thousand rupees as capital expenditure and another fifty thousand rupees as recurring expenditure per year for each clinic and 16,000 tuberculosis beds scattered in 1600 tuberculosis hospitals having 100 beds, each costing twenty lacs rupees as initial expenditure and four lacs rupees and recurring expenditure per year, we will have to spend in total three hundred and thirty two crores rupees as capital expenditure and sixty eight crores as recurring expenditure per year for the whole of the Pakistan. These figures seem to be fantastic to a layman for the treatment of only one disease but these are based on the standard expenditure which has been adopted for medical care for tuberculosis by the progressive nations of the world.

If our Government suspends all its activities and pools the annual budgets of the provincial governments as well as the Central Government, the capital expenditure of the tuberculosis institutions (Tuberculosis Clinics and Hospitals) will hardly be met. There will be no money left for meeting recurring expenditures of these institutions.

It will be interesting to note that even if the Government decides to supply free anti-TB drugs to all the TB patients in their homes, it will cost it 18 crores rupees per year (at the rates of annas eight per patient per day for one million patients). But the fact is that the Government has limited resources and multifarious responsibilities to tackle. It could only allocate twenty lacs rupees for anti-TB work in the Second Five Year Plan. If we leave it to the Government entirely to provide diagnostic and treatment facilities single handedly, we cannot even begin to meet 10 percent of these needs in our life time.

There are other anti-tuberculosis activities, which are equally important and should be carried out simultaneously with the diagnostic and treatment facilities. They are health education of the people in the tuberculosis problem, preventing the healthy from becoming infected, rehabilitating the cured patients, solving the social and emotional problems of the tuberculosis patients, providing economic relief to the patients and their families and creating a wholesome environment with a minimum of social ills, so that the agents of tuberculosis may not be able to damage the healthy section of the population.

COMMUNITY RESPONSIBILITY.

It will be thus observed that tuberculosis is not only a grave and costly public health problem but is also a very complicated one. No official agency, however

resourceful it may be, can tackle this problem without active support of the community. The people must voluntarily come forward with their resources talents and energies to supplement the efforts of the Government for the control of this fell disease.

"In every community there are large number of people who are willing to contribute, to identify with and participate in any constructive community effort. This is a fact frequently ignored by those who are convinced that only apathy and indifference exist." From time immemorial people have expressed their goodwill and fellow feelings through charity giving to the needy and sufferers. They have felt a sort of inner satisfaction in bettering the conditions of those in distress. But this 'alms-giving used to be indiscriminate and personal.

In this scientific age the community is organised to plan, execute and evaluate its welfare programmes in the light of its needs and to mobilise private resources to finance its activities.

The community organisation concept in the field of tuberculosis takes the shape of voluntary tuberculosis associations. Professional as well as non-technical persons belonging to different walks of life and various strata of society and obviously dedicated to serve people in need, join hands voluntarily and from an anti-tuberculosis committee with a view to provide welfare services to the TB-stricken people and also to save the healthy section of

the population from getting tuberculosis infection. The anti-tuberculosis committee further sub-divides into small sub-committee to tackle different aspects of tuberculosis control programmes and thus involve all available talents and resources in the community. These committees and sub-committees join together to form a cohesive group, which is otherwise known as a tuberculosis association. This voluntary agency seeks to utilise the manifest and latent goodwill which exists in the community for the welfare of the tuberculosis patients. It has got no legal entity and is supported by voluntarily contributed money. But the moral support of the Government is always available to it.

The tuberculosis association embodies certain fundamental characteristics, which make it possible to use available talents as well as technical and material resources for guarding the public health against tuberculosis in ways not always feasible through the official agency. These characteristics have their origin in a commonly felt desire for health; their ability to hold the interest of outstanding citizens and enlist the services of voluntary workers; their wide support by the good will of the entire public; and last, but perhaps most important, their freedom and independence. It will be interesting and instructive to analyse some of them.

LEADERSHIP

The tuberculosis association is headed

by a democratically elected leader who is ordinarily designated as President. He is respected in the community for his integrity and understanding and is resourceful, inspiring and not only willing to share leadership but to encourage the growth of potential leaders. He has close contacts with problem situations and strong motivation to improve them. In fact he is the "Central Figure" upon whom the other members count and whose opinions are respected. He can help the committee when there is a jam. This "positively identified leader" may help to develop cohesion within the group and plays an important role in determining the degree of community integration.

The leader may be elected for a term of one year or two year depending upon the social situations prevailing in the community. This is required for providing opportunities to potential leaders to bring forth new ideas, enthusiasm, fresh energies and new resources.

It is ideal that the highest administrative Government Official in a district may be the patron of the TB association and may not hold direct leadership, as this officer may be so busy in his official engagements that he does not find much time to develop personal contacts with the people, which is a must for running an efficient voluntary organisation. In addition, his transfer may create a vacuum in leadership for some time during which the organisation is liable to suffer. Whereas the official patronage will provide good moral support to the organisation, the

real operations of its activities are to be done by the community leader.

ACTIVE PARTICIPATION

The formation of committees and sub-committees provides good opportunities for active participation by the people. Under such conditions there is every likelihood for their getting more interested in the execution of the programmes. The fruitful results brought forth with such efforts will not only create a sense of contribution in them but also a failure, if it at all on their part, can be a source of stimulation for more vigorous efforts for better results. Where there is no active participation by members, the planning is insipid, execution is unsatisfactory and results are bound to be disappointing.

MOBILISATION OF RESOURCES

Each member of the committees brings with him talents and resources to be used voluntarily for anti-tuberculosis work. The doctor offers his knowledge and experience and the moral support of his patients and colleagues; the journalist helps the cause of his writing power and influence with the press; the industrialist brings his knowledge and experience of business methods and administration and contributes financially; the voluntary social worker proves an asset in the execution of programme; the teacher is instrumental in planning the preventive measures for school children; the artist produces inspiring ideas in his designs; and the trained social work introduces

scientific knowledge with condition of the programmes of the association. This is a good example of how people from different walks of life can help in furthering the objectives of a tuberculosis association.

The external resources of the community are also fully tapped by a dynamic tuberculosis association. The educative advertisements that appear in the newspapers every week, costing a few hundred each, is a fine instance of mobilization of resources.

The collection of funds through various methods such as donations, contributions in cash and kind, sale of Eid seals, variety shows, etc., is also mobilization of private resources on a voluntary basis. The people willingly support the programme of the association, as their own representatives are responsible for their initiation. There is no coercion from outside.

The voluntary mobilization of resources have also educative value as only those who are conscious of the tuberculosis problem come forward with their financial help.

PLANNING AND ACTION

One of the many advantages of the voluntary TB agency is that there is freedom to plan and execute. The proverbial bottlenecks of official procedure are non-existent in a voluntary tuberculosis agency. There is neither cumbersome routine nor red-taps to delay a

programme. The oft-repeated phrase, UNDER "CONSIDERATION", is also not found in the dictionary of a tuberculosis association. This agency is usually flexible in its organisational procedures without disrupting its regular decision-making routine.

If there is a felt need in a community for a certain anti-tuberculosis programme, the matter is discussed thoroughly in the meeting of Executive Committee of the association, keeping in view the recommendations of the Finance Sub-Committee, a decision is arrived at, if there is no obvious difficulty; an expert sub-committee is formed and is given the green signal to carry out the said programme. Because of statutory and financial restrictions what may take years by an official agency to materialise, is achieved by a voluntary organization in a few months.

The tuberculosis association, being a part and parcel of the community, keeps in view that any health plan for the eradication of tuberculosis must be a part of the whole community picture, if it is to be effective. Plans that are superimposed or forced upon people or even made by outsiders accomplish little, no matter how much technical and financial backing they may receive. On the other hand plans that spring from the people as an expression of their own needs and interests can attain success in spite of what may seem to be an unsurmountable obstacle.

INDEPENDENCE

Perhaps the outstanding virtue of a tuberculosis association is the fact that it is voluntary. It is not compelled to do any thing that it does wish to. It is free to draw its own constitution. And if it finds itself too narrowly circumscribed by its constitution, it has only to amend it (constitution) at the next annual general meeting. If it desires to discontinue certain activities or too assume new ones, there is usually nothing to prevent it. It may enter into new relationship, acquire new quarters, embrace a new sense of destiny. Or it may undertake that most difficult and rare of acts self-liquidation.

No civil service rules or legislative act affects the free choice of its paid employees. Barely can political pressures influence it to sacrifice some employee or discontinue some activity. The inefficient employee may be gracefully dispensed with before the efficiency of the organisation seriously suffers.

PUBLIC RELATIONS.

The tuberculosis association, to be an effective and on-going organ of the community, has to interpret its activities to the people who are either being served or are the supporters of the voluntary anti-tuberculosis work. It must develop active and effective lines of communication both within the association and between the association and the community. The public relation programmes of the associa-

tion are designed to :

- (a) Keep the agency related to other important groups in the community
- (b) Maintain contacts with new developments
- (c) Co-ordinate services with those of other agencies

It has been experienced that the public relation programmes of the tuberculosis association have never allowed moral and financial support of the people to become slack.

ROLE OF THE TUBERCULOSIS ASSOCIATION**Tuberculosis Clinics.**

Case finding and medical care in the field of tuberculosis are generally thought to be the responsibility of the official health agency. But in view of the acute paucity of diagnostic and treatment facilities in our country the tuberculosis associations, which believe in meeting the felt need of the people, have been trying to start or have already started cheap yet effective types of tuberculosis clinics, from where domiciliary treatment and home care are made available to the patients. These institutions are most economical and suit the economic condition of the country. By opening such projects the tuberculosis association also readily gets the recognition of the community and further support is derived.

The administrative operations of these clinics put a substantial drain on the already meagre funds of the agency and as such it is felt that either the official health agency may subsidise or the Local Bodies may take them over after their utility has been demonstrated for two or more years to the community. In order to guard against the loss of public support it will be advisable if some representatives from the tuberculosis association be kept on the managing board of the clinic along with the representatives of the Local Body. Such an arrangement would enable the association to look forwards initiating other similar projects in the community, where there is a lack of such health facilities.

HEALTH EDUCATION

Health education is the most important activity of a voluntary tuberculosis agency. People are informed about the problem of tuberculosis, its repercussions and social consequences. Through constant propaganda and publicity regarding its magnitude the enlightened support and co-operation of the people is made available. The procession of Health Education, *ziz.*, sensitization, health information motivation and community organization, are used to alter the unrealistic and irrational attitudes which are responsible for creating indifference and general apathy towards meeting a health problem and consequently to bring about a pleasant change in the human behaviour for keeping an optimum physical, mental and social health.

A voluntary tuberculosis association is favourably placed to carry out health education programme with effectiveness as such agencies spring from among the people and have their roots imbedded deep into the life of the common man. These educational programmes are tailored by the people themselves in the light of their taboos, folkways, customs and cultural patterns, broadly guided by the scientific knowledge of health education experts, if available. People are liable to accept and to carry out such a programme without any mental reservation.

RESEARCH

Research is an imperative need for sound programme planning. The voluntary tuberculosis association is supposed to explore and survey unscrved human needs in the field of tuberculoses and to find out new, economical and efficient methods to meet them. It can successfully conduct surveys and research projects as it has got easy access to the "Universe". Being sponsored by voluntary efforts, the tuberculosis association can get willing co-operation for its research findings leads to pioneering of new activities and also evaluating the existing ones of the association as well as of Government.

DEMONSTRATION

People are being sometimes "frightened and are being made apathetic by the slogan of colossalness or impracticability of a progrmmme" in the field of tuberculosis control and prevention. Starting experimental projects with a view to

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exploring additional practical methods or to extend the application of the existing methods, is another very important role of voluntary tuberculosis agency. Such a demonstration assures the more cautious or the skeptical, and often paves the way for an official agency to take over such programme. For example, the tuberculosis association, after careful consideration, thought it impracticable to start tuberculosis hospitals, which are too costly to be maintained and started home care programmes through clinics. These projects (T. B. clinics) in due course of time proved useful and effective and now the idea of home care has come home to the Government and it has markedly modified its policies in favour of domiciliary treatment and home care.

Similarly, the solution of the social and emotional problems of the hospitalised tuberculosis patients have never been the concern of the official health agency. The tuberculosis association may provide trained medical social workers in tuberculosis hospitals and sanatoria and demonstrate their utility to the Government in helping the patients to solve their social and emotional difficulties,

REHABILITATION

Rehabilitation and after care of the cured tuberculosis patient is as treating a positive tuberculosis cases. A tuberculosis patient discharged from the hospital faces enormous antipathetic behaviour from his kith and kin, thus multiplying his psycho-social and economic problems, due to which he is often unable to adjust himself to the society and it is probable that with such

acute problems he relapses and again becomes a liability to society. It therefore points towards the fact that there is an imperative need for initiating and sponsoring an effective rehabilitation programme for the cured tuberculosis patients. Restoring the usefulness of the ex-TB patient by providing job placements, occupational and vocational training, etc., in accordance with his needs and assets, is a very important function which, although hitherto ignored, cannot be lost sight by a voluntary tuberculosis agency.

ADVANCING HEALTH LEGISLATION FOR TB CONTROL

The voluntary TB agencies, by their constant public relations and health education programme, arouse public opinion and obtain their enlightened support. These educational programmes also motivate the official agency for consideration and adoption of measures suggested by the voluntary TB agencies at the National and Provincial levels. Thus we may expect these associations to be an active force in advancing health legislation in a democratic way of life.

Voluntary tuberculosis agencies have justified their role in the technically developed countries of the west. They have definitely helped the people of those countries in virtually stamping out the White Scourge within 50 years. Having the experience gained from these sister organisations, I believe our tuberculosis associations, if organised scientifically and run properly will do a better job in a much shorter time,

HEALTH EDUCATION

By

WILMA BECKNELL, B.S., M.P.H.

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THE Twelfth World Health Assembly held last May selected "Health Education of the public" as the topic for the technical discussions held during the assembly. Out of these discussions came the unanimous opinion—"Health education is the most powerful weapon we have in the field of health."

This world wide recognition and acceptance of the importance of education in health makes it imperative that we in health work have the same concept of what this "health education" is. The term has been used in ambiguous ways. To some it means teaching procedures that are performed by some one; to others it means, wide spread information or publicity services. A third concept is that health education is a process of change in the individual which is concerned with helping him achieve personal, family and consequently community health. This places the emphasis on the group with the problem or need.

It is this third concept which we subscribe to along with other health workers. In this concept, a programme of health education means, a programme of providing situations for people in which they as "learners" learn and educate themselves. Too often a programme of health education assumes that the health worker using a bag of techniques is educating.

Health education as any type of education is not given by one person to another. It is not that easy.

Health education is a dynamic, ever changing process of development in which a person is accepting or rejecting new information, building new attitudes and new practices that are concerned with healthful living.

Through years of research and experience we have arrived at a body of health education knowledge and skills. One of the simple and basic principles is this: Human beings act on their wants as they perceive them rather than on their health needs as seen by the health worker. Some of the wants or desires of every human being are adequate food, shelter, clothing, employment, success, social companionship, family life, and parenthood. Good health makes its contribution in enabling people to satisfy these wants in socially acceptable ways. Health is a means to an end, not an abstract unrelated achievement for itself. And as we all know, all programmes directed toward improvement of health conditions must be supported and co-ordinated with improvement programmes in other areas as social welfare, economics, education and agriculture, just as development programmes in agriculture, industry, social,

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welfare must give thought and planing for health conditions.

This educational approach to public health can be looked at from three viewpoints, that of the health agency, the health worker, and that of the people or the public.

From the agency viewpoint health education is an *objective*, that is a public informed on the basic facts of disease and health, recognizing their health and sanitation problems and then motivated to some action which promotes and protects their health as individuals, as family members and as members of the community and nation.

From the viewpoint of the health worker, health education is a *method* and *technique* that will assist in achieving the objective. From the viewpoint of the people, or the receivers, so to speak, health education is a *process*; a process of learning by experiences, experiences that help them acquire information, learn a way to do a thing and to make decisions that favourably influence health behaviors. These experiences come from many sources, a visit to the doctor, a home call by a lady health visitor, a demonstration by a sanitary inspector, a village meeting on health problems, information services and newspapers, health education in schools, just to name a few.

We have defined health education as a continuing and active process of learning by experience and said that it is a fundamental public health method in achieving the goals of the public health

programme. It is not a programme distinct from other public health service programmes. It must be an integral and vital part of all health services and programmes.

The educational aspects of any health programme should be planned at the same time and with as much care as the service or operational phase. This planning starts with the consideration of the specific health problem and the development of a total program to solve this problem. The planning must then proceed to define the practices or behavior that people must follow to achieve the solution of the problem.

It is as in medicine, effective health education requires careful examination and diagnosis. After this educational diagnosis and examination there must be treatment. Health education has rich and varied sources to draw from, Psychology, Medical Science, Anthropology, Sociology, Public Health, Public Relations, Human Relations, Communications, Education. The key to successful treatment is the choice of the right tools from the many educational methods to do the right job, that of providing experience to help bring about the defined changes in knowledge, attitudes and behavior among the target group.

Just as in medicine also, there must be observation and evaluation of the progress of the treatment. It may be necessary to change parts of the treatment, find new aids or different channels to reach the target group.

HEALTH EDUCATION IN SCHOOLS

By

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EDUCATION affects all spheres of life. Health education primarily so. The school as a special institution, is in many ways, or should be, an extension of the home. The educational process that paradoxically commences before the birth of the child through the hereditary characteristics and tendencies of the parents becomes an active force through the environment of the child.

From birth till the period a child enters the school, the home remains the one dominant influence for all education. The home and the social surroundings continue to remain the most potent educational influences throughout one's life. The period of schooling which lasts in our country for the majority of children for five years, cannot have that lasting effect it is meant to have. Yet, whether schooling lasts for five or fifteen years, the educator cannot escape his responsibilities in the field of health education.

In the words of the report on National Education, "the educational system is the instrument a society uses to equip all its

people in leading productive public lives and full personal lives according to their talents and interests". Again, in the chapter on primary education, the first objective is worded as "to provide such education as will develop all aspects of a child's personality—moral, physical and mental." I cannot resist making two more quotations. In the chapter on women's education, it is considered a woman's obligation "to impress on the child the importance of CLEANLINESS, truthfulness, honesty, co-operation, a desire to learn and improve himself and his community". Very rightly the chapter on adult education accepts that the people of a country, who are its greatest national assets and responsibility, can be a vital and economic assets if they are literate, healthy and productive. But they become a national liability if "they are illiterate, diseased and unproductive". In this chapter very categorically, the framers of the report write: "The aim of education, *i.e.*, the development of the individual to his full capacity in his personal and social life, so that he may be a **HAPPY, HEALTHY,**

AND USEFUL CITIZEN and able to make his optimum of contribution to the community in which he lives."

The outline of the Second Five Year Plan emphasises the necessity of understanding, support and active participation of the people in the programme of health education. It has been realized that prevention of diseases is cheaper for individuals as well as government, hence great emphasis is laid on health education and school health.

Coming closer to reality, our problems are gigantic in all fields. Our literacy levels and our present facilities for education are all too well-known, to need any statistics to support the same. But the desire to improve in all fields of national life has marked the effort of our leaders from 14th August 1947. The city of Karachi had 41 Secondary Schools and about 200 odd Primary Schools at one time. Today these numbers have multiplied beyond imagination and the reality of the situation is something which might shock the most hardened individual. Yet it is a matter of great pride for us that the government has set up the school medical service, has commenced medical service, has commenced medical surveys of school children, has provided measures for the supply of milk and diet in certain areas for the needy. This part can be found out from the report of the school medical service.

Health education as an integral part of school education has been accepted as the

basis of good education. But the educational process is all-prevading. The school has to accept that health education programme should stand for something much more than a mere series of routine class lessons on the facts of physiology, anatomy or hygiene. The school has to become a dynamic centre not preaching health but practising actively the precepts of healthy living through the promotion of the complete and harmonious development of bodily structure and function and to inculcate in each individual a sense of the worth and satisfaction of the physical fitness which will lead to a healthy way of life.

Learning the laws of health through the provision of clean, cheerful, healthy environment, with a generous provision for keeping clean in the form of wash basins, showers etc., is an invitation in itself to learning the elementary lessons of health. The nursery schools in our own city are worth visiting. Within the limitations of money and material, the effort is on. The milk break, the lunch interval, the showing of educational films on health, singing of songs like the chorus of the Junior Red Cross Group, "Health, fellowship and service", all lend themselves to teaching the basic principles of health education.

We have already referred to the medical check-up. These are extremely essential at the entrance and during the course of the school period. But we must sound here a note of warning. Medical examina-

tions are of little value if the suggestions and warnings given by the doctors are not followed up by the treatment and prophylactic measures.

In the primary schools the general environment of the schools—the furniture, the provision for cleaner habits—are sadly lacking in many of our institutions. Yet health science does form a subject of study. Unfortunately, it is taken up as one of the examination subjects to be taught with chalk and talk and learnt from books. There are exceptions to this rule. Through wonderful movements like the Junior Red Cross, the Cubs and Bluebirds, dynamic health education is being given in schools at primary level. Here again we must remind all concerned that the school is an extension of the home of the child and particularly in the field of health education. The Mothers'-Teachers' Association and the Parents'-Teachers' Associations can be a vital co-ordinating and educating force.

In Secondary Schools, according to the syllabus framed by the Board of Secondary Education, physical education has been made a **COMPULSORY NON-EXAMINATION SUBJECT** and, in the syllabi it says, "the aim of physical education is to promote the health and physical development of the pupil. As intellectual development largely depends on the healthy growth and vigor of the body, and right discipline of the body contributes to strength of character, the aim of physical education may well be said to be to produce young men who are

healthy and strong in body, alert in mind and self-controlled and courageous in character. No doubt these are ideals placed before us. But in reality health education, if not neglected, is not given that due attention by all concerned. People and principals, teachers and parents, all think that the task of health education is that of the so-called drill teacher, P.T. instructor or the physical education man. No doubt physical education and health education are very very closely knit. In other situations the task of physical education is passed on either to the science teacher or the teacher who teaches biology and hygiene. In reality it is the job of every teacher to be responsible for the health of the child under his care. No doubt the major responsibility must be borne by the principal himself. All concerned have to be told that the child must know the value of good health not only for himself but for all others. The knowledge of one's own body, its strength and weaknesses, its potentialities and possibilities can be encouraged through scientific teaching, actual practice of taking physical exercises, measuring one's height and weight, trying one's strength in healthy games and sports. All teaching must be definitely positive in outlook, stressing all the time what should be done, not what it is advisable to do.

In Secondary Schools health education has to face the problem of sex education. The knowledge of biology and the knowledge of child psychology, demands

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the treatment of this subject in the most natural manner. In our country where sex segregation is a major problem, we suffer from many difficulties. Yet the problem of mental health depends considerably at this stage on the knowledge of life and its natural developments.

Physical education can become the real basis of health education when the teachers in charge of games and sports are given the right attitude and the right knowledge of their responsibilities. Teachers under training at all levels have to sit for a paper in school health and hygiene. That is not enough. The teachers themselves should participate in healthy activities and show by personal habits an example in healthy life.

The extra-curricular and co-curricular movements already referred to, such as the Junior Red Cross, the Junior Ambulance Brigade, Scouting and Guiding, have considerably and potentially affected the health habits of school children. It is only a matter of very great regret that the emphasis that should be given to these movements is not yet sufficiently realised. The fact that in Karachi only a dozen

schools are actual members of the Junior Red Cross and the Junior St. John's Ambulance Brigade, reflects sadly on the importance really accepted by all concerned.

If health is a necessity, diseases are a reality. At all stages children suffer from infectious diseases. The law of health and hygiene are not to be just taught but teachers and children should be made to realise the impact of these on their society, their family and their community. They should be told of the realities and the poignant effects of maladies such as T.B., cancer, typhoid, leprosy etc. They should be made to realise that mankind has succeeded in fighting these diseases and we can through knowledge and right effort do the same.

Health education can become dynamic and real when parents, teachers, the community join hands and teach through practice that the time and money spent in repairing the injuries of disease, by the child learning the laws of health, is the cheapest and best.

The Oto-Rhino-Laryngology Society West Pakistan

By

Dr. A. RASHID,

D. L. O. Fics.

IT gives me great pleasure to have the privilege of welcoming you all here to celebrate the inauguration of the 3rd Annual Conference of the Oto-Rhino-Laryngological Society of West Pakistan, and to address such a distinguished gathering in my capacity as the President of the Society. First of all it may be mentioned that the main object of this society is to promote the knowledge relating to the diseases of Ear, Nose and Throat and to popularise among the masses of the country the benefits promised by the advanced surgery in this particular line and to encourage people to make use of it and to obtain relief from their multifarious illnesses affecting their health. For this purpose the society periodically holds clinical meetings inviting specialists in Ear, Nose and Throat with a view to demonstrate and discuss the cases of special interest and also enabling members to exchange views and solve problems facing them in their day to

day experience. Some members of this society including myself have contributed articles, which appeared in the Ear and Throat Section of the Medical Journal Medicus in 1958-59, and which I believe have been appreciated by the readers of the Journal and have benefited the patients.

Now I take this opportunity to refer to the recent changes made in the curriculum of the final M.B., B.S. Examination to come into operation in 1962 of which we take a very serious view because if these changes are put into affect, a serious set back will result in the efficiency of the general practitioner in helping the people living in those parts of the country, where there are no Ear, Nose, Throat and Eye Specialists except the fortunate towns of Lahore, Multan, Hyderabad and Karachi, where Specialists are easily or readily available. The changes made, enable a student to pass the Examination if he can manage to get good marks

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in general surgery even though he obtains very poor marks in Ear, Throat and Eye subjects *for the Ear, Nose, Throat and Eye will not then be treated as a separate and independent subject carrying equal marks with general surgery but will be incorporated in the latter.*

This is a matter of public importance and I request you, Sir, to give it your immediate attention and take steps that might be considered necessary and fit in this behalf. Proper importance has to be attached to the fact that if the scheme is put into operation, the future Graduates will be in a position to considerably ignore these subjects because they will be able to get through the examination even by giving lesser attention to them than they give, now, and consequence will be that when they will enter into practice they would not be able to properly diagnose and treat the diseases of the Ear, Nose and Throat. A cross section of the patients attending the clinics of the General Practitioners and those of the Hospitals will reveal that 9 out of 10 are found with symptoms the cause of which is referable to disease of the Nose or Throat, and, therefore, if the general Practitioner is not in a position to diagnose properly he will only beat about the bush and administer unnecessary medicines to the patients to their detriment. Even if such an erroneous treatment would not cause any harm in certain cases the fact remains that the suffering of the

patients will not in any case be mitigated or eased by the administration of wrong and expensive medicines. It is an irony of fate that it has been found advisable to bring about the changes in the syllabus of the M.B., B.S. final examination knowing very well that there are no special Ear, Nose, Throat and Eye hospitals as will be found in almost all the civilised countries and the burden of these diseases is too to be put on the general practitioner and hospitals. It will be observed that in the United Kingdom for instance, there is no town which has the misfortune of not having a special hospital solely for the purpose of treating patients with Ear, Nose and Throat diseases or with the diseases of the Eye. I will therefore also suggest that arrangements should also be made to have separate modern hospitals of these specialities and attachment of E. N. T. units to district civil hospitals.

Experience has shown that patients suffering from malignant growths reach the specialists only when it is too late to cure them. This is because there is a natural hesitation to undertake long journeys and because the ordinary human being treats such growths to be very trivial maladies in early stages. This sometimes happens also due to lack of proper diagnosis and advice tendered by the general practitioners, and for this reason too more importance need be attached to E. N. T.

subjects rather than change the syllabus to weaken the incentive to study them with utmost care.

There is no dearth of Ear and Throat specialists in this country now and, therefore, the desirability of having special hospitals for the purpose of dealing with E. N. T. diseases as suggested above may be put into effect without any hesitation or difficulty.

Fresh discoveries and advancements have been made in surgery affecting all organs, and in particular to the surgery employed in curing deafness, and with the development of magnification and illumination by operating microscope and binocular loupe it has been made now possible to employ special techniques to deal with deafness. This brings me to a point where I should mention that it is, in the circumstances, most vital for the benefit of the public to send specialists to visit hospitals abroad to enable them to refresh and promote their knowledge and come back fully equipped to make use of these advancements. Foreign scholarships and subsidiary tour for this purpose ought to be made available to senior personnel of the Ear, Nose and Throat departments. For our part we have started an endaural surgery clinic in Mayo Hospital on a small scale, providing facilities to start Endaural surgery on cadavers and dry temporal bones and also the opportunities to witness these operations on the patients. Only one Candidate, however, can avail of the facility at a time. For this tribute must be paid to

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Colonel Rafiq Ahmad Khan the Administrator, K. E. Med. College and Mayo Hospital, whose keen interest and efforts materialised this scheme.

Another essential problem is to obtain equipments for specialists from abroad, and I point out that an intolerable delay is caused in obtaining facilities to purchase these equipments because of very lengthy and annoying procedure that has to be adopted before one can place an order for the supply of an article. I therefore, suggest that the authorities be approached to provide facilities for necessary equipments to be purchased from abroad within shortest possible period of time.

Finally I am most grateful to you, Sir, for having so kindly agreed to perform the inauguration of this conference while you were faced with multifarious preoccupations attendant upon your high office, and I thank you for this on behalf of the society and myself. My thanks are also due to the principal of the Nishtar Medical College for having allowed us the use of this magnificent hall for holding this conference.

The Secretary of the Society, Dr. Abdul Ghani deserves my warm commendation and praise for the pains that he has taken to make necessary arrangements to make this occasion a success. I am also grateful to members of the society for taking keen interest and to Ex-President K. B. Dr. M. BASHEER for his valuable advice on several problems.

MEDICAL SUPERVISION IN FACTORIES

By

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PURPOSE OF MEDICAL SUPERVISION

The main purposes of such supervision is to maintain the health of workers at full efficiency for the purpose of greater industrial output. This object can be achieved by :—

- (a) Consideration of workers' physical and mental condition when taking up employment in industry and throughout industrial life.
- (b) Periodical check of environmental conditions under which they work.
- (c) Every worker should be engaged on work fitted to his physical and mental capacity.

The medical supervision in collaboration with medical social and rehabilitation services should be able to prevent sickness, reduce its consequences and minimise the effect of any injury that may be caused by accident.

It is obvious that medical supervision is beneficial both to the worker and the industry because if properly applied it can avoid distress to the worker from loss of earning capacity due to sickness and loss to industry by the loss of earning capacity which can run into many lakhs of rupees every year. The Health Education in the Factory can be given by the following effective ways :—

- (a) Education in the form of advice to industrial worker when they attend the ambulance room.
- (b) By short talks from time to time to groups of workers.
- (c) By films and film strips on specific industrial health hazards.

ACCOMMODATION OF INDUSTRIAL HEALTH DEPARTMENT.

To begin with there should be a separate consultation room attached to the ambulance room. If the process is such as to requires the routine examina-

tion of blood and urine, then a small additional room can be provided for such work. while planning a site for accommodation, provision should be made for the extension of industrial health service.

CO-OPERATION INSIDE THE FACTORY.

The factory doctor should try to gain full cooperation of the labour management. The factory doctor should help in the selection of workers, keep himself in touch with labour turn over. Since records of absenteeism are kept by labour management department, it is useful if the doctors keeps himself in touch with this record. The factory medical officer should keep his interest in all the social and recreational activities of the workers. By doing so he would win the confidence of workers without which no scheme of medical supervision can fulfill its function.

SUCCESS OF MEDICAL SUPERVISION.

The real success of any form of medical supervision depends upon the status given to factory doctor. It is very essential that he should be an integral part of the management and must have direct personal contact with the management. The advantage of this is obvious as he would be able to convey his views immediately regarding general conditions of employment.

Where a good number of workers have to be supervised it is advantageous to engage whole time factory doctor otherwise a part-time service of a doctor can suffice.

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PRINCIPAL DUTIES OF A FACTORY DOCTOR.

(i) He should be responsible for the *Organization and Supervision of First Aid Services*, for the treatment of injury and sickness arising at the place of work. He is not advised to undertake any treatment at home and can give continued treatment at the works in consultation with patients' own doctor.

(ii) He should examine medically and advise persons referred to him by the management or industrial employees who consult him.

(iii) He should carry out the medical examination of persons employed or about to be employed in process having a specific health hazard.

(iv) He should assure himself of the fitness of persons returning to work after long illness.

(v) He should advise the management on general hygiene within factory.

(vi) He should keep an effective liaison with outside health services.

(vii) He should keep in confidential form adequate and suitable record of his patient worker.

(viii) He should carry out health education of workers in matters of general and personal hygiene,

MEDICAL EXAMINATION OF NEW EMPLOYEES.

It is the requirement of the factory act that all young persons under the age of 17 years should be medically examined and certified that they are fit for employment in the factory.

These examinations should be carried out by Health Officer of the district who may be designated as appointed factory doctor by Chief Medical Inspector of Factory appointed at the provincial health directorate. It is also advisable that medical examination of all entrants irrespective of age should be carried out. Factory doctor after medical examination should be able to give advice to the management as to his suitability for the particular job proposed.

SUBSEQUENT EXAMINATION OF WORKERS.

Examination at stated intervals can be carried for those employed in processes which involve some special health risks.

Chief Medical Inspector of Factories can specify certain dangerous processes and interval at which these periodical medical examinations should be carried out. Apart from special processes it is worth-while to carry out *Periodical Medical Examinations*, if factory faces with a problem of large turn over or fall in production in a group of workers because medical examination might indicate you whether physical condition of the worker as a result of the nature and circumstances of their employment may be the cause of large turn over or fall in production. If by medical examination the factory doctor is able to establish relationship then he would be able to institute suitable preventive measures. It is recommended that this aspect of medical supervision should receive greater attention on the part of factory doctor.

MEDICAL EXAMINATION OF WORKERS' ON RETURN TO WORK AFTER INJURY OR ILLNESS.

Since doctor outside the factory has not got the intimate knowledge of the nature of the work, therefore it is quite possible on the one hand he may be unwilling to send his patient to work when in fact the work upon which the patient would be employed, had he returned to work, may be beneficial or on the other hand he may pass him as fit to do so before he is actually fit for that particular work.

It is here when a factory doctor can undoubtedly help the medical attendant in this respect. Therefore it is very much desired that a close contact between factory doctor and patients private doctor be established in order to arrive at some useful decision regarding workers' future occupation. Such ideal coordination between the work of private medical practitioner and factory doctor demands that factory doctor must interview and in some cases carry out thorough examination of every worker returning to work after long illness or injury. It may be that, with the co-operation of the management some alternate employment, not the patients own job be found temporarily which will help complete recovery.

It is obvious that factory doctor can play an important role for the reconditioning and resettlement of disabled persons in industry.

STUDY OF WORKING ENVIRONMENTS.

It is very essential on the part of

factory doctor to make himself acquainted with all the processes in the factory.

It has two advantages :—

(a) Workers in their working environments experience a feeling of confidence that their interests from health point of view are being watched.

(b) Factory doctor gets the first hand knowledge of the process which helps him to assess the relative liability to sickness and injury from each process concerned. Further he will be in a position to forward recommendations which will be of benefit to the worker and the management.

FIRST AID

Factory Medical Officer should supervise the first aid arrangements and is responsible for special training of the personnel and ensure that such trained personnel are distributed throughout the works.

RESPONSIBILITY FOR TREATMENT.

The factory doctor should ensure that efficient treatment is given to sick or injured workman sent from the works and when injured workman is referred to the hospital it is essential that factory doctor should also keep in touch with hospital so that he could be able to watch the progress of patient.

This procedure has advantage because if patient be requiring specialised treatment, he could inform the management which might contribute towards it or after discharge from the hospital the patient might be requiring physiotherapy.

This procedure on the part of the factory doctor encourages the patient to pursue his rehabilitation and early return to his original work.

RECORDS

It is one of the foremost duty of factory doctor to keep adequate medical records of each worker under his care. By so doing he can win the confidence of the worker and will be in a better position to keep the management informed on the general health of the workers.

PROCEDURE FOR KEEPING RECORD

The factory doctor should keep :—

(a) Record of attendances at the ambulance room for illness or injury.

(b) Record of the nature and length of any illness resulting in absence. It will be further useful if such information is recorded for each department or special groups of workers.

ADVANTAGE OF RECORD

KEEPING.

If these records are analysed statistically some of these might show excessive sickness rate which might reveal a cause not otherwise suspected. Thus factory doctor will be in a better position to suggest the management which suitable preventive measure could be adopted.

EDUCATIONAL ACTIVITIES.

It should be the prominent duty of factory doctor to educate workers on matters of general and personal hygiene. This education is important as the factory may form a basis of education in hygiene to be translated in the home.

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Factory Medical Officer should supervise the first aid arrangements and is responsible for special training of the personnel and ensure that such trained personnel are distributed throughout the works.

RESPONSIBILITY FOR TREATMENT.

The factory doctor should ensure that efficient treatment is given to sick or injured workman sent from the works and when injured workman is referred to the hospital it is essential that factory doctor should also keep in touch with hospital so that he could be able to watch the progress of patient.

This procedure has advantage because if patient be requiring specialised treatment, he could inform the management which might contribute towards it or after discharge from the hospital the patient might be requiring physiotherapy.

This procedure on the part of the factory doctor encourages the patient to pursue his rehabilitation and early return to his original work.

RECORDS

It is one of the foremost duty of factory doctor to keep adequate medical records of each worker under his care. By so doing he can win the confidence of the worker and will be in a better position to keep the management informed on the general health of the workers.

PROCEDURE FOR KEEPING RECORD

The factory doctor should keep :—

- (a) Record of attendances at the ambulance room for illness or injury.
- (b) Record of the nature and length of any illness resulting in absence. It will be further useful if such information is recorded for each department or special groups of workers.

ADVANTAGE OF RECORD

KEEPING.

If these records are analysed statistically some of these might show excessive sickness rate which might reveal a cause not otherwise suspected. Thus factory doctor will be in a better position to suggest the management which suitable preventive measure could be adopted.

EDUCATIONAL ACTIVITIES.

It should be the prominent duty of factory doctor to educate workers on matters of general and personal hygiene. This education is important as the factory may form a basis of education in hygiene to be translated in the home.

BCG VACCINATION IN PAKISTAN

By

DR. M. HASAN,

Director BCG Campaign.

THE BCG Vaccination as public health measure to protect the susceptible children and young adults from tuberculosis, was introduced in Pakistan in the year 1949. For the first few years the vaccination campaign was technically directed by advisers from International Tuberculosis Campaign. Training of medical officers and auxiliary staff and demonstration of the vaccination to the public to make it popular were main concern of the campaign in those days. When the I. T. C. was wound up in the middle of 1951 WHO took over the charge of technical direction in co-operation with UNICEF from supplies of imported medical equipment, transport vehicles and other necessary material. The campaign was expanded and the vaccination teams were spread all over the country. Twelve standard mobile teams, each consisting of one medical officer, 12 technicians and adequate number of other subordinate staff were organized in East Pakistan and they were posted in different districts to cover the adjoining areas one after

another. Similar 13 teams were also established in West Pakistan and they were posted in different regions according to the density of population. In Karachi a team of 6 technicians was created in the school health services to operate in the schools and colleges whereas another team continued their programme among the non-school going population. The campaign took the shape of a mass campaign against tuberculosis all over the country.

In the beginning of 1958 WHO decided to withdraw their last adviser on BCG vaccination from Pakistan. The Government took over the charge of the campaign and appointed a Director and a Statistical Officer in the Office of the Director-General of Health to direct, co-ordinate and assess the campaign. The Administration of the campaign at the Provincial level continued to remain under a full time Field Supervising Officer in West Pakistan and a Provincial Tuberculosis Officer in East Pakistan, both being senior members of the Pro-

vincial Health Directorate. The UNICEF however, went on co-operating with the material help. The first round of the campaign in West Pakistan covering all the districts was completed in 1957 and a second campaign is now under progress there. In East Pakistan where the transport facilities are poor, the first campaign is still going on and is expected to be completed by the next year.

Since the inception of the campaign in Pakistan altogether more than 32 million persons have been tuberculin tested and out of them 12 million negative reactors BCG Vaccinated. In the WHO assisted BCG Campaign all over the world, Asia accounts for 94 per cent of the total number tested in the entire programme. the Indian Campaign accounting for 50 per cent, Pakistan Campaign alone for 11 percent and the other 19 Asian countries for 33 per cent. Although our campaign stands second to India in comparison but taking into account the population of the two countries and the time of commencement of the campaign, our achievement may be considered better than that of India. Thanks to our enlightened T. B. specialists, social workers and other members of the medical profession whose active co-operation and support has made BCG Vaccination popular and successful in Pakistan. The contribution of the personnel employed in the campaign is also equally commendable. Far away from their families and relatives the three hundred and twentyfive educated

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and trained BCG technicians and about thirty medical officers now engaged in BCG work pass their days mostly in the rural areas often in improvised camps. To attend their field of duty in isolated habitation in the desert, desolate tribes in the hilly tracts, and the remote villages of the low lying and riverine districts of East Pakistan they have to cross a big distance on bicycles, on country boats and frequently on foot in mud and in dust. They are an Army of Public Health Service in the real sence of the term.

Now the question arises as to what extent the BCG Campaign has helped us in our fight against tuberculosis. More specifically, how much the morbidity and mortality has been reduced? And what other benefit we have derived from this campaign? It is not possible at present to ascertain with certainty the extent to which morbidity and mortality of tuberculosis have been affected by BCG vaccination in our country. Reliable statistics of the pre BCG vaccination period are not available; nor we have any reliable data for the present. We shall have to depend for the time being on the circumstantial evidence available and draw our conclusions indirectly. BCG vaccination has been used for more than thirty years all over the world. But still its antagonists are eager and active to air their views. On the other hand reports and research papers claiming its definite protective value have piled up. Some of

the recent "BCG Control Trials" such as (i) Trials on North American Indians by Arensen and his colleague (ii) Trial in Adolescent Urban Population by British Medical Research Council and (iii) Trial in Puerto Rico and Southern part of USA, by the United States Public Health Service provide ample evidence that BCG vaccination even under adverse circumstances of poor economic condition and high incidence of TB can confer substantial and durable protection. It is generally agreed that successful BCG vaccination can give a degree of protection of the order of 80 percent which means that people eligible for vaccination five times as many cases of tuberculosis will be developed in the following year among non-vaccinated persons as will develop among the vaccinated. Much evidence is also available to show that the protection acquired by means of BCG Vaccination relates not only to manifestation of primary or childhood type of tuberculosis such as miliary tuberculous and tuberculous meningitis but also to reinfection or adult type of pulmonary tuberculosis. We can, therefore, reasonably conclude that a successful BCG vaccination protects susceptible population against the attack of the disease.

Now we have to see whether the BCG vaccination in Pakistan has been successful or not. There is no easily applicable test known to us to measure the immunity or resistance against tuber-

culosis of a BCG vaccinated person. But the experiment in guinea pigs reported by the U. S. Public Health Service shows that in groups of guinea pigs the degree of post vaccination tuberculin sensitivity is closely associated with the degree of acquired resistance. The higher the level of tuberculin allergy induced, the stronger is the resistance to a virulent challenge infection. We may, therefore, consider our BCG vaccination successful if the post vaccination tuberculin allergy is sufficiently strong. The degree of post vaccination tuberculin allergy depends on the potency of the vaccine, on the conditions of its transport and subsequent storage, on the technique of vaccination and also to some extent on the persons vaccinated.

To assess all these factors two specially trained BCG assessment teams, one in East Pakistan and another in West Pakistan, have been organized for more than two years. These two teams have been continuously assessing the mass campaign vaccinated groups of people according to the plan drawn up by the Director and Statistical Officer of the BCG campaign. The result of the assessment has been so far found encouraging. In East Pakistan a total of 86 mass campaign groups have been retested and the average post vaccination allergy in different groups have been found to vary from 9 to 15 mm. The average of post vaccination induration of all these 86 groups taken together comes to 11 mm

which is about 15 percent less than the naturally infected individuals of these 86 groups. In West Pakistan 105 mass campaign groups have been retested and the average post vaccination allergy has been found to vary from 8 to 16 mm with the exception of few groups which required revaccination later on. The average naturally induced allergy in West Pakistan groups is found to vary from 12-30 mm. The average of post vaccination induration of all the retested groups comes to 10 mm which is about 28 percent less than that of the naturally infected persons of these 102 groups. These findings of the assessment teams indicate that our vaccination campaign has induced a post vaccination allergy which may be taken as an index of successful vaccination.

Beside the achievements attained in the direction of the Tuberculosis control the benefits derived in the organisational and operational field also can not be overlooked and ignored. Before starting the campaign we had very few public health workers engaged in Tuberculosis control work. During the last ten years of this campaign more than 50 medical officers, 450 technicians, sanitary inspectors and nurses have been trained in the field operation. Now we have a team of workers who have been tried and who have got a rich experience of working in rural areas. In our future expanded

Tuberculosis control programme their services may be well utilised in case finding and domiciliary chemotherapy project. They will be also quite useful in our rural Health Centre Scheme.

One of the other important achievements of this campaign is 'Health Education'. BCG workers have made mass contact with the population everywhere in the country and aroused a Tuberculosis consciousness in the minds of the people through posters, pamphlets, public address system and personal contact. The message of Tuberculosis control measures has been taken to the heart of the illiterate and ill-informed population of the far flung areas of the country. Now the soil is to a great extent ready and any seed of further Tuberculosis control measure is likely to flourish better than before.

Before conclusion, it will not be out of place to mention here that a man attacked by active Tuberculosis not only brings prolonged anxieties and untold miseries to himself and to his family members by losing his wage earning capacity and at the same time demanding better and costly diet but also requires for his treatment a hospital bed which costs twenty thousand rupees for its establishment and four thousand rupees per year for its maintenance. Whereas to protect him from this fell disease by BCG Vaccination costs only ten annas to the National Exchequer.

MARRIAGE COUNSELLING

By

DR. M. A. HAI

Marriage as an institution embodies the highest aspiration of humanity. In simplest words it is the intimate most relationship between two persons of the opposite sex. It is the result of trial and error of centuries. It involves two personalities, in the broadest sense of the term,—physical, mental and emotional. It is a complex institution and has survived scores of storms, in the ever changing socio-economic structure of the society. Besides the environmental factors, marriage is much more than a mere sex-relationship and mechanical reproduction. It involves a series of responsibilities and obligations, that need constant adjustment and re-adjustment in every phase of life. It is in view of these complexities constant guidance and counselling becomes at least as essential, as legal advice and guidance in an average business undertaking.

What is counselling? Counselling means helping people to live successfully. It means giving aid to those who are trying to adjust themselves to their own world, in such a way that they may get a long with other people and be happy and useful citizens. Essentially it is holding a

mirror before the client, so that he can see himself, then helping him to interpret what he sees and finally getting him into action.

Counselling includes both those who are married and those who are about to be married. The problem presented may differ in nature and they may stem from a variety of factors. They may be due to diseases like T.B. Leprosy, Heart Diseases etc; disturbances of personalities of men and women and conflicts in their interpersonal emotional or physical relations or to the environmental factors which effect the stability of marriage.

In an important and a universal institution like marriage, too many things are taken for granted. Consequently marriage today is more a matter of accident than design. Marriage is the easiest thing to contract and the most difficult relation to develop and maintain. If the marriage is to work and fulfil the basic needs of the individuals concerned, mere attraction between the two persons of the opposite sex and reproduction is not enough. It needs understanding and assessing the two personalities,

equating the likes and dislikes, in terms of the changing socio-economic values and when once the life long contract is signed, to constantly adjust and re-adjust to a host of existing and creeping circumstances in the family living.

The facts conducive to the harmony in marriage, knowledge of sex relationship, postponing parenthood, and exploring mysteries of marriage, overcoming certain difficulties, planning for children; in short educating the couples to be, and also those who have already precipitated in marriage, all these provide a vast field for counselling.

Let me point out in passing that the idea of guidance and counselling both pre-marital and post-marital, so much talked out today in Europe and America, is neither new nor novel. Marriage customs prevalent till yesterday in our culture such as "Sanchaq" and "Mehndi" were meant for and calculated to family welfare. It is for us to recognize the the values of the customs. Modify and shape them in the newest frame-work of modern scientific lines of thought.

Marriage the socially accepted mechanism of establishing a family offers a complete fulfilment to the couple. It is to marriage we owe our existence and

expect to find a most lasting happiness. It is through marriage, we satisfy the natural longing for immortality by continuing to live in our children long after we ourselves are dead and gone. It should therefore be saved from all possible damage.

In the very much needed process of counselling to make married happiness possible, assessment of the two personalities concerned, equating their likes and dislikes. choice of the mate, when to marry, utilizing the betrothal or engagement to the maximum advantage, educating the couple to be regarding sex relationship, parenthood responsibilities and obligations etc. loom large in making the marriage a desirable partnership and the family with all the imaginable virtues magnify into a desirable and a balanced society.

In the present and complex structure of society, counselling and timely guidance has become a must. In the speedily modernizing cities and towns in our country if counsellors are available and if they are multiplied by a few thousand and if they are so equipped, that their services would be available gratis to anyone seeking help, they would still be unable to meet the demand of more than a very small fraction who needs help.

BENEVOLENT FUND

BY

DR. IQBAL AHMAD SIDDIKI,

M.B.B.S. (Pb).. T.D.D. (Pb).

THE subject entrusted to me is a very vast one as the medical profession at this moment is confronted with several problems which requires collective efforts for their solutions. The uppermost in my mind is the need of establishing some sort of Fund which could be a source of succour and relief to the members of the medical profession at the time of premature incapacitation or in old age.

Those days are gone when the doctors were handsomely paid and a few years earnings could secure a respectable living for the rest of the life. Now the struggle for existence has become pretty stiff. To become a doctor requires some 7 to 8 years of hard and expensive schooling. By the time one completes the course he is about 25 years or so and it takes an other couple of years before he can earn his livelihood. There was time when this profession was regarded the noblest profession and held in high esteem but now it is losing its charm and grace and is looked upon as a trade and so the doctor has stake in sickness. His job has become more exacting, I should

rather say disgusting in some instances. The adverse criticisms to which this profession is subjected makes one sometime really sick at heart. You, perhaps, remember that a correspondent, not very long ago remarked in a leading newspaper that 'Devil looked less terrible than the doctor when extracting his fee from his patients'. There is no denying the fact that most of the criticism has been the result of some misunderstanding and was not well founded but it is there and you cannot also denying its discouraging effects on the hard and free humanitarian service which the doctors render to the ailing humanity.

Without dwelling upon the ingratitude of the masses meted out to us, let us consider for a moment :—

What is a doctor and whether it is necessary to preserve his life and safeguard his interests ?

According to Percy Hall, the title doctor means a teacher and the doctor's supreme duty is to teach the people the real meaning of disease, its causes and preventions and its natural cure.

Stock Holms' views are :—

“The medical men are Ministers of Health and there can be little doubt that the help that they may give in diffusing knowledge of the Laws of Health will be more potent than all the Acts of the Parliament bearing on the subjects”.

Let us now pass on to the service he renders. The services which the doctors render to the ailing humanity are quite very well known but it is really a pity that the people under-estimate their values. Most of the people are under the impression that doctors are adequately paid for the services they render. Medical service is not a service that can be ever paid adequately. They utterly neglect the moral aspect and they also neglect the tremendous free service to the cause of public welfare for which they get no remuneration. In 1946, surveys were carried out in America and it was revealed that the value of unpaid services rendered to the indignant was well above 300 millions Dollars *i.e.*, 142 crores and 50 lacs of rupees. Recognition of this tremendous contribution by the physicians for the public good was reflected in an Act introduced in the Congress by a lady representative of Connecticut-named Claire Boothe Luce. The Act provided, that the Physicians, Surgeons and Dentists, commencing with the taxable year 1946, shall be allowed an additional credit as a deduction on their income tax equal in

terms of percentages to that portion of their time each year, which is devoted to charity, free clinic work and public research work. The Commissioner of International Revenue was authorised to prescribe by Regulation, the method for computing such time and the proof required for purposes of substantiation. When this bill was introduced, she got it inserted in the Congressional Record a statement embodying the justification for sponsoring this Legislation.

In connection with the many proposals made by various kinds of Governmental control of medicine she said,

“None of these proposals is a logical development of the American system of recognizing, promoting and rewarding individual choice and achievement. In our earlier history, the pioneer medi-cos were rewarded for their frequently ill-paid devotion by a very special places in the community, high respect from their fellow citizens and patients and payment in the lovingly prepared delicacies where cash was scarce. Those times have largely vanished. To become a physician, a surgeon, a dentist now requires some 8 or 9 years of un-remunerative and expensive schooling. Until he has completed all this usually by the time, he is 29 or 30, the doctor cannot even begin to earn his own bread and salt much less

begin to repay himself for the costs of learning his profession”.

After referring to the fact that all reputable physicians give a considerable portion of their time to the treatment of patients who are unable to pay for the services in any way except by gratitude, the statement continues :—

“Surveys as to the amount of these unpaid services indicate that the percentages range from around 30 to 45 of all treatments given. This is a direct contribution on the part of the Physician, Surgeon and Dentist to the public welfare.

In addition are the hours spent without pay in Public Research work, on Hospital Boards and Boards of Charitable Organisations. All this must be chalked up to professional devotion since it results in no return and often requires the practitioner to lengthen his working day to 15 to 16 hours or more in times of epidemic. There are, in fact, no limits possible on a doctor's working day”.

In view of the above, will anybody care to calculate the extent of free service which the doctors of this country are doing to the public cause ?

From the quotations which I have just read, two things stand out very prominently.

Firstly—The doctors as a class are contributing the biggest share in the public welfare.

Secondly—The Government should recognise their services and try to provide some relief and compensation.

It is really an irony of fate that in our country percentages of unpaid services range between 80 to 90. Nearly all types of people, from all shades of life avail of doctor's free services, but do not realise the necessity of keeping the doctor's interests in view as if the doctors do not possess a body, a mind and a soul. Besides being ill paid, the doctor is over worked in whatever capacity he might be working. If unfortunately an epidemic breaks out, he is expected to throw himself head-long in the blaze of any rather every infectious and contagious disease keeping behind his back a family which stands no chance of getting any State or social protection, in the event of the worker sacrificing his won life while fighting the scourge and saving the lives of his countrymen.

These were the ideas, agitating my mind, when I was putting in black and white, the scheme sponsored by the Medical Association of Lebanon, for the grant of Disability and Old-age pension which was subsequently converted into an Act by the Government for the benefit of the members of the Medical Profession in particular and the ailing humanity in general. An Urdu translation of the important portions of the Act can be had from the Hony. General Secretary, Pakistan Medical Association, Lahore and I need not go into its details. The principal object of the scheme is to ensure a living well worthy of the members

of medical profession even at the time of any calamity that may befall them. For instance, if any member becomes incapacitated to earn his livelihood at the age of 45, he is entitled for the grant of premature pension, the normal age for which is fixed at 65 years. In the case of his death, his dependants get his pension for about 5 years or so.

The sources of income that feed the Fund are many but the lion's share is collected through the sale of stamps of some insignificant denominations the value of which is prescribed by the Government. By the order of the Government, every qualified doctor is bound to affix these stamps on the prescriptions, laboratory and other test reports like X-Ray, E.C.G. and Electroencephalographs.

In this connection, I may, also point out, that the total area of Lebanon is only 4,300 Square Miles and the total population, according to Census Report of 1950 was 8 lacs and 43 thousands. Now the population would be in the proximity of 12 lacs. The exact per Capita income of that country could not be ascertained but the per capita income in respect of Pakistan Currency is Rs. 412.5 in Turkey, Rs. 280.5 in Iran and Rs. 280.5 in Iraq. As such the per Capita income in Lebanon cannot be more than Rs. 280, whereas in Pakistan the per capita income is Rs. 320 annually and the population of only Lahore is about 15 lacs.

It would be of particular interest to note that the entire credit of the Act goes to Dr. Khaury who is an eminent physician of the country. It so happened that some time past, he was entrusted with the duties of a Minister for Health. He was of the firm conviction that for the efficient discharge of his duties and responsibilities and for honest and selfless work, the doctor requires social security more than any other profession. Ensuring the future welfare of the doctor was considered to be the best measure for improving the standard of National Health and for maintaining the high traditions. Prestige and dignity of the profession.

Now, ladies and gentlemen, I find no reason why this scheme should not be pursued here and why it should not bear the desired fruits. There is every justification for its advocacy, and I think, it is the most opportune time for sponsoring this scheme. I, therefore, appeal to all the leaders of our medical profession whether present here or not, to give due consideration to it especially in the light of the facts I have presented. There is always a moment in the life of every man which decides upon his future, so let us catch this very moment by the forelock and make it a deciding factor. They say, mountains do not meet but to day it appears that the proverb has lost its glamour as I find many mountains of learning assembled her to help us devise means for our honourable living,

The first thing to be decided is : Do we need any scheme which could be a source of succour and relief to us and to our dependants at the time of our need especially in old age ? And the second, how to achieve this object ?

As far as the first question, I do not think any body could differ with me when I say, that we do require such an assets on which we could count at the time of distress, and as far as the second question is concerned. the opinions could be different and different schemes can be studied and discussed. But I feel that in view of the tremendous free work which we do for the welfare of the people, the Government should recognize its existance and compensate us by ensuring our future welfare. Since the Minister for Health at this moment is a medical man of established repute with a wide and creditable experience of administration and the profession has a claim upon him, the scheme should be submitted to the Government for close and sympathetic consideration along with the facts which I have just inunciated. Our duty should only be to impress upon him the justification and the need for such a scheme for

improving the National Health and for maintaining the nobility of the profession. I see no reason, why the Health Minister should not come to our rescue at this crucial moment and relieve us by dispelling the fears of gloomy old age. If Dr. Khoury can be instrumental in bringing about the above regulation in a country which has much more limited resources than ours, our Health Minister should achieve this object more easily and in a more befitting manner, since our country is much bigger. The total population of our country runs into more than 8 crores and per capita income in Pakistan is Rs. 320 as compared to that of Lebenon which is only Rs. 280.5.

Since it is our just and genuine demand, we should not fight shy of preferring this elaim and we should count upon his active help. He has much more resources than the Pakistan Medical Association. He can mobilize all medical men. He can also avail of the services of the talented economists for formulating an elaborate scheme for the future good of the humanity and the medical profession.

Before I conclude I heartily thank you all for the patient hearing.

Reform Commission by the All-Pakistan Medical Association Karachi. Obviously this pace is not at all commendable and can-not be said to produce an army of specialists so very essential for manning our health services. Next in order of merit comes a medical graduate. Inspite of the fact that for the acquisition of the degree in Agriculture, Engineering, Veterinary and other allied sciences, a candidate has to undergo a course of study of 4 to 5 years after Matriculation, the Medical graduate has to go through a 7 year's course of instruction, (2 years for pre-medical and 5 years for medical studies). Ever since the publication of the report of the Health Survey and Development Committee commonly known as the Bhore Committee in 1946, the medical graduate is considered to be a 'Basic Doctor'.

In order to understand the implications of having only one type of medical qualification, let us for a moment think over the huge expenditure and wastage in respect of human energy, money and time for producing this type of 'Basic Doctor' before dealing with the extent and the quality of service that he would render to the ailing humanity, keeping in view that the average life expectancy of Pakistani is admitted at all hands to be round about 27 years.

Average Time Spent for Securing M.B.B.S. Degree :—

Counting from the date of birth, the child generally goes to school at the age of 5 years and takes on an average 12 years to pass the Matriculation Examination. Average period spent in the Intermediate Class (medical group) is in no way less than 3 years and the average time consumed at a Medical College is worked out to be about 7 years. Thus it takes about 27 years in all to become a doctor of this standard. To confirm this, one has to cast only a cursery glance at the following three tabulated statements which are the result of the close and analytical study of Mian Afzal Hussain, a well known, Educationist of wide experience and international fame, formerly Vice-Chancellor of the Panjab University :—

Year of Matric Examination.	No. of students admitted in first year class.	No. Left studies.	Division in Matric Examination	No. promoted in II year.	No. Left. studies before Exam.	No. actually appeared in F.Sc. Examination.	No. of successful.	Percentage of success.	Division secured in F.Sc Examination.			Compartment.	Failure.	Percentage of failure.
									I	II	III			
1949	163	42	... I II III	121	28	93	33	37	...	...	...	...	...	...
						20	13	65	6	2	5	2	35	25
						51	14	27	...	...	2	2	16	60
						22	6	27	...	...	...	...	67	
						20	5	25	...	...	2	13	65	
Failures re-appeared														
1950	143	29	I II III	114 37 57 20	28 4 15 2	86	28	32	...	...	...	...	...	...
						37	17	51	1	...	...	...	...	...
						42	9	21	...	...	...	...	...	...
						11	2	18	...	...	...	...	...	...
						41	14	34	...	...	...	...	...	...
Failures re-appeared														

Faculty of Science (Medical Group 1952)

January, 1961														
1950	143	29	I II III	114 37 57 20	28 4 15 2	86	28	32	...	...	...	...	...	...
						37	17	51	1	...	...	...	...	...
						42	9	21	...	...	...	...	...	...
						11	2	18	...	...	...	...	...	...
						41	14	34	...	...	...	...	...	...
Failures re-appeared														

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Faculty of Science (Medical Group 1952)

Even a cursory glance over the above table will show that out of 306 matriculates admitted in Arts College only 11 candidates secured the first division and 22 were placed in the II Division. Out of this number, not more than 15 could have secured admission to the M.B.B.S. Course. This means that out of every 306 matriculate only 15 get a chance of studying medicine and for selecting 100 candidates for admission to the M.B.B.S. Class, we require not less than 2000 Matriculates. In other words, the money and effort spent on 1900 candidates go waste. What a tremendous wastage of time, money and labour at this preliminary stage! Can it be said that the students of our country are less intelligent than those of other countries? Decidedly not! The fault lies some-where else. It is not the end of the sad story.

Let us proceed further and take into consideration an other table in respect of the Professional Education at our medical colleges. The number of failures at this stage is also not found any-where in the world and the loss to the State and the candidates is also colossal.

The per Capita income in Pakistan is only Rs. 320 and it is really a pity that we have never cared to cut down this huge loss, though in our hearts we might be feeling its pangs quite bitterly.

Table No. II

5 years percentage of Failures in M.B.B.S. Examination.

M.B.B.S. Examinations	1948	1949	1950	1951	1952	Average.
Professional M.B.B.S. I ...	40.0	45.3	36.9	50.0	39.1	42
Ditto II ...	27.1	31.6	51.5	54.3	30.5	39
Ditto III ...	26.4	28.2	23.8	24.9	21.6	25
Ditto IV ...	36.0	38.5	49.2	65.0	62.9	

In view of the above table it appears that if 100 students appeared in the 1st Professional Examination, then out of these only 13 will be able to complete the course in the minimum period as calculated in the table given below :—

Table No. III.

Examination	No. of examinees	Percentages of failures	No. of survivors
1st Professional M.B.B.S.	100	42	58
II Ditto	58	39	35
III Ditto	35	25	26
IV Ditto	26	50	13

Extent of Service Expected :—

In view of the above mentioned bare facts, it should be crystal clear that it is not any easy task to produce 'basic doctors' as recommended by some of our medical men in our present set up, and that the average period required to nurture a child into a 'basic doctor' can, by no stretch of imaginations be less than 27 years. Apart from the fact that the average expectancy of age in Pakistan is as low as 27 years, the available statistics all over the world show that the medical men, being particularly prone to Atherosclerosis and Diabetes, as compared to persons following other professions, have still lower expectancy of life, with the result that there is over all reduction in the capacity of the work. Thus the potential contribution towards public service is further lowered.

OTHER COUNTRIES :—

Now a natural question arises whether such ideologies are also found in any of the other countries of the world. A dispassionate study in this respect reveals that no-where such a deplorable state of extravagance exists. There were two types of doctors in nearly most of the countries such as we have licentiates and graduates. To the best of my knowledge and belief, in Japan and Russia, there are still two types of doctors. In U. K., the abolition of the licentiate class was thought advisable only after the publication of the report of the Good enough Committee at a

time when the State of health of the Nation in that country was quite satisfactory as depicted in the following table.

Table No. IV

		Undivided India.	U.K.
1. Birth rate per 1000	...	31.1	15.5
2. Maternal mortality per 1000	...	9	1.
3. Infant mortality per 1000 (under 1 year)		250.	72.
4. Number living upto age of 10 in 1000		560.	890.
5. Number living upto age of 15 in 1000		544.	833.
6. Number living upto age of 50 in 1000		240.	747.
7. Number living upto age of 75 in 1000		40	296.
8. General expectation of life at birth		27 years	62 years.

Nobody that matters seems to realise that while proposing the abolition of the Licentiate teaching in U. K., the Good-enough Committee had clearly described this measure as the final stage of an evolutionary development, and we cannot claim to have reached that advanced stage which could be called final necessitating winding up this course for good. On the contrary, neither in medical sphere, nor in the more fundamental sphere of economics, social and political organization, can Pakistan claim to have attained such a state of development that the Good-enough Committee had claimed for England. As a matter of fact, from the point of view of medical development, Pakistan can only be said to stand where England stood 130-years ago or the U.S.A. 75 years ago and Russia in 1917.

In Russia, as I have already said there are still two categories of doctors and a similar situation arose some years ago. The Government of that country had also very nearly ordered the abolition of this type of training known as the Feldsher but before final orders were given, a systematic and scientific examination of the demand was ordered. It was found that grave injury to public Health and medical relief would result by the abolition of this class. Consequently orders were issued to increase the number of Feldshers Medical Schools, with the result that the number of these schools which were only 65 in 1915 were increased to 985 in 1941.

The contemplated 'basic doctors' training is about the same as that of a medical graduate in Russia. There is no denying the fact that medical graduates are also found there and that in 20 years, that country had raised their number from

19,000 to nearly 1,40,000, but for each such doctor there is simultaneous increase of 3.6 Feldshers, and it is, therefore, that more than 48,000 dispensaries were under the independent charge of these feldshers, at the time of publication of the Bhore Committee Report in 1946.

Six Years' Investigation in Bhopal State :—

In this connection, I would like to make a particular mention of a statistical study which was carried out in Bhopal State some time ago and which was spread over six years. The result of the study as published in the Bhore Committee's report revealed that 83 per cent of the total ailments were amenable to simple treatment if given in time, that 13 per cent needed hospitalization and that 4 per cent required specialized treatment. With the discovery of the life saving antibiotics, the number that could be tackled outside hospitals must be well above 90 per cent. This investigation alone suggests a wide range of usefulness for a short course of medical studies like licentiates, which must make opposition to their continuation and employment a pure exhibition of prejudice.

Incidence of Disease in Punjab :—

The following table also lends sufficient support to the above contention :—

Table No. V

Vital statistics of Punjab (with a total population of 1,88,25,015)

Year.	Total numbers of deaths.	Infantile deaths.	Deaths caused by Tuberculosis.	Death caused by Tuberculosis				Deaths caused by Diarrhoea and Dysentery.
				T. B. lungs	T. B. Bones & Joints	Other Forms	All forms	
1949	3,26,307	81,506	11,324	3,275	113	2,044	5,432	4,198
1950	3,69,411	95,323	15,932	3,654	382	2,200	6,236	2,894
1951	3,20,437	76,955	8,455	4,742	267	1,859	6,868	5,161

Study any country, you like and you will see that in every country there are phases in the programmes of development demanding varying emphasis on the quantitative and qualitative aspects of achievements at different times, and under different conditions and the decisions of bodies like the Health Survey and Development Committees have often been taken not so much on facts garnered or their evaluation but on ideologies which dominate the minds of the members.

Realistic Approach :—

As a matter of principle, the courses of medical studies should be considered as closely from the point of view of our economics as from our specific needs. We should not at the same time forget that it is not possible to impart the entire medical knowledge, during the short course at our disposal for medical studies.

As Dr. Abraham Flexner had put it :—

“The medical curriculum cannot aim to produce physicians ready for practice. It can at best so train the students that practical experience in the first instance as intern will in time mature and equip them.”

It was, therefore, quite natural to find that six eminent members of the Bhoré Committee made a special mention that they did not regard the licentiates as an ‘imperfectly’ or ‘hastily manufactured’ doctors, as they had rendered meritorious services in the past. During the course of their discussions, several distinguished medical officers had expressed the opinion that by suitable modification in the curriculum, an effective medical training can be given in 3-1/2 years including a six month’s internship. Thus it can be safely asserted that the licentiate is quite competent with a small orientation course to do justice to a great range of requirements of our rural population which form 85 per cent of the total man power of our country. The curative, community and preventive aspects of medicines are merely the applied aspects of fundamental sciences which are to a substantial extent integral parts of the old curricula of the licentiate teaching.

As for the argument that this sort of medical training will adversely affect our National Health. In this connection, I may submit that if there had been any force in the argument or the prognostications, Russia—the foremost exponent of the utility of

the two grades of medical personnel should have been ruined from a health point of view. On the contrary, its perfection of public health and medical services working for the urban and rural population and the Army have been the envy of the whole world. She had raised the numbers of medical colleges which were eleven in the Tzarists regime to seventy two, and medical schools from sixty five to nine hundred and eighty five.

Doctor—Patient Relationship :—

An other very important fact to which I would like to draw the attention of the readers is that sociology and economics often determine the patient-doctor relationship. Under the present day living conditions, the place of the Licentiates will be taken up by all sorts of quacks and Hakim etc. as the basic doctor will not willingly fit into the rural scheme except under conditions of duress and destitutions.

Conclusions :—

From the above submission it should be abundantly clear that it is possible to produce a sufficiently trained medical man within a period of four years after having passed the matriculation examination and that he can be safely trusted to treat not less than 83 per cent of the ailments generally affecting our population, the rural population deriving the maximum benefit at considerably low costs. The other fact which had lent support to my this belief is that in Harward University, the total calculated number of hours of study is only 4,000 hours and in Russia, 5,760 hours for completing the medical course as against 4,546 hours in K. E. Medical College and 4,158 hours in Andhara Medical College (Bhore Committee). Taking 206 working day each year and working for 7 hours a day, we have about 5,048 hours at our disposal for imparting medical education. Judicious allocation of time for different subjects if done according to foreign universities will not only inflict the least strain over the minds of our students but will also cut down the unnecessary details in the study of pre-medical and pre-clinical subjects. As for example, only 980 hours out of 4,000 hours are spent on Anatomy in Harward University and only 438 hours out of 5,760 in Russia, whereas in our country as many as 1,274 hours out of 4,546 hours were taken in K. E. Medical college and as many as 1,124 hours out of 4,158 were spent in Andhara (Bharat) as reported by Sir Joseph Bhore.

Suggestions :—

Similarly during the study of clinical subjects, there is a growing tendency to impart specialized knowledge in various subjects, both major and minor, to medical

students. Such knowledge which the student will have no opportunity to put in practice, should be eliminated altogether. He should be generally acquainted with the various aspects of clinical subjects and should have knowledge of their basic principles but he should not be burdened with absolute theories and intricacies of the technique of operations, elaborate laboratory methods and working of special diagnostic processes and appliances. Unnecessary time and energy should also not be wasted in giving him knowledge, of diseases he would rarely see in the country. He should be trained to be self-reliant in his practice, to use his eyes and ears, well develop his sense of observation and his clinical acumen. He should be trained to bear on his own sense of observation, diagnosis and treatment, besides the psychology of his patient, his environment and habits and look to the body and mind as a whole while discharging his arduous duties towards the ailing humanity. Working on the above lines, there is every hope of saving at least three years of the precious life of our medical men, the value of which will be in-estimable in view of the low expectancy of our life.

The existing curricula of both the courses, degree as well as licentiates should be drastically changed. The selection of candidates for medical career should be carried out after the matriculation examination, so that the huge wastage of money, labour and time of the candidates encountered during the Intermediate courses could be avoided and that can be safely done by raising the standard of Matriculation Examination. The pre-medical education should be then imparted in professional colleges. Teaching of subjects included in the Intermediate Examination in its present form should be done away with and replaced with a new syllabus. Biology course should be drastically cut. In so far as the Botany is concerned, the students should be acquainted with elements of plant physiology and classification of fungi and as for the Zoology, a brief course of principles of evolution and some details about the mammalian anatomy are needed. The courses of Physics and Chemistry can also be materially cut down, on lines similar to those found in U. K. and other countries where special books are followed for imparting only that much knowledge of the subject which is absolutely necessary for understanding the physiology of special

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senses in man. In the case of chemistry, some important Inorganic and organic compounds of medical interest, should only be taught with special reference to the chemistry of the life saving drugs. Side by side these premedical courses, useful instructions in English literature, Sociology and Psychology can also be given. In the case of Anatomy and Physiology, the teaching can be confined to mostly principles supplemented by Cadaveric and living anatomy by demonstrating cases of medical and surgical interests. Special emphasis should be laid on the applied aspect of both these subjects.

What the ideal teaching must and can do is to create an environment in which the student can learn for himself. Study should be intergrated by bringing together all branches of medical science in each topic under consideration so that the logic of medicine grows naturally out what the student is working on. The student thus can learn not only how to learn, but how to keep alive his curiosity and his pleasure in learning. It will be only then that his clinical training will rest on a sound foundation of basic medical sciences and he will be sufficiently equipped to respond to new ideas and new knowledge all his life.

The examination of both the courses of licentiates and graduates should be conducted by the Universities but the word licentiate should be totally abolished. At the end of 4 years a qualifying examination should be held and after a further period of six months internship, the candidates should be awarded a medical degree. The status of such a doctors should be considered at par with the graduates of Engineering, Agriculture and Animal Husbandary who spend an equal and comparable course of instructions for 4 to 5 years after matriculation. They should be, however, eligible to sit for higher examination after a period of two years, which should be designated as M.S. and M.D. etc. The old M.S. and M.D. should be regarded to have passed the Ph.D. examination. Old M.B.B.S. should be treated at par with the new M.S's and M.D's. Old M.B.B.S. or the new M.S. or M.D's will thus be eligible to go abroad for higher studies. Their scale of pay in Government service should be equal to M.A's and M.Sc. in Governments Service. The disparity in pay scales will vanish. As such a measure also provides equal and ample opportunity for the old licentiates and the new medical graduates for taking higher academic examination, the cruel slogan that "once Licentiate always Licentiate" will also disappear and there will be no fissi-parous tendencies.

Above all we will be able to provide maximum relief to the greater portion of our population at a lower cost and within a shorter period without much affecting the reasonable efficiency in the medical services.

ORGANIZATION AND FUNCTION OF PUNJAB NURSING COUNCIL*

BY

MRS. DARRAH,

Registrar, Punjab Nursing Council, Lahore.

I AM to enlighten the respected members on the organisation and function of the Punjab Nursing Council and how these are carried out.

The functions involved can be listed as :—

I. (i) CORRESPONDENCE

To receive and reply to all the correspondence in connection with :

- (a) Applications from candidates for Registration.
- (b) Registration of additional qualifications,
- (c) Admission to the Council's examinations.
- (d) Requests for recognition of Training Schools.
- (e) Miscellaneous information with regard to the candidate's eligibility for admission to the Schools and their requirements.
- (f) Concessions to demobilised Nursing personnels and otherwise experienced personnels.

(g) To deal with all correspondence in respect of registration of foreign trained personnels.

(h) To deal with correspondence with the Government with regard to rules and by-laws framed by the Council.

(i) To deal with all correspondence on Nursing questions with The Director General of Health, Government of Pakistan, The D. G. M. Services, Rawalpindi, The Director Health Services, West Pakistan, The Director, Health Services, East Pakistan, All Nursing Councils or Bodies, The Ministry of Health, Government of Pakistan, etc., etc.

II. EXAMINATIONS

To make all arrangements for the examinations of :

Nurses. Preliminary and Final in
March, October each year.

Midwives. " " " "

Nurse-Dais " " " "

Paper read at the Maternal and Child Health Seminar held in Lahore in March, 1959.

January, 1961

Community Health Visitors—

(a) Section II Midwifery, June—Oct.
each year.

(b) Section III Final. February—July
each year.

Scrutinise all applications for examinations which entails checking of Educational certificates, dates, period of training put in, number of lectures attended to etc. Receive fees and issue receipts, allot Roll Numbers and issue cards of admission, enter the name and particulars of each candidate in respective registers. Arrange for Oral Centres of Examination at three centres Lahore, Multan and Rawalpindi.

Receive and arrange for the translation and printing of the question papers. Appoint Examiners. Receive and enter marks allotted in each subject and grade the results in respective registers and print and circulate results of each examination.

III, REGISTRATION

To maintain registers in respect of the following six categories and issue certificates of registration as also for additional post graduate qualifications.

- (i) Nurses.
- (ii) Midwives.
- (iii) Nurse Dais.
- (iv) Community Health Visitors.
- (v) Trained Dais.

Now something concerning the procedure for the registration of Community Health Visitors and trained dais.

Each Community Health Visitors after qualifying is required to fill in a request for registration form which is supplied by the Council office on a request. The details of training with dates and the date of passing the examination are filled in this form and the details so entered are duly attested by the Incharge of the Institution where the candidate was trained and taken the examination. On receipt of this application and fee of registration the particulars given in the application are compared with the entries in the examination registers of the Council and if the entries are found correct then the name of the candidate is entered in registers. Each Community Health Visitor is issued one Diploma certificate which is signed by the Registrar and the President of the Council. One Registration as Community Health Visitor and one Registration as Midwife in addition to a receipt for the amount paid which are issued with the signature of the Registrar.

The registration of Dais is of different type and is done in a separate manner.

The examinations of Dais is conducted by Assistant Inspectresses of Health Centre in Cooperation with the District Health Officer, Lady Doctors and the concerned Health Visitors and the results are supplied to the Council. When dais qualify their examinations either the

Assistant Inspectresses of the Division or the Health Visitor send the fees to the Registrar by Money order and give the names of dates and their qualifying particulars in a letter. Sometime the information is given in the Money order coupon also.

The information so supplied is compared with the entries in the result sheets and then the certificates are prepared after making entry in the diploma and registration registers of Dais, and the certificates are despatched to the respective addresses. The Dais are issued a Diploma certificate and a registration certificate.

IV. AFFILIATION

To make arrangements for the inspection of hospitals, before affiliation, by the Inspectresses of hospitals of the Council with a view to seeing the suitability of the institution for being recognised for the training of the particular category of Nursing for which the institution has applied to be affiliated. To lay the recommendations of the inspectress to the Executive Committee and then to the General Committee and then convey the decision to the concerned hospital.

To realise the annual affiliation fee from each affiliated hospital. This fee is levied at the rate of Rs. 1-8-0 per bed per year and is to cover the expenses incurred on the inspection of each hospital for the first inspection carried out and then the subsequent inspections which are to be done once in every three years.

V. ACCOUNTS

To keep accounts and maintain the registers for the same :

- (1) Cash Book.
- (2) Provident Fund Register.
- (3) Establishment check register.
- (4) Demand and Collection Register.
- (5) Despatch Register.
- (6) Imprest Account Register.
- (7) Stationery Register.
- (8) Stock Register.
- (9) Stamp Register.
- (10) Revenue Stamp Register.
- (11) Property Register.

To receive payments in each, by Money order or by Cheques in respect of fees for :

- (a) The Registration of Nurses, Midwives, Post graduate course, Nurse-Dais, Community Health Visitors and trained Dais.
- (b) The affiliation fee of various institutions recognised as training schools.
- (c) Miscellaneous sale of Books and pamphlets and credit the amount to the Councils.

To prepare the annual statement of Income and expenditure and the budget estimates for the year and regularise the

excesses in expenditure under different heads.

VI. MISCELLANEOUS

To deal with all the work relating to the monthly meetings of the Executive Committee of the Council and the Bi-annual General meeting of the Council.

To prepare annual lists of persons registered in various categories during the year.

To get in touch once in every three

years with all registered Nurses, Health Visitors and Midwives.

To carry out all work in connection with the periodical election of registered persons as members to represent Nurses, Health Visitors and Midwives on the Council.

VII. RECORD

To file and maintain a file index of all the correspondence done.

ABSTRACT

Initiation of Lactation in Rats by Electrical Stimulation of Nervous System

By

M. MAQSOOD & J. MEITES

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GROUPS of virgin female rats were injected with 10 ug/day estradiol for 10 days to produce mammary development and then for the next 5 days, the rats were electrically stimulated for 30 seconds/twice daily in the regions of skull, nasal mucosa, lumber and teats respectively. All the rats were weighed and killed on the 6th day of the 2nd treatment period. The ovaries, uterus, adrenals and thymus gland were removed and weighed. The mammary glands from all the rats were examined histologically to grade for mammary development and initiation of lactation.

All the rats which were stimulated in the regions of skull, nasal mucosa and lumber showed varying degrees of mammary development and initiation. In the case of teat stimulation, 80 per cent of

the rats showed varying degrees of maintenance of mammary development and initiation of lactation. The mammary glands of the estrogen-primed rats regressed to practically a bare duct system and there was no sign of maintenance of mammary development or initiation of lactation, 5 days after the termination of estrogen treatment. The data on the weights of the uterus, ovaries, adrenals and thymus of the experimental rats did not differ significantly when compared with the control group. The available evidence suggests that electrical stimulation of certain parts of the nervous system causes the release of prolactin and ACTH through hypothalamic pathways and these in turn maintain mammary development and initiate lactation in the estrogen-primed female rats.

*Visiting Research Scientist from Pakistan.

ABSTRACT

In Vitro I^{131} Uptake by Salivary Glands, Stomach and Placenta

By

M. MAQSOOD¹, & E. P. REINEKE,

Department of Physiology,

Michigan State University. East Lansing, U.S.A.

In vitro I^{131} uptake by salivary glands, *i.e.* submaxillary, parotid and sublingual; different regions of stomach, *i.e.*, cardiac, fundic and pyloric; placentae, *i.e.*, foetal and maternal; duodenum and liver of rat was studied and the effects of thiouracil, KSCN, NaCN, Iodide and TSH on I^{131} uptake by these tissues were also investigated.

The T/M value for I^{131} uptake by the parotid gland was significantly higher when compared with that of the submaxillary or sublingual glands. Slices from fundic region of the stomach showed significantly higher T/M value for I^{131} uptake when compared with slices from the pyloric or cardiac region. The difference between I^{131} uptake by slices of liver showed very low I^{131} uptake and the values for the fresh and boiled tissues were practically the same. Addition of thiouracil (0.02 Mg/ml) to the medium, resulted in a decrease in the I^{131} uptake by salivary glands and slices from different regions of stomach but it had no

effect on I^{131} uptake by placenta or liver: KSCN and NaCN also caused a decrease in I^{131} uptake by salivary glands and stomach but not in the case of placenta or liver. Addition of TSH (50 to 200 Mg/ml) to the medium containing tissue slice did not show any effect on I^{131} uptake by these tissues:

Addition of large doses of penicillin to the medium resulted in a decrease in the T/M value for I^{131} uptake by salivary glands and stomach slices. The data on the T/M values for I^{131} uptake by salivary glands and stomach of mouse, dog and cow was similar to that of rat except the difference between parotid and submaxillary glands was not so marked as in the case of rat. I^{131} uptake by placenta of mouse was similar to that of rat. In general, the data indicate that Iodide transport mechanism in the salivary glands and stomach, but not in liver or placenta, appears to be similar to that of thyroid gland.

¹ Visiting Research Scientist from Pakistan.

ABSTRACT

In Vitro I^{131} Uptake by tissues of Rainbow Trout

By

Professor M. MAQSOOD¹, E. P. REINEKE & P. O. FROMM

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THE data on the T/M values for *in vitro* I^{131} uptake by different tissues of rainbow trout incubated at 13°C showed that only thyroid follicles present in the lower jaw concentrated I^{131} . The T/M value was higher in the case of posterior part of lower jaw than the anterior one, indicating that the thyroid follicles are comparatively more numerous in the posterior part. I^{131} uptake was higher in the lower part of the gill than the upper part and this may be due to the presence of some thyroid

follicles at the base of the gills where they are attached to the lower jaw. Addition of thiouracil (0.02 mg/ml) to the medium did not affect I^{131} uptake by thyroid follicles whereas KSCN blocked I^{131} uptake by thyroid follicles. The T/M values for I^{131} uptake by different organs of digestive system, kidney, head kidney, liver, spleen, heart muscle, skeletal muscle or brain were less than 1.0, indicating that these organs do not appear to be connected with iodide concentration mechanism.

Radio-isotopes are Helping Millions who never heard of them

BY

STEPHAN E. SCHATTMANN,

A London Author, Journalists and Broadcaster

TEN years ago the Sixth International Congress of Radiology was held in London. It was accompanied by a fascinating exhibition of instruments and products, but there was one exhibit which stood alone. This was the radio-isotope carbon-14, produced by the United Kingdom Atomic Energy Research Establishment at Harwell, Berkshire, which it was stated would now be available to laboratories. Since then, radio isotopes have been rapidly invading not only the laboratory, but also the hospital and the factory. They even appear in Britain's foreign trade statistics.

Most people have learned a little about the structure of matter and know that everything is made up of atoms of about 90 different kinds of material called elements, either singly or in combination. Most of these elements exist in several atomic forms, differing very slightly in their physical properties. These different forms are called isotopes of an element. A few of the heaviest are naturally radioactive,

for example uranium, radium and thorium. Many others, like carbon, iodine and gold, can be made radioactive artificially. These are called radio-isotopes.

MANY USES IN INDUSTRY

Radio-isotopes are used as tracers, which means that by acting as a sort of radio station they will broadcast their presence as they pass into human blood, for instance, or into the tissues of a plant. The tracer can enter the very molecules and traced the chemical processes by which they are built up. Even the men who protect the coasts against erosion by the sea make use of radioactive tracers. Pebbles treated with a radio-isotope were placed some time ago in the sea at low tide on the south coast of England. They were easily located afterwards by their radioactivity. Their movements revealed how winds, waves and tidal currents affected coastal erosion in the area. Other radio-isotopes serve not as tracers, but as sources of radiation for medical applications.

In industry radio-isotopes are being applied to an ever-widening range of jobs. Packages are automatically checked by radio-isotope package monitors. Radio-isotope gauges test the thickness of paper, or of the tin plating of steel sheets with far great accuracy than is possible by other methods. Engineering components such as castings, forgings and welds of pressure vessels, are inspected by isotope radiography. The equipment is simpler, cheaper and more portable than X-ray machines. Water mains are tested for leaks; the efficiency of detergents is checked in laundries using radio-isotope tracers; steam is measured in generating stations; the fermentation process is studied in breweries; nylon and woollen textiles are examined and these are just a few instances of the industrial uses of radio-isotopes.

SAVING MEASURED IN MILLIONS

Two years ago, the United Kingdom Atomic Energy Authority undertook an inquiry to estimate the saving to industry that the use of radio-isotopes was making in Britain. The only saving to be considered were those arising from the reduced consumption of materials and labour, and from greater efficiency and higher quality in production. The direct cash saving estimated by the firms taking part in the survey amounted to £3,500,000, a small but significant figure. Potential economies to be achieved by a still wider adoption of tried and accepted technique have been estimated at more than

£14,000,000 a year, a figure which undoubtedly understates what could eventually be done. Dr. J. L. Putman, of the Isotope Research Division of the United Kingdom Atomic Energy Research Establishment, recently forecast that in about ten years the annual saving will have risen to £70,000,000.

STILL MORE BENEFITS

In the United States of America, economies made by industry through the application of radio-isotopes were said to be £143,000,000 in 1956, a figure which includes £64,000,000 for "oil well stimulation." Bearing in mind the rather limited character of the British survey the figure of £3,500,000 might perhaps be doubled for proper comparison with the United States where methods of estimating were on a broader scale. It can then be seen that savings in the United Kingdom and the United States correspond fairly closely to the amount spent on radio-isotopes in the two countries. For during the period covered by the survey British industry spent £100,000 and United States companies bought radio-isotopes worth almost £1,000,000 in 1956.

It is only fair to add that the value of the manufacturing industries' annual output in the United States is nearly four times that of Britain. This is another way of saying that some sections of British industry have not yet taken full advantage of the benefits of applying radio-isotopes in their plants.

BRITAIN'S RADIO-ISOTOPES CENTRE

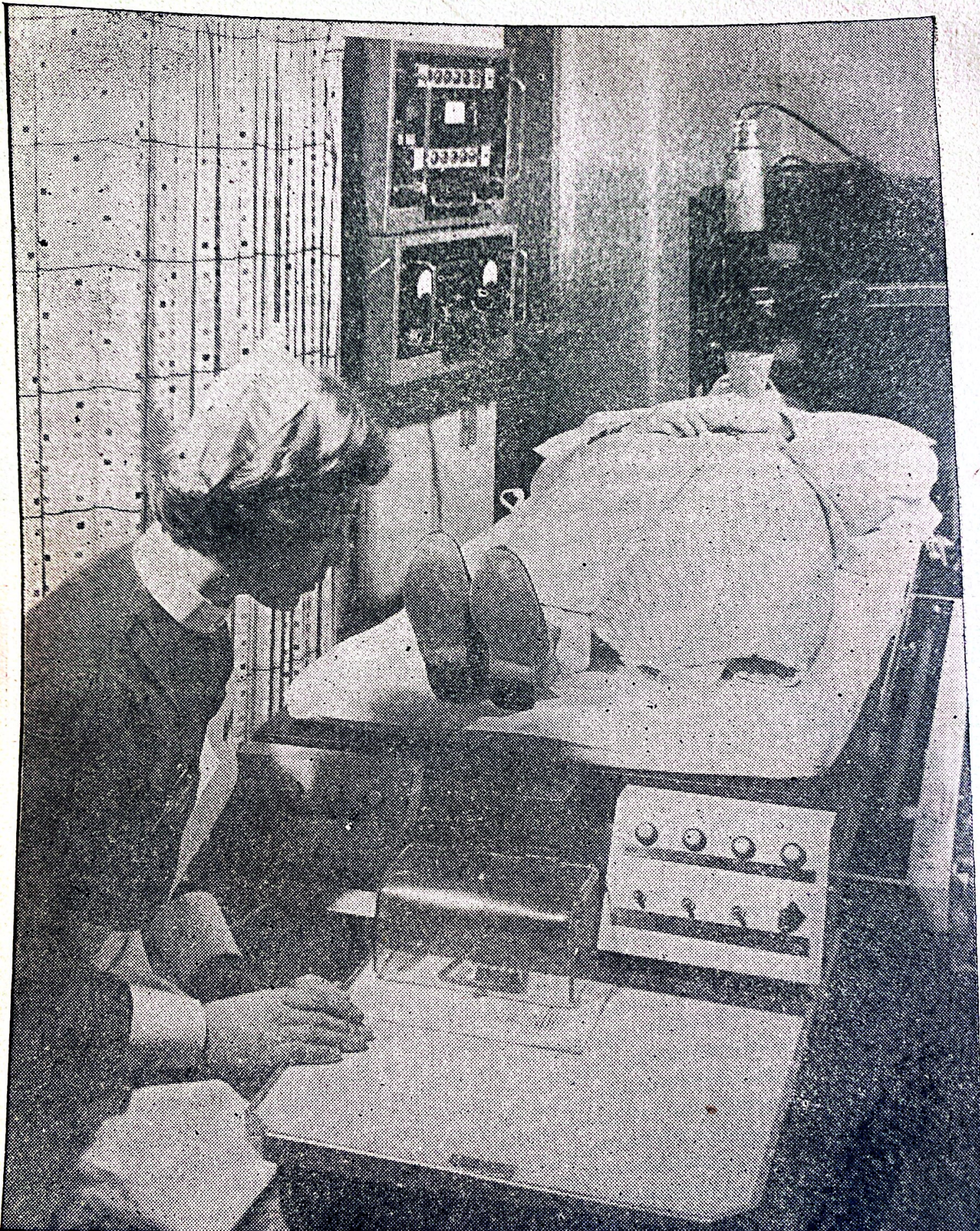
The material from which most radio-isotopes are derived comes from the Atomic Energy Authority's Research reactors at Harwell, and the reactors of the nuclear power stations at Calder Hall in Cumberland and Chapelcross in Dumfriesshire, Scotland. The actual processing and dispensing for practical application is carried out by the Radio-chemical Centre at Amersham in Buckinghamshire, the only one in the world in which both natural and synthetic isotopes are processed. Its products number about 900 items.

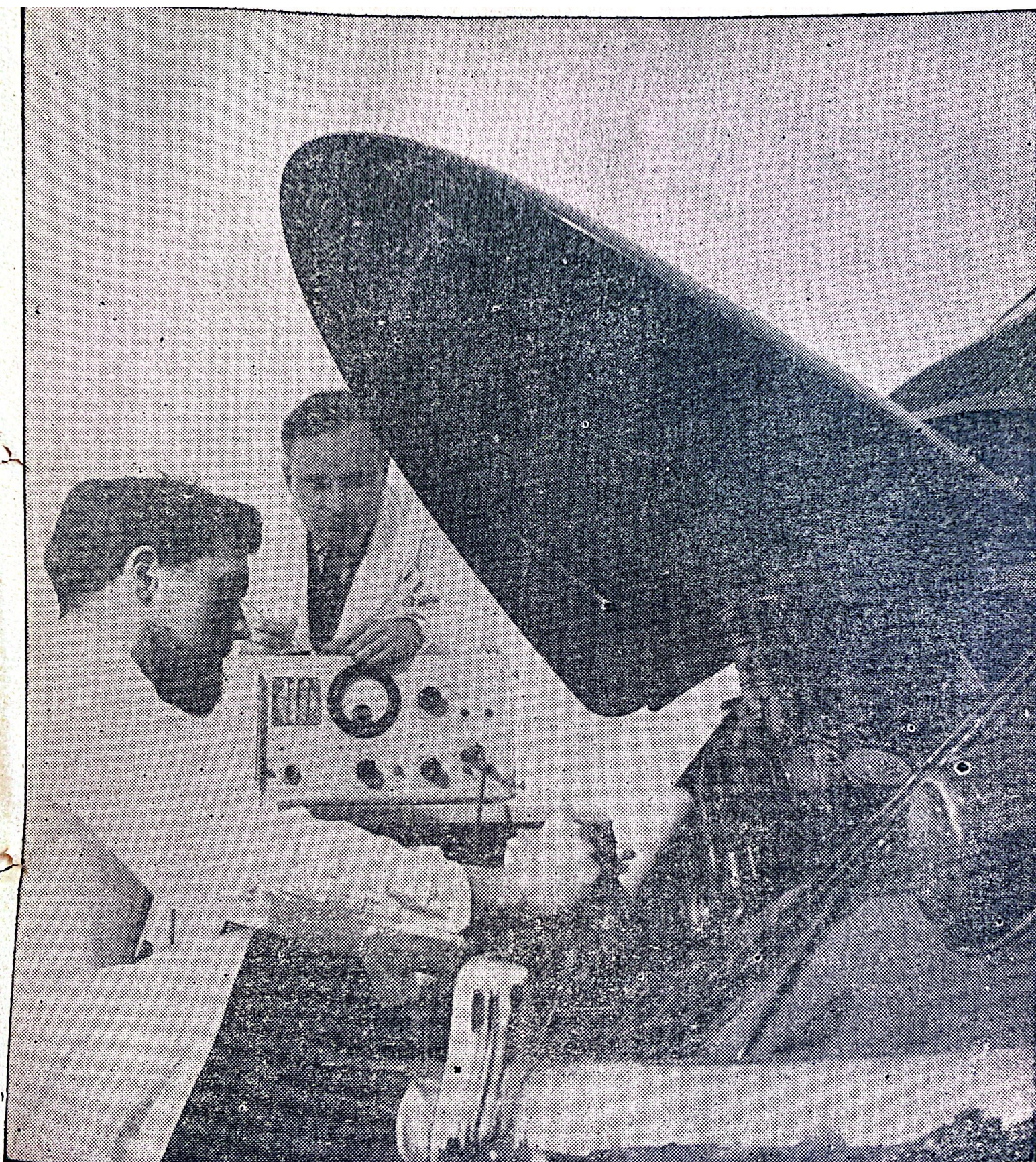
The Centre, which is run on commercial lines, was reorganised in March 1959. During the year that followed it sold radio-isotopes for civil purposes worth £1,100,000, 25 per cent. more than in the preceding year. Of the 35,000 deliveries

made, medical users took half, 15 per cent. (about a quarter of the total sales value) went to industry, and the balance was used by various research establishments.

Sixty per cent. of all sales were for export, and the principal markets among the 60 countries which received, shipments were France, Western Germany, the United States, Canada, Japan and Sweden. The value of shipments to the United States has doubled during the last three years.

Efforts to extend the range of radio-isotopes are proceeding, and it may be that for greater benefits will be derived in the next ten years from radio-isotopes than from the costly nuclear power stations. Even if nuclear power should become cheaper, the radio-isotope will continue to make a vital contribution to science, industry and agriculture in an increasing variety of ways. (28A960)





Men will live on "Roof of the World" to Help Medical Research

BY

A Special Correspondent

IT has long been acknowledged by the British Medical Research Council that there is a need for a more precise and prolonged study of the physical and physiological behaviour of men subjected to conditions at great altitudes.

It has been found that the simulated conditions in a decompression chamber do not provide the "work aspect" of living on a mountain and the subjects become bored, thus largely defeating the purpose of the experiment.

Experiments and the collection of data, therefore, to be of maximum value must be obtained with and from persons living under the actual conditions imposed by a prolonged stay at high altitude, and this will be one of the objects of the 1960-61 Himalayan Expedition to be led by Sir Edmund Hillary and Dr. L. S. G. Pugh.

All previous work in this field has suffered from the limitations of having to exist in a tent, the lack of creature comforts, space and facilities to make accurate observation over what, by necessity was a very short stay.

CYLINDRICAL DESIGN CHOSEN

Some form of portable building was called for if reasonable comfort, necessary for a prolonged period of observation, was to be obtained, and after consultations with Sir Edmund and Dr. Pugh and the Building Research Station, the Timber Development Association Ltd., 21 College Hill, London E.C.4. was asked to produce a design for such a portable building. After proper regard to the problem of very high wind velocity and the problem of portage, the ultimate shape chosen was a cylinder, with a flattened bottom as a floor. The material chosen was plywood and other materials were given by various firms and organisations.

The Joinery Division of J. M. Jones and Sons Ltd. Highway Works Maidenhead, Berkshire, England, was given the task of manufacturing the hut.

SECURED BY CABLE

The hut produced is 22 feet (6.70 metres) long by ten feet (3.04 metres) in diameter and is made up of eleven rings each two feet (0.60 metres) wide held

together by means of a cable round the circumference which passes through the under-carriage. Four cables each side have eyes "made on" which permit eight anchorage cables to be clipped on, and the free end of these anchor cables will have to be fixed down to the, 'col' floor in the best way the mountaineers can devise.

The joints between sections, both vertical and horizontal, will be made watertight by fixing self adhesive tape four inches (10 centimetres) wide on the outside and two inches (5 centimetres) wide on the inside. Polythene sheets have been supplied to cover the hut, but conditions of wind and so on may prevent them being used.

Five longitudinal adjustable stressing cables which extend the length of the hut inside, and two similar cables under the floor on the outside, grip all the rings together and make the hut into a hollow, almost circular, beam.

ALLOWS DAILY ADJUSTMENT

The hut is supported on three timber joists, each in three pieces, 22 feet (6.70 metres) long, which in turn are supported on two cross pieces, and to these pieces, screw jacks have been fitted to allow adjustment, which may have to be carried out daily. Small spirit levels have been incorporated in the under-carriage to assist adjustment.

The hut sections are of four types, from the ends, but the majority are curved; ten of them are knee shaped 17

are flat. The end sections are flat on edge but shaped on plan.

Each section is four and a half inches (11.43 centimetres) thick and has a nine millimetre African Redwood frame and divisions glued together and angle blocked with Balsa Wood. They are skinned with three millimetres Birch ply externally and two millimetres Birch ply internally, given by the Association of British Plywood and Veneer Manufacturers, the void between being filled with four one inch (2.54 centimetres) thicknesses of Marleycell and "Alfoil" aluminium foil used on the inner face as a vapour and radiant heat barrier.

The Resorcinol Formaldehyde adhesives used throughout were supplied by Leicester Lovell and Company Ltd., North Baddesley, Southampton, England, and pressure was obtained by the careful use of brass pins.

To connect each section to its neighbour during erection the edges were drilled for one and a sixteenth inch (1.58 millimetres) Ramin dowels, and as the horizontal joints are staggered, the units interlock and a small "U" shaped metal clip driven into small prepared holes is sufficient to hold the hut together pending the tightening of all the stressing cables. In the joints between all sections an expanded plastic strip has been provided by Sorbo Ltd., Woking, Surrey, England.

DOORS AND WINDOWS

The windows in the ends of the hut are affected by the of four thicknesses of one

eighth inch (3.17 millimetre) "Perspex" sheet supplied by Richard Daleman Ltd. 325 Latimer Road, London W. 10. and Imperial Chemical Industries Ltd. Millbank, London. S. W. 1. and set at about seven-eighths inch (22.22 millimetres) space from each other.

Ventilation is provided by three louvred and shuttered ventilators and by the provision of "stable" type doors to both the external and the lobby entrance. The centre window panel opposite the door end has been made as an "escape hatch" and a four feet (1.21 metres) wind lobby encloses the external door forming an air lock and a partial screen to the bunks.

There are two rows of four bunks on each side and the lower row can be used as a seat, with the upper bunks let down as a back-rest. The bunks are webbed with two inch (5 centimetre) "Pirelli" rubber webbing supplied by Progress Mercantile Company Ltd., 366 Old Street, London E. C. 1

The laboratory end of the hut is fitted with an eight feet (2.43 metres) bench two feet (0.60 metres) wide by three feet (0.91 metres) high under which are six trays fitting between the legs and adjustable for height. The top is covered with a blue check plastic, and the edge bead is three sixteenths of an inch (4.76 millimetres) to contain mercury if accidentally spilled during experiments,

HEATING AND VENTILATING

Under the window at the other end is a further table eight feet (2.43 metres)

long by one foot nine inches (0.53 metres) wide and two feet six inches (0.76 metres) high which can be reduced to a foot (0.30 metres) wide by dropping three flaps hinged to the rear portion. Also provided is a four feet (1.21 metres) by two feet (0.60 metres) by two feet six inches (0.76 metres) high flap table which, when folded, allows the positioning of the "Pedometer"—a cycle-like device similar in principle to the familiar rope brake used by engineers for measuring horse power on small machines.

On this machine each occupant of the hut will perform his "maximum work test"—and if you have read Sir John Hunt's book "Everest" it will be remembered that Dr. Pugh made the others "run up hill" for this same purpose.

A stove occupies a logical central position. This heater has been the result of a great deal of careful design by the British Petroleum Research and the Building Research Station staff and was made by the Simplicity Heating Company, 10A. Langley Road, Staines, Middlesex, England.

The fuel used will be kerosene, which will not freeze at the expected low temperature and British Petroleum Company Ltd. Britannic House Finsbury Circus, London, E.C. 2, were responsible for its production. The air for combustion is drawn in by a special flue, that does not draw air from the hut. A plastic covered four feet (1.21 metres) by two feet (0.60 metres) by two feet six inches

(0.76 metres) table with two fall-down flaps and two trays completes the furniture. Troughton and Young Company Ltd., Imperial Court, Basil Street, London, S. W. 3. supplied a pre-made electrical harness for lighting complete with switches and fuse board which neatly clips on to the longitudinal stressing cables of the hut.

ELECTRICITY FROM THE WIND

Electric current will be obtained from a wind driven ten-volt generator when conditions permit, thus saving fuel, or from a petrol driven ten-volt generator, and some storage batteries will also be taken. The total weight of the hut is probably a ton, but it is understood about eight and three quarters tons of fuel will be carried.

Externally, the hut is finished in aluminium paint by Walpamur and Company Ltd., 326 Kensal Road,

London, W. 10., and inside a pink gloss paint will cover the walls with a white gloss ceiling on top of a fire retardant paint supplied by Hadfields (Merton) Ltd., Mitcham, Surrey England. A canvas sheet will cover and protect the floor (quarter inch (6.35 millimetres) plywood) and eight "Sorbe" type mattresses are supplied for the bunks.

The hut, on being dismantled, was marked and crated into 36 crates and taken by road to the Royal Albert Docks for shipment to Calcutta. It is understood that aircraft will take these on to Katmandu in Nepal.

Tribute must be paid to the concept of idea and the resolution to execute such an arduous task for no material gain and only the hope of increased knowledge. Science owes much to such individuals as Sir Edmund Hillary and Dr. L. G. C. Pugh, and their enthusiastic young team,

