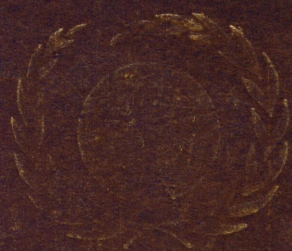
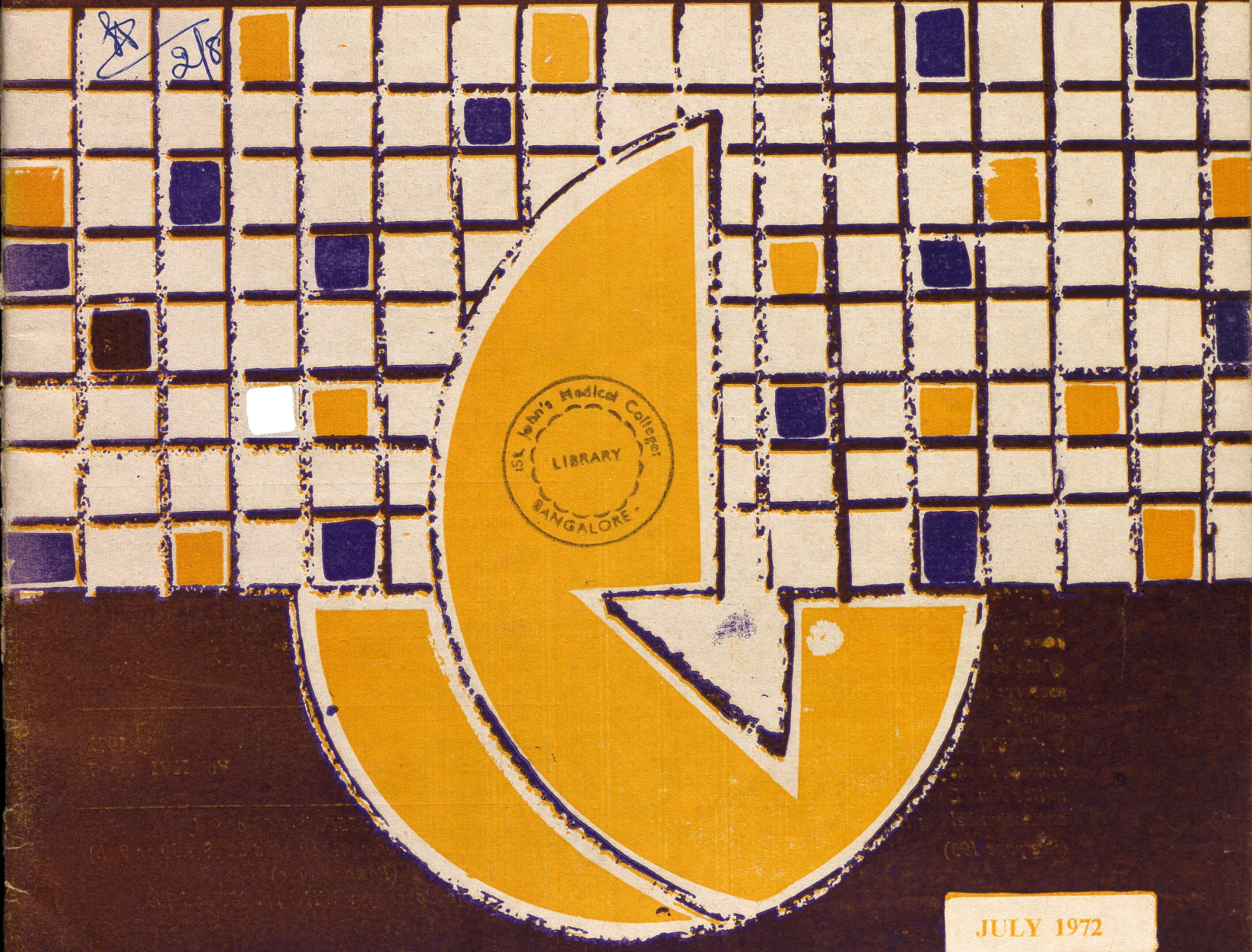


# swasth hind



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# ONLY ONE EARTH

With worldwide concern about the adverse effects of man upon his environments, the U. N. General Assembly decided in 1968 to convene a United Nations Conference on Human Environment. Following this recommendation, the Conference was held at Stockholm (Sweden) from 5-16 June, 1972.

The Assembly had decided that the Conference should be "action oriented" rather than be limited to restating the now well-known problems. The Assembly declared that the Conference should not only encourage action but provide the guidelines for such action. It also stressed that developing countries should be enabled to forestall the occurrence of problems such as are already plaguing the industrialized parts of the world.

The "Action Plan for the Human Environment" has been drafted under the direction of an international secretariat, headed by the Canadian industrialist Maurice F. Strong.

India was represented at the Conference by a team led by Shri C. Subramaniam, Minister for Planning, Science and Technology. Dr Karan Singh, Minister for Transport, Civil Aviation and Tourism, and Shri I. K. Gujral, Minister of State for Works and Housing also attended. The Prime Minister, Smt. Indira Gandhi, who also addressed the Conference said that the developing nations should not be asked to fore-swear technology to avert the danger of pollution. Smt. Gandhi added that she saw no conflict between the application of technology to end poverty of the developing countries and the concern to preserve the ecological balance of the "only one earth".

SWASTH HIND publishes the Prime Minister's address to the first meeting of the National Committee on Environmental Planning and Co-ordination held in New Delhi on 12 April, 1972. (See page 193)

# Swasth hind

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Articles on health topics are invited for publication in this journal.

State Health Directorates are requested to send reports of their activities for publication.

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# ACCENT ON ENVIRONMENTAL PLANNING

INDIRA GANDHI

As one who has been deeply interested in this subject since long before I had heard of the word ecology, I am naturally glad that people have woken up to the dangers which threaten the world as we know it. I know that in this audience I am speaking to the converted, and many of the things which I say may be obvious to you, but I feel that they have to be said for a larger audience also, because there is not sufficient appreciation of this in the country as a whole. I hope this Committee will succeed in interesting and mobilizing the entire country, especially our young people in this movement.

Since man first discovered that he could use nature for his own purposes he has been interfering with his environment. Man is a part of nature and only one of the many species who inhabit the earth. But he has treated it as his colony to exploit it. The scale of his intervention has now grown to a point where it has produced vast and disruptive changes which have already modified our existence more profoundly than any earlier human activity.

Hence, the ecological problems with which we are now concer-

ned embrace diverse aspects ranging from the economic, social, psychological problems of human settlements to the management and use of natural resources and the conservation of natural habitats. The earlier attitude of scorn has changed but some people still regard conservation and concern for ecology as something of a fad. Why worry if few tigers and rhinos and a few plant species are wiped out? Your agenda paper gives the answer. "An environment in which animals and plants become extinct is not safe for the human being either." Besides, this attitude of mind regards one species of human being as superior to another.

Pollution is affected by four factors: the prevailing natural conditions, human population; the levels of production and consumption and the level and use of technology. The environmental problems of the industrialized countries are the result of earlier exploitation as well as of present affluence while those of the developing countries are primarily determined by the manner in which machines are used or abused. In the poorer societies these pro-

blems are essentially those of inadequate development and of continuing poverty, unsafe drinking water, malnutrition, poor sanitation, inadequate housing and disease.

## Qualitative Improvement

As an international group of economists has pointed out that development is not the cause of most of these problems but the cure. The poorer countries cannot but look upon planned development as an instrument to improve the quality of life. Such planning, however, should entail a reappraisal of the objectives of development to provide more explicitly for the social and human needs of health, shelter, clean air, water and the beauty of natural surroundings. We should move away from the single dimension model which equates the growth of G.N.P.

Our emphasis should be on the qualitative improvement of life as a whole rather than on the quantitative growth of various sectors of economy. Our attention cannot be diverted from the main question before us which is to bring basic amenities within the reach of our people and to give

them better living conditions without alienating them from nature and their environment, without despoiling nature of its beauty and of the freshness and purity so essential to our lives.

As our development progresses perhaps we also shall have environmental problems akin to those in the developed countries. But we can learn from their experience. Through foresight and imaginative physical planning many potential dangers can be avoided or at least minimized. Concern with economic and social development need not be a choice between poverty and pollution. To most people progress has become synonymous with imitation of Western models but wherever we have followed models from the industrial society and have been insensitive to our own circumstances the results have not been happy.

The time has come for us to think deeply about the kind of progress we want. Should we not recast our priorities and ask ourselves what facilities are worth the price for us or for future generations? For instance, in the rural areas, a corrugated iron roof has become a sign of better living. It is certainly more durable than a thatched hut. At the same time, it is ugly to look at. It kills all artistic initiative and is not even suitable for our climate.

To give another example, for centuries Indian students have received instruction under trees. I myself had the privilege of going to a famous university where there were no classrooms. Yet

play the school building seems to have acquired greater importance than what is taught or the quality of the teacher.

Just a few days ago, I came across a poem by a sensitive teenager which points to another aspect of our imitative thinking. She speaks of village boys playing with buffaloes in a muddy village pool and asks whether it would be an improvement to deprive them of this spontaneous joy by having them conform to the restrictions of the so-called better classes who are kept isolated from the sun and the wind in their covered and sometimes heated swimming pools!

I was astounded to hear an otherwise sympathetic foreign visitor refer to people doing hard manual labour as human degradation. The personality of a man is not diminished by honest labour. Technology should certainly lighten his burden, but is it progress for vast numbers to be employed in monotonous mechanical tasks day in and day out blurring individuality and blunting their capacity to think and to feel? There are thousands of such instances. This sort of progress is avoidable but other aspects are far more complex. Individual programmes cannot be viewed in isolation but in terms of their impact on development and on environment.

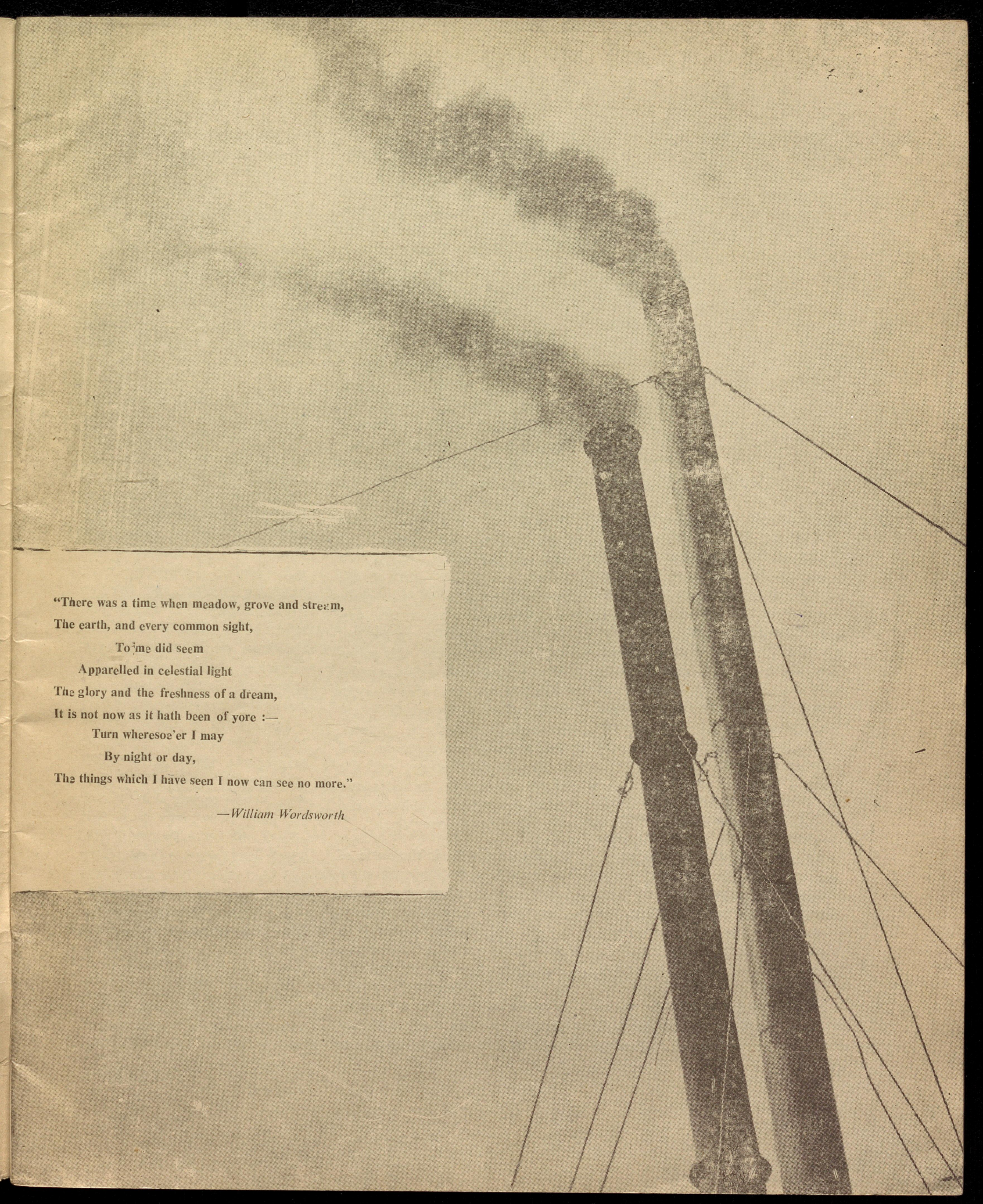
#### **The New Committee**

Some decisions will be difficult to take. For instance, fertilizers help enormously in increasing agricultural production. Yet they use up the soil. In countries still infested with mosquitoes, pesticides have been a boon. But

we in Delhi can testify that the new strains which have been developed are quite immune and resistant to the pesticides being used. Some of these pesticides which we and other countries have been using have killed off birds and other creatures and have harmed human beings. In some places, people are reverting to natural pest control, for example, breeding birds to devour insects.

A basic need for advance of any kind is energy. About half the energy consumed in our country is for domestic use and half this amount is supplied by firewood. This is denuding our forests, eroding the soil, silting rivers and affecting the climate. Hence the importance of providing a cheap fuel substitute for those who use firewood. An integrated strategy is indicated. If we imitate what the industrialized countries did in their earlier phases, we might only add to the pollution without significantly raising per capita consumption level.

Until recently the structure of Government did not provide for any point where environmental considerations could receive the attention they deserved. This gap has now been bridged by the National Committee on Environmental Planning and Coordination with Shri (Pitamber) Pant, a former Member of the Planning Commission, as its whole-time Chairman. The Committee will be manned by multi-disciplinary teams. But it can succeed in its complex tasks only in the measure it receives willing cooperation from all Ministries and Departments. It is not intended to take-



“There was a time when meadow, grove and stream,  
The earth, and every common sight,

To me did seem

Apparelled in celestial light

The glory and the freshness of a dream,

It is not now as it hath been of yore :—

Turn wheresoe’er I may

By night or day,

The things which I have seen I now can see no more.”

—*William Wordsworth*

over the executive functions of other agencies. Its work is to plan and coordinate. The responsibility for execution will continue to vest with the various Ministries and agencies of Government.

It is not enough for official agencies to become environment conscious. By its very definition, environment is pervasive. Can there be environmental planning without the involvement of the entire population at all levels—of architects and contractors, of technicians and rural workers, of horticulturists and foresters, in fact of all citizens? To design and construct private and public buildings and other structures which blend with their surroundings and are appropriate to the climate and customs and yet are durable and inexpensive is the task of our architects and engineers. Because of the vast numbers of people whom we have to serve and the very limited resources we have at our disposal, we must make the maximum use of locally available materials for building and other purposes.

All of us especially those concerned with industry at various levels and with handicrafts must learn to use all waste products. In everyday life the general public can help, without any effort or expenditure, by preventing the waste of food, by conserving water by not letting taps in their houses and along the roadsides run unnecessarily, by conserving power, by switching of electric lights, fans and so on when not needed, by seeing

that our cities and villages are kept clean and by having a new outlook towards the flora and fauna of the country. One sees so much of needless destruction of plants and trees and a great deal of wanton cruelty towards birds and animals. What we need is civic consciousness of a very high order.

#### Underdevelopment

Many environmental problems, particularly those involving the contamination of rivers, oceans and atmosphere, are regional if not global in scope and impact. To understand and tackle such problems effectively we shall have to work closely with our neighbours in the Asian region and farther afield. Twenty per cent of the world's population consumes 80 per cent of the natural resources of the globe and produces about ninety per cent of the world's wastes and pollution. How can this situation be regarded as compatible with the concept of an equitable world order which is enshrined in the U.N. Charter. Problems of development and environmental survey call for major changes in the economic relations between affluent and the developing countries.

Unfortunately, in the name of environmental improvement some scientists in the advanced countries recommend economic policies which will further depress the developing countries. One of our immediate goals is to be self-reliant in economic sphere. Is it not as important to be independent in our thinking? We must be able not only to choose

our direction but to know where to stop and when to turn. We should be mature enough to resist the temptation of non-essentials which glitter for a while. It is only when man is able to make the right choice at every stage and to distinguish between the essential and the expendable that he can give attention to the more worthwhile aim of improving himself and finding fulfilment.

I should have thought that progress would mean an enriching of the spirit and clarity of mind so that man would become more sensitive and aware and would think more precisely and comprehensively. He should have the capacity to live at peace with himself, with his fellowmen and with nature. Technology must bring us comfort and freedom from drudgery. But we find that in countries which have reached the stage of affluence an ever-increasing number of thinking people are acutely unhappy and attempting various methods of escape. Most of the others believing what is fed to them by the many glossy magazines and oblivious to the emptiness of their lives become engrossed in the race for more possessions as if that were a substitute for a full life. Man's wild spirit has been creator and destroyer. Now, with the possibility of destruction so starkly real we must concentrate on the art of preservation.

*(Based on the inaugural address by the Prime Minister at the first meeting of the National Committee on Environmental Planning and Coordination held in New Delhi on 12 April, 1972.)*

# PHOTOTHERAPY

## A NEW APPROACH TO PREVENTION AND TREATMENT OF JAUNDICE

DR P.C. BAJPAI

---

Phototherapy is a new technique for preventing and treating jaundice of the new born to a great extent. After suitable modifications, this method can be used as an effective tool by all centres and district hospitals which deal with the delivery of cases.

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**P**HOTOTHERAPY or treatment with fluorescent light rays has been found to be a new, simple, safe and effective method of treatment of jaundice in new born children. The need for such a treatment cannot be over emphasized as jaundice of mild to severe grade occurs frequently in new born babies and is known to cause brain damage and/or death. The discovery that light exposure reduces jaundice was the result of observation by a British nurse in 1958. She observed that jaundice is reduced in babies when exposed to sunlight over a number of hours. Another support to the idea came out of the observa-

tions in laboratories that bilirubin solution (a chemical responsible for yellow colouration of jaundiced babies) when exposed to high intensity of light changes colour.

Both these observations led to the experiments on prevention of jaundice in premature white babies in U.K. and U.S.A. These babies when exposed to light soon after birth were found not to develop jaundice at all or only of a mild grade as opposed to unexposed premature babies in whom jaundice occurred in high numbers. However, it was held by some that light exposure may not help in babies with pigmented skin like that of Negro babies. While the reasons remained unclear, the implication was that possibly the skin pigment may come in the way of effectivity of light rays. Since vast majority of babies born in India have a fairly high concentration of skin pigment (although less than that of Negro babies), a trial to evaluate the effect of phototherapy in jaundiced and non-jaundiced babies was considered desirable.

A team of doctors working in the Neonatal Unit, Department of Paediatrics, K.G. Medical College, Lucknow in collaboration with the Biochemistry Division of the Central Drugs Research Institute, Lucknow started the experiments early last year with the financial assistance from the Indian Council of Medical Research. A phototherapy unit was devised and prepared locally with the help of Lucknow Electric Supply Undertaking. Its effectivity in prevention of jaundice in 67 premature and mature babies born in Queen Mary's Hospital, Medical College, Lucknow was evaluated. Nearly half of these babies were kept as controls. Jaundice could be prevented in almost all babies who received phototherapy except one, who developed a very mild jaundice. On the other hand, nearly 58 per cent of the unexposed babies developed jaundice—some of them with fairly marked severity. This can be regarded as a highly satisfactory effect in spite of their skin pigment. These experiments were supported by measuring the quantity of pigment (bilirubin) in the blood of all these babies on days 1, 2, 4 and 6.

### Treatment of Marked Jaundice

Another point which has remained unresolved is whether light treatment can be used as a treatment procedure in rapidly rising bilirubin levels,

*i.e.*, as seen in A. B. O. and Rh. incompatibilities. Therefore, the role of phototherapy in another group of new borns consisting of moderately severe jaundiced babies (neonatal hyperbilirubinaemia) was also investigated. In a short span of 5—6 months, 50 such babies could be treated by light exposure while 26 such hyperbilirubinaemic new borns were followed up during first week of birth without exposure to fluorescent light. The results were remarkably satisfactory and showed a marked reduction in jaundice within first 48 hours of the treatment. This was shown by changes in serial samples of blood for bilirubin levels. A majority of these severely jaundiced babies would normally be expected to require changing of their blood (known as exchange transfusion) to prevent death or brain damage. The bilirubin levels did not exceed the critical levels of 18 mgm per cent when started early. A follow-up of the babies is being done and has not shown any detectable brain damage so far.

#### **Causes of Jaundice in the New Born**

Jaundice of some degree is observed in as many as two-thirds of normal new borns. This is generally not dangerous and gets corrected by itself in the first ten days of birth. However, several babies get moderately severe to severe jaundice each year. Premature babies get more severe jaundice with a great danger to brain damage due to the yellow pigment (bilirubin). The bilirubin is formed by disintegration of the baby's own red blood cells. A number of babies are also born with differences in blood groups (A, B, O, AB & Rh.) between the mother and the baby—the latter inherits these from the different blood group of the father. The disintegration of red blood cells is more rapid in these, resulting in extra large quantities of bilirubin production. Beyond critical concentration the baby almost invariably gets brain damage known as bilirubin encephalopathy or kernicterus (brain damage). Rh. incompatibility is the severest form of this haemolytic jaundice and has also been successfully treated in several instances by using phototherapy technique. The mother incidentally does not suffer much, but her baby is exposed to the risk of death in the first 7—10 days of life. Many such surviving babies remain handicapped for life causing a great burden to the family and the community. Many other causes, however lead to severe and progressive jaundice.

Many such situations are well recognized but in several babies the causes remain obscure.

#### **Exchange Transfusion**

Uptil now, the only way of dealing with such situation in premature or full-term baby was by changing its blood (exchange transfusion). This is a very specialized technique and is often risky. It has also been stated by experienced paediatricians all over the world that such a procedure may carry a risk to life of greater frequency, even in well developed centres, than the brain damage (kernicterus), which it is known to prevent. Moreover, besides being hazardous, exchange transfusion is a costly procedure.

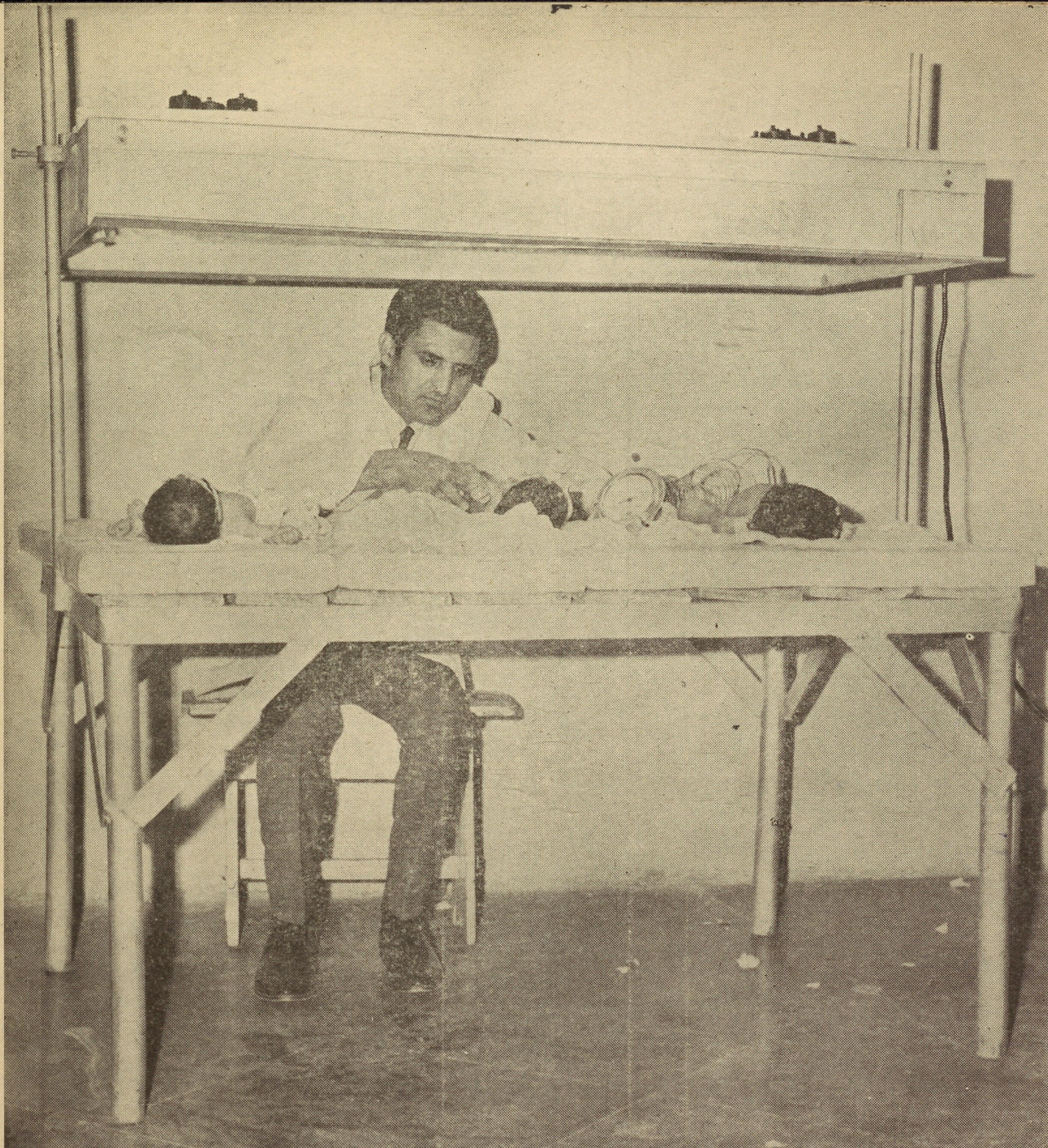
#### **Technique of Phototherapy**

The new born baby is put naked in the unit which has a high illumination intensity of 400—500 foot candles with light source kept at a distance of one metre. The baby's eyes are closed with a patch taking due precautions for protecting the eyes from infection, etc. The baby is alternately turned on its front and back every one hour, continuously over 24 hours each day till the age of seven days, and is only removed from the unit for cleaning and feeding. A careful watch over the baby has to be kept.

#### **Mechanism of Action of Light**

Two types of bilirubins—the indirect and direct types—in the body are responsible for jaundice. It is mainly the indirect bilirubin (lipid soluble) which is acted upon by fluorescent light waves. In the test tube certain unknown compounds are formed which are water soluble and are harmless. It is presumed that these compounds are passed out in urine and bile. How and where in the body the action of light on bilirubin occurs, is under investigations.

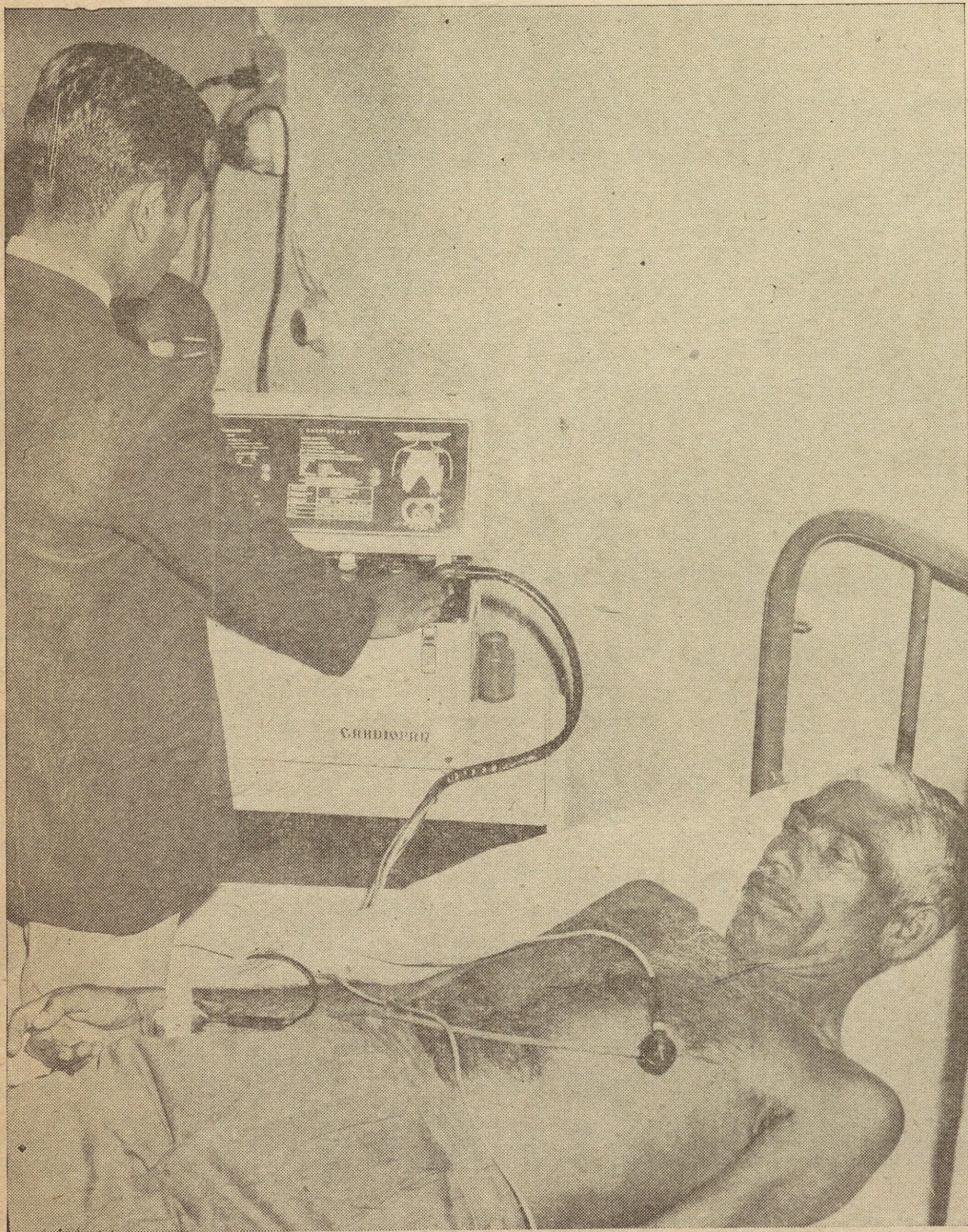
This new technique for preventing and treating jaundice of the new born can help in solving the problems of jaundice to a great extent. The method (after suitable modification) can be used as a useful tool by all centres which deal with delivery of mothers as also by all district hospitals where qualified obstetricians and paediatricians are available. Simple facilities along with one or two photo-



*A jaundiced baby is being examined in the improved phototherapy unit.*

therapy units can meet the situation. A general awareness is needed to detect jaundice at the earliest by examining the new born babies in sunlight. Often three or four babies can be kept in one unit at a time. After suitable treatment in first ten days of life, the babies can be referred to a regional centre for proper

diagnosis and future assessment and care. Such steps can reduce the child mortality as well as reduce the incidence of brain damage due to jaundice and thereby take a tremendous load off the family, the community and the government which is required later for caring of these handicapped babies. □



*All factors that make an individual susceptible to heart attacks are preventable. With regular check-ups, says Dr. N.S. Dixit, one can know whether these factors are present or not and preventive measures can be instituted.*

## PREVENTION OF HEART DISEASE

DR N.S. DIXIT

*Q. What is heart ? How does it function ?*

A. Heart is a muscular pump which pumps blood into the blood channels. These channels carry the blood to all parts of the body by way of very small channels. These channels again become bigger and the blood is carried back to the heart to be pumped again. Heart has four chambers, two on the right side which contain impure blood and the two on the left side which contain pure blood. There are valves between the upper and lower chambers on both sides.

*Q. What are the major diseases of heart ?*

A. The two major diseases that afflict human beings are : (1) coronary artery disease which is common in older people, and (2) rheumatic heart disease which affects the valves in younger people.

*Q. What is coronary artery disease ?*

A. The heart muscle gets its nourishment of oxygen from the two blood channels—one in front of the heart, and the other at the back of it. These are called the coronary arteries. These become narrowed due to deposition of fat. Hence, the narrowed channels cannot give the required amount of oxygen to the heart muscle which is active throughout a man's life.

*Q. Why is prevention so important ?*

A. Heart disease is becoming more and more common. More ominous than this is that it is affecting younger people. But the most disturbing factor is that about one-fifth of those who get a "heart attack" die within half an hour or so before any medical help can be given. Even with the latest treatment about one-third die within a month. Hence, the prevention is very important. Extensive research has been done during the past 15 years to find out the cause of heart disease. We do not know all the factors that bring about "heart attacks", but with the available evidence, one can confidently say that a national programme to prevent coronary artery disease must be instituted.

*Q. What are the major risk factors that lead to heart disease ? How these factors can be minimized ?*

A. Persons who suffer from coronary artery disease have a high level of blood fat. It has been seen that those who have less than normal blood fat (serum cholesterol) rarely suffer from coronary artery disease. Hence, it is important to reduce the fat in

the blood. This can be achieved by : (1) reducing the weight, (2) avoiding foods such as, *ghee*, butter, vanaspati, eggs, milk, brain, etc., which contain saturated fats—oils with the exception of coconut oil do not increase the blood fat and oil should be used in place of *ghee* and hydrogenated oils, and (3) the use of certain drugs.

*Q. What is the role of exercise in preventing heart disease ?*

A. Lack of exercise is the second most important factor in heart disease. We often hear that our grand parents did not suffer from heart disease as we do today. One of the reasons was that these people did lot of exercise and in modern life one hardly does any physical work. Hence, it is absolutely essential that we do take part in some games or at least walking with a good speed about three to four miles a day.

*Q. Is tension also one of the risk factors ?*

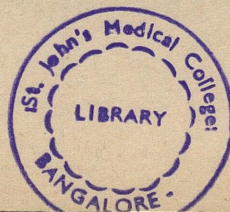
A. Yes. The type of individual who gets in his mid-thirties or forties, very ambitious, holds a responsible nerve racking executive post, eats fatty rich food and does no exercise. It is this type of person who has a deadline for every thing and who is rushing from morning till evening counting every minute of his. Hence, it is important to organize lives properly and do the work in a relaxed manner. It is dangerous to have too many appointments in a day and suffer from the anxiety of not meeting the demands. When assistants make mistakes, it is better to ignore and be kind to oneself and not get violent.

Persons who have a high blood pressure have more chances of getting a heart attack. It is imperative that everybody should get the blood pressure checked at least once in six months. There are many drugs to control the blood pressure. Once the blood pressure is maintained at a normal level, the chances of getting a heart attack are minimized.

*Q. It is commonly believed that obese persons are more prone to heart disease. How does obesity affects heart ?*

A. Many of the diseases the human beings suffer from, and lot of discomfort to oneself is because of overweight. If you want to escape a heart attack which may be brewing up in your blood vessels of

(Contd. on page 220)



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Young smokers are likely to worry about damages to health that may not become apparent for another 30–40 years. Educational programme to discourage smoking among the young should, therefore, stress the early morbidity and disability associated with the habit, for example, the adverse effects of tobacco on respiratory function in relatively new smokers.

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## THE LIMITATION OF SMOKING

**D**URING the past twenty years, clinical, epidemiological, and laboratory studies have clearly shown that cigarette smoking is a major etiological factor in a number of disabling and fatal diseases, notably ischaemic heart disease, lung cancer, chronic bronchitis, and emphysema.

In certain developed countries, the publication of scientific findings on the effects of smoking seems to have reduced cigarette consumption to some extent. On the other hand, consumption in developing countries is rapidly increasing. If this trend is not halted, health conditions in these countries will be worsened by an increase in disability and mortality from diseases of the heart and lungs.

The ill effects of smoking become manifest only after a period of years and are thus not obviously linked with the habit. Since the economic benefits from tobacco-growing and the manufacture, marketing, and taxation of tobacco products are enormous, many governments hesitate to take firm action against a habit whose dangers are not generally understood. It is clear that the limitation of disease resulting from cigarette smoking presents a new and formidable challenge to preventive medicine.

### Organizing a Control Programme

To be successful, a programme for the control of smoking needs the support of the health and teaching professions and of opinion leaders generally. At the outset, a central standing committee or similar body should be set up to plan, co-ordinate, and supervise the work. This committee must show that the problem is serious enough to warrant the allocation of the necessary funds and staff for a control program-

me. In particular, it should draw attention to the high prevalence among cigarette smokers of the diseases most likely to result from smoking.

The committee may have to carry out a study to obtain reliable statistics on the consumption of cigarettes and on the population groups (by age, sex, and profession) in which smokers are most likely to be found. It will also have to determine whether the distribution of smokers in the population corresponds to that of such diseases as lung cancer, chronic obstructive lung disease, and ischaemic heart disease. In almost every country, cigarette manufacturers possess detailed information on the public's smoking habits; if they could be obliged to divulge it, much time and effort might be saved.

Information concerning the smoking habit and its effects on health should also be obtained from the general public and from health workers. A study with this aim will shortly be carried out in eight cities in Latin America. It will cover a representative population sample in each city and is designed to obtain data not only on the prevalence of smoking but also on related social, cultural and demographic factors. The findings will be used to help the health authorities of the countries concerned to formulate policies and programmes and establish basic criteria for evaluating the effectiveness of control measures.

### Legislation

Until recently, legislators in most countries have been ill informed about the smoking problem and have not taken an active interest in it. It must be brought home to them that, while it is up to the individual to decide to stop smoking, the legislature

has the responsibility of enacting measures that will encourage him to do so. An important factor to be taken into account is the possible effect on the economy of a change in smoking habits, *i.e.*, the economic gains resulting from better health due to a reduction in smoking must be weighed against any economic loss and disruption the change might cause.

#### **Warning Notices on Cigarette Packets**

Several countries have already made it compulsory for cigarette packets to bear printed warnings against the dangers of smoking, and others are considering this step. While these warnings are unlikely to have much immediate effect, they serve to show that the government is concerned about the matter and to create a suitable climate in which to launch a general educational programme on smoking and health.

In addition, every cigarette packet could include a card giving rules for less dangerous smoking, for example:

- Smoke fewer cigarettes
- Inhale less frequently and less deeply
- Take fewer puffs from each cigarette
- Remove the cigarette from the mouth between puffs
- Smoke cigarettes with a low tar and nicotine content.

People who have not yet started to smoke may be reached by warning notices on advertisements.

#### **Restrictions on Smoking in Public Places**

By diminishing the number of opportunities to smoke, restrictions on smoking in public places and conveyances should cut down cigarette consumption to some extent. Since the pathogenic effects of tobacco are directly related to the amount smoked, any action that reduces this amount, whether voluntary or not, may afford some measure of protection.

#### **Encouraging the Manufacture of Less Harmful Cigarettes**

Governments can impose differential taxation favouring the use of less harmful cigarettes. Steps to encourage the use of cigarettes with a lower tar and nicotine content have already been taken in a number of countries. In those where confirmed smokers are still relatively few in number, it should

not be difficult to establish maximum permissible levels of tar and nicotine.

#### **Increased Taxation on Cigarettes**

There are no consistent data relating increases in cigarette prices to their consumption. A frequent experience has been a temporary drop in consumption followed by a fairly rapid return to the previous level and to the earlier trend of increasing consumption. Findings of this kind can be misleading, however, for two reasons:

1. They usually reflect gross consumption changes, which may be due to population growth; even when per capita consumption figures are given, they do not allow for increases due to the adoption of the habit by successive generations of young people. Statistics are needed on the proportion of smokers who stop smoking when cigarette prices go up, the proportion who temporarily lower their consumption and the extent to which they do so, and the proportion who lower their consumption permanently.

2. The effect of increased prices on cigarette consumption has so far been studied only in populations that were not seriously concerned about the hazards of smoking and in which only a small proportion of smokers wished to give up the habit.

In a population fully alerted to the dangers of smoking, price increases could encourage a great many smokers to try to give up cigarettes, and a certain proportion would probably succeed in the attempt.

Even if increased prices do not lead to any great reduction in the proportion of smokers in the population, they may have the effect of reducing the daily consumption of individual smokers. In fact, price may be an important determining factor in the wide variations in average consumption observed from country to country.

#### **Restriction on Advertising**

The advertising of cigarettes should be reduced with a view to its eventual elimination. Its prohibition should prevent cigarette smoking from becoming a serious problem in those countries where the number of smokers is still relatively small.

#### **The Role of Health Workers**

The success of an anti-smoking programme will depend to a large extent on attitudes among profes-

sional health workers. A study of a representative sample of physicians, nurses, and other health workers should be undertaken to determine their personal smoking habits, their knowledge and acceptance of the scientific evidence on the effects of cigarette smoking, whether they advise patients on the subject, and their views on their role in relation to the illnesses caused by smoking.

If, in any country, the level of smoking is as high among health workers as it is in the general population, it is clear that they are not convinced by the accumulated evidence on the subject. An effort should be made to deal with this situation by giving greater prominence at professional meetings to information on the effects of smoking.

A similar survey among medical and nursing students and others being trained for health work would show whether enough is being done to inform them of the relevant scientific findings.

#### **Group Approaches**

With the co-operation of schools and other educational institutions, a high proportion of young people can be made aware of the dangers of smoking, but there is no common means of approach to adults. Most adults, however, belong to some group—occupational, religious, cultural, social, athletic, or civic—through which they may be reached.

The few efforts so far made to approach people through such groups have been limited to providing posters, leaflets, lectures, and films warning against the dangers of smoking. A difficulty is that smokers who feel unable to give up the habit may become so frightened by such warnings that they either avoid them or cease to react to them. Efforts limited to alarming the public or offering the services of specialized clinics to the few who wish to stop smoking and feel they need professional help are inadequate to deal with the problem.

Research into the process of giving up smoking has shown that it starts with simple awareness of the dangers involved; this is followed by a clearer perception of the risks involved, heightened concern about them, and a conscious decision to abstain. Smokers must be encouraged to spend more time thinking about the habit and its consequences if they are to make a serious decision to give it up. Here, shock tactics may be self-defeating.

#### **Mass Approach**

Because of the vast numbers of people who smoke cigarettes in the countries where the problem is most acute, a mass approach seems indicated. Experience, however, suggests that the use of the mass communication media needs to be tempered with an appreciation of their strengths and weaknesses.

Although the process of giving up smoking can be influenced at any point by the mass media or by a more personal approach the mass media are normally most effective at the beginning—particularly in making people aware of the problem and getting them to worry about it—, whereas personal advice and support become progressively more important in the later stages.

As many approaches as possible should be tried; each can reinforce the effect of the others thereby increasing the chances of success.

#### **Measures to Discourage Young People from Smoking**

The measures so far described are aimed mainly at established smokers. The discouragement of smoking among young people raises additional problems.

Studies have shown that one of the characteristics distinguishing smokers from non-smokers is conformity to a family smoking pattern, the habit being more frequent among children whose parents and older siblings smoke. Another is the influence of peer groups. Yet another is low achievement; smoking is more frequent among children who do less well than others at school and set themselves lower goals. Finally, it appears that, for some young people, smoking is a symbol of independence and rebellion against the norms of the family or group to which they belong. Unfortunately, no adequate analysis seems to have been made of the variations in the relative importance of these factors as a young person passes through the successive stages of the process of becoming a smoker.

There is also evidence to support the view that smoking can have a considerable symbolic significance for the young, notably as regards social relationships with their peers. Once they have started to smoke, often out of curiosity, young people presumably learn that they can use smoking to heighten their emotional state or to reduce feelings of anxiety, fear

or insecurity. They may also become habitual smokers for whom the use of cigarettes has no particular emotional significance.

Not many young smokers are prepared to worry about damage to health that may not become apparent for another 30—40 years. They may, however, be impressed by data on the early morbidity and disability associated with the cigarette habit, for example, the adverse effects of tobacco on respiratory function in relatively new smokers.

It must be remembered that risk-taking has its attractions, particularly for boys living in a society in which it is considered as part of the male role. Thus an educational programme that does nothing but stress the risks of cigarette smoking may have an effect contrary to that intended. The emphasis should be rather on the exercise of personal judgement. Health workers must realize that education is not so much a matter of trying to get young people to do what those in authority consider best for them as of helping them to develop the capacity for taking their own decisions in full knowledge of the consequences. If they can be brought to realize that health is a valuable asset and that behaviour has a significant effect on health, then they will be able to judge whether the pleasure derived from a habit that can be harmful to health justifies the risks involved.

● Teaching in schools on the subject of smoking and health is often unsatisfactory. This may be due to inadequate preparation of the teachers, the absence of suitable teaching aids, or a lack of guidance from health and related services. In some instances, the teacher feels ill at ease because he is a smoker himself.

● In a few schools, attempts have been made to promote an understanding of the issues involved by a form of teaching in which particular stress is laid on the values, interests, aspirations, and needs of young people at various stages of their growth and development. The children learn how the human organism is constituted, how it works, what can go wrong with it, and how it is influenced by personal health practices and factors pertaining to the home, the school, and the community. They are taught individually or in small groups, and the various aspects of the subjects are studied in depth. The development of teaching aids fostering self-instruction by students should be encouraged; like any other

teaching aids, they should be designed for use by different age groups and at different stages of the curriculum. Experience suggests that this form of teaching is particularly effective and helps to develop the capacity to take well founded decisions.

Education on the risks of smoking need not be confined to the school but should be given whenever the opportunity arises—for example, during medical examinations, medical treatment, or vaccinations. It is particularly important to see that the social and recreational activities organized for young people do not take place in a setting that might encourage smoking.

If fewer young people are to take up smoking, two conditions must be fulfilled. The first is a reduction in the amount of smoking by adults and in the extent to which the habit is accepted in most societies. The second is the improvement of methods for encouraging patterns of behaviour conducive to health.

Education on smoking should be a part of health education, just as health education should be a part of total education. Co-operation between education and health authorities should, therefore, be continued and strengthened. Here, the work undertaken by WHO in collaboration with UNESCO to support these authorities in the systematic planning of school health programmes and of teacher training in health education is of crucial importance. It is essential that the programmes thus developed should give a large place to such vital questions as that of smoking and health.

Finally, it is clear that better use should be made of existing educational measures for the discouragement of smoking, and that operational research to evaluate other measures should be encouraged.

#### **Recommendations**

● Each government should establish an adequately financed and staffed central committee, or other appropriate body, to prepare, co-ordinate, and supervise specific programmes for the control and prevention of cigarette smoking.

● To provide a basis for planning programmes, seeking financial support, and at a later stage, evaluating the effectiveness of the programmes, studies should be carried out to determine the magnitude and nature of the problem and to assess the smoking habits and attitudes towards smoking of the general public and, in particular, of members of the health and teaching professions and other opinion leaders.

● Special efforts should be made to enlist the co-operation of legislators and to provide them with information on the health consequences of smoking and on control measures taken in other countries.

● Steps should be taken to curtail the advertising of cigarettes, with a view to its eventual prohibition.

● Legislative action should be taken:

—making it compulsory for cigarette packets and advertisements to bear warning statements about the health hazards of smoking

—requiring manufacturers to state, on cigarette packets and in advertisements, the nicotine content of each cigarette, smoked under the standard conditions

—requiring the inclusion, in every packet of cigarettes, of instructions for reducing the hazards of smoking

—instituting a system of differential taxation in order to discourage the smoking of cigarettes with a high tar or nicotine content

—increasing taxation on cigarettes

—establishing upper limits for various constituents of tobacco smoke.

● Health workers should recognize the importance of their role in discouraging smoking and be ready to assist patients who find it difficult to give the habit up. They should in particular:

—set an example by not smoking themselves and encourage patients and their families to stop smoking

—discourage young people from starting to smoke

—demonstrate the ill effects of smoking, where feasible, using appropriate screening procedures

—urge that action against smoking should form a part of all medical and health care programmes, take an active part in health education activities, and in general demonstrate their support for policies and programmes aimed at the control and prevention of cigarette smoking.

● Medical schools and other institutions for the training of health personnel should ensure that their students are fully informed about the health hazards of smoking.

● Health authorities and organizations should:

—discourage smoking in hospitals, dispensaries,

out-patient departments, doctors' offices and consulting rooms, etc.

—provide anti-smoking counselling services at hospitals and out-patient departments

—encourage health workers to refrain from smoking, especially in the presence of patients and young people

—discourage smoking in public places and conveyances

—give the maximum publicity to the health hazards of smoking

—collaborate with ministries or departments of labour in seeing that instruction on the hazards of smoking is an integral part of occupational health programmes in factories and other places of employment.

● The health authorities should collaborate with the education authorities in preparing curricula and teaching materials on the health hazards of smoking to be used in health education programmes in schools, teacher training institutions, universities, etc. A special effort should be made to improve teacher efficiency in all branches of health education.

● The health authorities should co-operate with other government departments, the armed forces, professional health organizations, voluntary health agencies, religious associations, sports clubs, men's and women's clubs, etc. in drawing attention to the dangers of smoking.

The consultants' report containing the above recommendations was submitted to the Twenty-fourth World Health Assembly, which endorsed them and called on Member States to give all possible consideration to putting them into effect. It requested the Director-General to continue to assemble information on the effects of smoking and the action being taken in different countries to discourage the habit, to emphasize the control and prevention of smoking in WHO's operational programmes, and to continue to co-operate with the United Nations, the specialized agencies, and non-governmental organizations in fostering a greater awareness of the health hazards involved. The Director General was also asked to promote the production, dissemination, and exchange of educational materials designed to discourage smoking and to produce a code of practice to guide governments in formulating legislation on the subject. —*WHO Chronicle, October, 1971*

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*Many people suffer from incurable diseases caused by the genetic effects. Thanks to the efforts of medical men who are looking for a way to....*

## PUT BACK THOSE MISSING ENZYMES

DR BRENDA RYMAN *and* DR GREGORY GREGORIADIS

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**M**ANY of the so-called "storage diseases" are caused by a genetic defect and are hereditary disorders which may lead to incurable disease or to death in infancy.

In one of them known as Pompe's Disease the body accumulates glycogen because one of the enzymes which should enable glycogen molecules to be broken down is missing. We have found a possible way of replacing that missing enzyme.

Enzymes are the catalysts which control the chemical changes undergone by almost all body constituents, by breaking down large molecules into smaller ones. Some of these enzyme-mediated processes take place in certain definite compartments of the animal cell known as lysosomes, and are often the way the body rids itself of unwanted materials. Furthermore, a certain class of molecule will be attacked only by a certain enzyme.

Now, enzymes themselves are made according to the blueprint set out by the genetic apparatus of the cell. When something goes wrong with the blueprint of a particular enzyme it is not produced. Hence, whatever molecules are normally attacked by that enzyme will survive and accumulate to such an extent as to interfere, often fatally, with the function of tissues.

### **The Missing Enzyme**

Supplying the missing enzyme is one hope of a cure. Patients with storage diseases are injected

with the enzyme they lack in the hope that the enzyme will reach the afflicted tissues, enter the lysosomes, and attack the stored material. This method, whereby enzymes directly enter the blood circulation, presents several problems, including the development of allergic reactions, incompatibility with the blood and, even more serious, the inability to direct enzymes to certain tissues or cells of the body. We believe that some of these problems may be solved by injecting enzymes already entrapped in artificial spherules made of lipids. These tiny spherules—known as liposomes—can be 50 times smaller than a red blood cell.

### **Benefits of Liposomes**

Although liposomes have been known for some time, we appear to be the first to explore the possibility of their use with an enzyme. Intravenous injection to animals has already given promising results. Liposomes are taken up by the liver, to a lesser extent by the spleen and by the two main types of liver cells. This is important because in storage diseases both types of liver cells can be involved. Detailed examination of the liver reveals that liposomes, together with their precious load, the enzyme, find themselves eventually inside the lysosomes.

There the liposomes made of lipids which are ordinary body constituents, are attacked by the specific lysosomal enzymes which normally destroy

*(Contd. on page 220)*



*The President, Shri V. V. Giri, delivering the inaugural address on the occasion of the World Heart Month on 7 April, 1972 in New Delhi. (From left to right) Dr S. Padmavati, Principal-Director, Maulana Azad Medical College, New Delhi, the President, Dr J. B. Shrivastav, Director General of Health Services. (Facing page) The President also inaugurated the Heart Exhibition put up by the Central Health Education Bureau, New Delhi.*

## **WORLD HEART MONTH**

**T**HE President, Shri V.V. Giri called upon the members of the medical profession to educate the public on the urgent need to prevent heart diseases because medical treatment was beyond the reach of the common people.

Shri Giri was inaugurating the World Health Day meeting held in New Delhi on 7 April, 1972 to celebrate the World Heart Month.

The President said that most of the cardiovascular diseases occurred suddenly and after it was too late by the time the ailment was detected. He, therefore, urged the need to educate the common man on the ways of preventing the disease. Shri Giri said "there is no preventive inoculation against

heart attacks, the only method is prevention and this calls for a continuous programme of education".

"The stress and strain of modern life is taking a heavy toll. It is the cultivation of right mental attitude that will help us to avoid mental strain", the President said. "Equanimity of mind is very essential to face problems of life. The danger of heart attack seems to depend on maladjustment of environment. When the environment changes, certain old habits persist and are super imposed by newly acquired ones. Sometimes old habits are completely discarded in favour of new habits and way of life. Therefore, it is essential to cultivate discipline and health habits which should be in line



with the environment and the energy requirements of the body" the President said.

#### Welcome Address

Dr S. Padmavati, President of the All India Heart Foundation, in her welcome address said that in advanced countries heart disease was responsible for one out of every two deaths after age of 40. "Heart attack in the West", she said, "takes precedence over cancer, accidents and infections". "In these countries heart attacks and heart strokes form the most important cause of death and attack men at the peak of their careers between the ages of 40 to 55 or earlier", she said.

The situation in India was very different, Dr Padmavati said. "Heart diseases due to infection are far from controlled and formed 35 to 50 per cent of the all heart cases. Rheumatic heart disease, the most important, affects mostly children and the young and results in much sickness, loss of manpower and early death."

"Pulmonary heart disease, also preventable, takes a large toll of life and is responsible for loss of productivity in men and women alike."

Dr Padmavati said that the administrators and doctors in India were faced with several problems in the sphere of heart disease, firstly to control the infectious types of heart disease, secondly to prevent heart attacks and strokes assuming the epidemic form they have in the West, and thirdly, the training of physicians and surgeons in the speciality of cardiology and cardiac surgery. She said that the country had barely 500 persons in these two categories for millions of people in India. She laid emphasis on the need of public health education and the establishment of more centres for diagnosis in the country. "Research to unravel the causes of the various types of heart disease and their cure and prevention is equally important", she added.

Dr J.B. Shrivastav, Director General of Health Services, proposing a vote of thanks said that the rheumatic heart disease was the commonest form of heart disease in India which was widely prevalent especially among the people in the lower economic strata of the society. He added that coordinated

efforts by medical, social, educational and vocational experts were needed to adequately tackle this problem.

Dr Shrivastav said, "in spite of many handicaps—monetary and others—the Government of India has been increasing the facilities for investigation and treatment of cardiac cases throughout the country". He further said that though the treatment facilities were on the increase adequate steps should be taken to educate the people on the preventive aspect of the heart diseases. "This calls for a change in the living habits of the people at large and this can be brought about by a process of education only", he said.

Referring to the Government's responsibility in tackling this problem, he said, "it is not possible for a Government agency alone, single-handed to take health services to the people. Nation's health is no more the jurisdiction of the medical profession alone. Indeed the society can help build a healthy nation". It was in this context, Dr Shrivastav, said that the voluntary organizations had a vital role to play to educate the people on the preventive aspect of the health problems.

#### Other Functions

A number of meetings were organized for the public as well as the medical profession to observe the World Health Day. Shri Uma Shankar Dikshit, Union Minister for Health and Family Planning, Professor D.P. Chattopadhyaya, Minister of State for Health and Family Planning inaugurated separate meetings in connection with the Heart Day.

Shri Dikshit who opened a programme "Your Heart is Your Health" at the Delhi Medical Association outlined the hazards of urbanization and industrialization and the price civilization had to pay for heart ailments.

Coronary artery disease, which was a major problem in the more affluent societies, was rapidly becoming a challenge in India also, he said. Dr K.L. Wig, President of the Delhi Medical Association, welcoming the Health Minister, pointed out that rheumatic heart disease was the common form of heart ailment in the poorer section of the population.

Dr F.J. Lovan, Director of WHO in India, read a message from the Regional Director of WHO,

emphasizing the need for co-operation between medical, para-medical and public health personnel to control heart disease.

A team of cardiologists, led by Dr Sujoy B. Roy, which included Dr M.L. Bhatia, Dr (Mrs) S. Gadhoke, Dr R. Tandon and Dr Meharban Singh, later discussed heart disease in birth infancy, adolescence, adult lives and old age.

Causation and preventive aspects of rheumatic fever, congenital heart disease, high blood pressure and coronary artery disease were discussed in detail.

Dr Roy summed up the discussion by telling the public that heart was a very strong organ, and took a lot of "insult" before it succumbed to such ailments as coronary artery disease.

His advice for protecting the heart included physical exercise, giving up cigarette smoking, avoiding rich fatty food and a more philosophical approach to the job.

#### Heart Exhibition

The President opened an Exhibition on "Your Heart is Your Health" organized by the Central Health Education Bureau at Maulana Azad Medical College, New Delhi. On display were plastic models showing the causes, treatment and preventive aspects of the various heart diseases. Diagrams and photographs explained the disorders which afflict

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#### NO STATISTICS AVAILABLE

ACCORDING to the cardiologists of the Delhi Medical Association there was no way of finding out whether the incidence of coronary heart disease was on the increase since no statistics were available. But the doctors agreed that there was definitely an increase in rheumatic heart disease. The ideal way to prevent rheumatic heart disease in children is to examine the culture of sore throats and begin penicillin treatment, if it is a streptococcus infection, the doctors said.

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the heart. The exhibition attracted a large number of people who were given information on the various aspects of the disease, its causes and the measures to be taken to prevent its occurrence and recurrence. Earlier, a Press Conference was held at Maulana Azad Medical College which was addressed by Dr S. Padmavati, and Dr B.S. Sehgal, Director, Central Health Education Bureau. The dangers of the growing incidence of the disease in India was highlighted in the Conference. Dr Padmavati explained in detail the status of rheumatic heart disease in India and the protection and treatment measures taken for the disease. Dr Sehgal explained the role of educating the people which was of particular importance in the disease like those of heart. The Press men were also given the pre-view of the Exhibition on Heart organized by the Bureau.

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#### HEART CARE EQUIPMENT FOR GENERAL HOSPITAL

AN intensive heart-care equipment installed at a cost of Rs 15 lakhs is one of the special features of the Institute of Cardiology inaugurated in the General Hospital by the Chief Minister of Tamil Nadu on 7 April, 1972.

The K-ray diagnostic unit consisting of highly sophisticated equipment, set up by Philips India, includes a high-powered bi-plane X-ray system which allows for easy diagnosis-oriented X-ray pictures, and memory loop recorder. The X-ray image intensifier and medical television system help reduce X-ray dose to the patient, while allowing the team of medical specialists to participate in the treatment.

The medical video recording and 35 mm cine camera record the entire examination procedure for after-study and analysis. Constant surveillance of critically sick patients with minute-to-minute display of the condition of the patient is possible with this equipment. Heart rate blood pressure, electrocardiogram pulse and temperature—all are displayed on meters and oscilloscopes for the convenience of the doctor.

A single nurse could constantly check the condition of up to four or eight patients from a central monitoring station.

## CHANGING TRENDS IN MEDICAL EDUCATION

It is generally believed that scientific knowledge in order to be useful should be recent and up-to-date. There is a tendency, therefore, that in order to make one's scientific knowledge to be of any value, one must not bother about what older generation in sciences have said. This, however, cannot be said with authority in the case of medical education, because with the passing of time as the science develops, there is more tendency for references to observations rather than critical analysis. As centuries passed, books contained more and more observations, as did the developing medical journals. Earlier books, it has been found, contained satisfactory descriptions of cases while recent books offer detailed review of literature.

In order, therefore, to have clinical knowledge in medical education, it appears necessary to refer back for case materials to get a thorough clinical picture. A review of the entire literature on the subject would increase our understanding of the change in theories and treatment.

Comparative study is another very important thing. Study of other subjects also have become necessary to have a thorough comprehension in certain fields. All scientific developments effect the research and teaching of medicine.

### Understanding the Total Man

In psychiatry, the physician is confronted with the patient's problems, including philosophical, legal and cultural implications. Although the dominance of the humanities has gradually diminished, but the great scientific investigators and teachers in medicine possess a broad humanistic background and reveal an understanding of philosophy.

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## ENLARGING FRONTIERS OF UNDERSTANDING

The World Book Fair, organized by the National Book Trust in collaboration with the Federation of Publishers and Booksellers Association of India was held in New Delhi from 18 March to 4 April, 1972.

The President, Shri V.V. Giri, who inaugurated the Fair, said the appearance of books in printed form, following the invention of printing marked a momentous breakthrough in the history of human communication. The use of the printed book, as a medium of transmission of human thought had revolutionary impact on society, breaking down barriers and facilitating a cross-fertilization of ideas on a global scale. As mass media spread and developed in a variety of ways fears were expressed whether these would obliterate the place of the book in the life of man, but these fears have been falsified and books have retained their enduring place. We have to consider how books can be harnessed and mobilized to enlarge the frontiers of understanding and bring together in a spirit of harmony, the people of a divided and distracted world.

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"The rapidly expanding pharmacological approach to modern medicine is at once a relief and a burden to the practising physician", says Karger Gazette in course of an introduction to the new journal "Drugs". Drugs now appear in the market almost too quickly for the physician to familiarize himself with their names let alone distinguish their properties. Therefore, the harassed physician needs unbiased, authoritative and definitive information readily available in a co-ordinated and convenient system.

Therefore, for a total drug information, the medical man again cannot shut himself to his laboratory but must search, select and evaluate the current world of bio-medical literature, not through literature received by passing salesmen (although they are important).

—DR K.K. GHOSH

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*India is a country of villages. But the Medical Officers who are posted at the Primary Health Centres are not truly oriented towards rural medical and health problems. The Medical Council of India recommended three months' rural internship training for the fresh medical graduates with the object of exposing the young doctors to real life situations, giving them opportunities to explore rural health problems, and providing them the participating experience.*

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## VILLAGE CAMPS IN INTERNS TRAINING PROGRAMME

DR V.M. GUPTA and P.H. RAI

**T**HE Departments of Preventive and Social Medicine in various medical colleges in India are experimenting with rural internship training programme to make this training really meaningful. However, no definite framework has been formulated for these programmes.

The experience at Rural Health Centre, Cherai-gaon has shown that in spite of organizing the rural training to the best of one's efforts, some important and desired aspects are still left uncovered. The organization of camps of 5-6 day duration in remote villages helps to provide the fruitful exposure of these missing aspects. The Rural Health Centre of Department of Preventive and Social Medicine, Banaras Hindu University, Varanasi, organizes such village health camps from time to time with certain defined objectives for providing useful experiences to young trainee doctors.

### Preparing a New Community

The Camp Village being new to the participants, an attempt is made to prepare the community beforehand so that villagers may appreciate and utilize the various medical and health services during camping to their maximum advantage. Many a time the

villagers suspect that the visitors have come either for family planning work or with some bad motives. As such, prior mental preparation of the community and introduction of camping agency is necessary. One or two prior visits are made in the area and local social institutions like village Panchayats, youth clubs, and also other village leaders are contacted to get their social approval and co-operation. Many of their pre-determined misconceptions are clarified and motives of the camp are clearly explained in meetings or small group gatherings. Thus the whole procedure in which interns are well involved provide them with guiding principles in preparing a new community.

The significance of such experience can be viewed from another important angle, *i.e.*, in changing trends of medicine where clinical faculties are trying to come out from four walls of the hospital into the communities for conducting various research studies. And it is certain that community studies and services cannot be carried out successfully unless the community is prepared favourably. As such these preparing techniques are of great significance.

At times of natural calamities like floods or draught situations, the responsibilities of public



health staff increase considerably. During such calamities, organization of camps in the affected area will be beneficial to both the population as well as to trainee doctors participating in relief work.

In this connection, the Rural Health Centre, Cheraigaon, organized a camp in Dhab village, an inland of Ganges during floods, and another camp in draught affected area of Dudhi near Mirzapur. The activities of these camps included mass immunizations against cholera, typhoid, smallpox, disinfection of water sources, improvizations for excreta disposal under flood situations; medical relief including emergency services and distribution of food supplements procured from relief officer. The practical on the spot experience of witnessing public health problems and miseries during floods and organizing and improvizing such activities by co-ordinating with agencies like District Medical Officer of Health, Relief Officer, etc., can only be provided to young doctors by doing relief campings under such situations.

#### Organizing Health Exhibitions

Organizing exhibitions as a component of health education is an important feature of village camps. Selection of place for exhibition and organizing it within limited available resources of village and the centre and shaping it as an effective means of health education are some of the learning experiences for the doctors. Such experiences have great significance in the present context of national family planning programme, where vasectomy-cum-demonstration camps are being regularly organized in interior areas through primary health centres for popularizing family planning programme.

#### Preparing a Mobile Team

Poor means of communication and limited resources press us to function with mobile medical teams for the time being. The initiation of full-fledged mobile hospitals to be attached with some of the medical colleges (so far 12 such mobile hospitals have already been set up) is a step in this direction.

While organizing a village camp, of course on a much small-scale, the interns face various problems in preparing mobile kits for the camp and seek and try various alternatives and improvizations. For example, they have to see how they are going to carry their laboratory to the villages? What improviza-

#### MAJOR ACTIVITIES OF SOME OF THE CAMPS

<i>Camping Area</i>	<i>Year</i>	<i>Activities</i>
Dudhi Camp (Draught affected area)	1967	Inoculation against cholera, smallpox, medical care, distribution of food supplies.
Gopepur Village	1967	Vaccination drive against smallpox as an epidemic was in process, medical care. Village meeting. Visit of a lady doctor from Banaras Hindu University.
Dhab Camp (Flood affected area)	1968	Cholera-typhoid inoculations. Disinfection of wells. Medical care. Distribution of relief material like food supplements, blankets, etc.
Bhujahua Camp	1969	Vaccination in the village and school. Health education in school. Medical care. Laboratory services. Vasectomy and hydrocele operations. Short-term study.
Chandrawati Camps	1970 and 1971	Medical care. Laboratory service. M.C.H. care. Vaccination against smallpox. Health exhibition. School health education. Tracing of T.B. and leprosy care. Film show. Discussion with <i>ojhas</i> (Magic healers)

tions they would make in preparing a minor operation table for attending to emergencies? What are the drugs and equipments they would like to take to a camp? And in what way they are going to seek cooperation of the village so that villagers may take the camp as their own programme. Certainly these experiences are of immense value and cannot be imparted either in a hospital or in a class room.

#### Camp Sanitation

These visits provide good demonstration of camp sanitation as to how temporary latrines can be installed, how well water is protected by disinfection and proper storage and how temporary kitchen is made with proper kitchen hygiene and waste water disposal, etc.

(Contd. on page 220)

# TREATMENT OF EYE PATIENTS

## ROLE OF SOCIAL ORGANIZATIONS

DR S.P. MATHUR

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The role of social organizations in the treatment of the diseased is well-known. In 1969, when a temporary camp for the treatment of eye patients (for a period of five months) was organized in Ajmer, the social organizations provided a big helping hand to make the camp a success. The way in which the various Government and social bodies at Ajmer have given their help to make this work a real success deserves mentioning in some detail with the hope that similar camps may beneficially be organized in other places too.

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**T**HE population of Ajmer is rapidly increasing, while the increase in the hospital facilities does not keep pace with it. In view of this, more and more unqualified medical practitioners are thriving in the town and causing a serious concern to the health authorities. Patients for eye operations, mainly for removal of cataract, in Northern India, prefer the winter season, and every hospital, Government or private, has to accommodate patients to its maximum possible capacity, and has subsequently to maintain a 'waiting list' for admissions for operations. This is certainly most inconvenient to the majority of the patients who come for the removal of their cataracts from adjoining rural areas. In the absence of any arrangements for their stay in the city while waiting for their turn for admission to the hospital, they have usually to return home. This gives an opportunity to quacks to hold eye operation camps,

and subject these ignorant people to the hazards of unscientific treatment in unsuitable temporary accommodation.

### Bed-Patient Ratio

Ajmer town has a population of about 3.5 lakhs. The medical college hospital gets grants from the Government of Rajasthan sufficient for only 600 beds whereas more than 700 patients get treatment at a time on these beds in the wards. The Eye Department has only 32 beds which is too small a number to cater to the needs of the city and areas around. A large number of the patients cannot be accommodated for operation particularly during the winter rush. It is believed, that in the past there were at least two unqualified practitioners undertaking eye operations, and at least five quacks used to come to the city and hold eye operation camp. Cases which developed complications as a result of these camps have to be admitted to the hospital as emergencies, thus blocking a large number of beds which would otherwise have been available for properly performed operations.

The only solution to this problem was to arrange for more beds in the hospital campus particularly during the winter season, from November to March, without involving any increase in the staff or the Government grants, or the building.

A request was made to various Government and Social Organizations for their help in overcoming these handicaps temporarily. Thus large double-fly cosy tents were provided by Central Reserve Police (C.R.P.) and were pitched by the side of the Eye Department. They were big enough to accommodate 40 beds, 20 each for male and female patients. A tent was provided for kitchen, and two more for male and female attendants, and the patients

waiting for beds falling vacant. Forty iron beds were also provided by the C.R.P. and a guard of C.R.P. looked after all these arrangements.

Para-medical staff was provided by the Army Medical Corps Battalion stationed at Ajmer. Temporary sanitary facilities were provided by the Municipal Council, Ajmer.

Powdered milk for the patients was donated by local missionary organization. For meeting the cost of medicines, cataract glasses, green shades, food for patients and attendants, and for providing personal care, a number of local social organizations came forward to undertake these responsibilities for one month. Thus while the camp continued and patients were treated uninterruptedly for a period of five months, from November 1969 to March 1970, five social organizations took their turns for one month each.

To provide suitable diversion for the attendants of the patients, arrangements were made for supply of magazines and periodicals in their tents. Posters on "Prevention of Blindness" were displayed.

These 40 temporary beds for all clinical purposes formed an integral part of the beds available for the Department of Ophthalmology, together with the 32 permanent ones. Admissions were made through the regular Out-patients Department, and all the patients had the benefit of the routine laboratory investigations. All were operated in the departmental operation theatre and transported to tents on a trolley. The operations were performed on the usual three days in a week, and during the four or five hours per day work, not more than 30 operations were undertaken. If there were more patients, they had to wait for the next operation day, and were in the meantime, accommodated in the tents for attendants. A cataract patient was usually discharged on the 5th day of operation with a bandage on. He returned for a check-up on the 10th day, when the bandage was removed, and a green shade and cataract glasses were given. On the 15th day the patient came up for another check-up, and corneal sutures were removed if they were still there.

The duration of stay of a patient in these camps depended upon the nature of operation. Those for keratoplasty and detachment surgery

had necessarily to stay longer, while those for extra ocular surgery could do with a shorter stay. Thus with these 40 beds available in tents, we were able to operate on an average 225 more patients per month.

The social organizations who had to meet the cost of food for patients and attendants, medicines, cataract glasses and green shades, spent about Rs 1200 per month each. Their members also provided personal attention and individual service to the patient by serving food personally and looking after their comfort generally. A good majority of the patients were brought to the camps by the members of the social organizations from the section of population known to their workers, and they provided a happy liaison between the patient and the hospital. Five social organizations worked during the five months, and thus a large cross-section of the population of the town and neighbouring villages derived benefit from this camp.

#### A Successful Experiment

According to the available hospital records, it was found out that during 1966-67, there were at least 42 cases admitted to the eye ward for complications arising as a result of operations performed outside the hospital. During 1967-68 there were 53 such cases. In 1968-69, there were only 11 cases and since November 1969 till May 1971 there has been no such case.

The holding of such a camp proved to be a successful experiment. A similar camp was again started from 1st November 1970 to March 1971. The benefits resulting from these camps are that a large number of patients have been saved from complication arising from quackery which has not been eliminated from the town and the adjoining rural areas.

Experience shows that the only difference between the patients in the wards and those in the tents is of accommodation alone.

The facilities for operation, treatment and nursing are the same as in the eye ward nearby.

The experiment has been a success due to the active participation of the various Government/semi-Government bodies, local social organizations and their workers. □

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## ON FAMILY PLANNING

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### NON-OFFICIAL AGENCIES TO EVALUATE FAMILY PLANNING

**T**HE two-day Seminar of Social Scientists on Family Planning held in New Delhi on 25-26, March, 1972, urged the Government to entrust evaluation of family planning programme to non-official agencies. This, the Seminar felt, was not applicable to only family planning but to many other allied fields.

The Seminar, which was inaugurated by the Minister of State for Health and Family Planning, Prof. D.P. Chattopadhyaya, was attended by over 50 scientists, economists and academicians from various Universities and institutes all over the country.

Decentralization of functions in the Ministry and more powers for the States, *Panchayats*, and local bodies were also recommended.

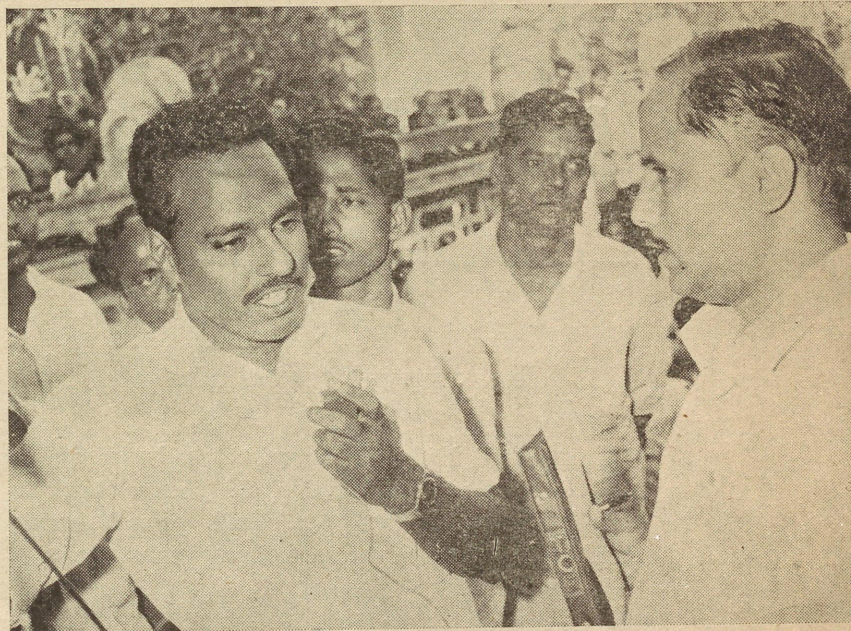
There was a consensus that sex education should be available to young people and the Seminar was happy to note that the Department of Family Planning had already taken up this matter with the Ministry of Education.

The Seminar felt that fundamental research and population growth, communication and social development should be encouraged to replace the vested bias in foreign expertise.

The Seminar was of the view that there had been too much emphasis on financial incentives and that it was necessary to work out alternate schemes for motivation.

It was recommended that because of a diverse cultural pattern in the country, there could not be a uniform system for motivation all over the country. It had to take into account regional variations in devising strategy for family planning motivation.

July 1972



**TOP MARKS IN FAMILY PLANNING MOTIVATION :** Shri P.K. Vaithyalingam, Village Munsif, Pootharai Village in Tamil Nadu, successfully motivated all the eligible fathers in the village for vasectomy operation. Photo shows Shri Vaithyalingam being interviewed.

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### SALE OF NIRODH GOES UP

**N**EARLY 62.5 million pieces of Nirodh were sold during 1971-72 (up to February 1972). Sales during the same period last year were nearly 52.7 million pieces.

The highest sale was recorded in West Bengal (11.75 million pieces) followed by Uttar Pradesh (9.88) and Tamil Nadu (6.12).

Distribution of Nirodh in the States and the Union Territories is arranged through six commercial agencies having a network of retail outlets. The agencies are : Brooke Bond, Hindustan Lever, Indian Tobacco, Liptons, Tata Oil Mills and Union Carbide. The highest percentage of increase in sale this year was achieved by Tata Oil Mills followed by Union Carbide and Hindustan Lever.

Tamil Nadu had the largest number of retail outlets (34022) followed by Maharashtra (28730) and Gujarat (28252).

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# Around the states

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## TAMIL NADU

### *Expansion of Medical Facilities*

THE Tamil Nadu Government has drawn up a detailed plan to develop the Cancer Institute at Kancheepuram into a regional research centre and to extend the cancer control programme throughout the State.

This was revealed on 17 March, 1972 in the Assembly by Shri K. Anbazhagan, Health Minister, while moving the demand for grants relating to public health and medical departments.

For treatment of TB, the Minister said, the Government had already sanctioned opening of 25-bed isolation wards in the Headquarters Hospitals at Ramanathapuram and Tuticorin. During 1972-73, two more such wards would be sanctioned—one at Nagapattinam and another at Krishnagiri at a cost of Rs 3.07 lakhs.

Shri Anbazhagan said the Government had proposed to establish mobile ophthalmic units in Madras and Madurai to cater to the needs of villagers within a radius of 160 km or more from the two cities and to propagate methods of protecting the eye from ailments.

Among the new schemes proposed for the coming year are : construction of a 32-bed ward in the hospitals at Kumbakonam, Tenkasi, Tirupathur and Athur; opening of dental clinics in 15 taluk headquarters hospitals; and setting up of X-ray blocks in eight hospitals and a chest clinic at Villupuram. The headquarters of the District Medical Officer would be shifted from Coimbatore to Erode. Shri Anbazhagan said Rs 15 lakhs would be spent on improvements to medical colleges in Madras, Thanjavur and Madurai. He announced that a one-year diploma course in Psychological Medicine with

a total intake of 12 candidates, would be started in the Madras Medical College and the Madurai Medical College from April this year.

As for indigenous medicine, the Minister said there was a proposal to open five more Siddha units attached to District Hospitals and one dispensary in State Electricity Board's administrative office in Mount Road. The Hindu Religious Endowments Board had sanctioned 14 Siddha dispensaries in Thanjavur District and six more were being organized in other Districts. He said it was planned to put up a first floor over the in-patient block in the Indigenous Medicine Hospital at Arumbakkam to accommodate 25 more beds at a cost of Rs one lakh.

### **Medicinal Farm**

Shri Anbazhagan said the Government was examining the question of setting up a medicinal farm in some other part of the State.

### *M.D. in Social Medicine*

THE Academic Council of the University of Madras at its meeting held on 9 March, 1972 approved the recommendations of the Board of Studies in Medicine (Post-graduate) to institute two new branches for M.D. in Social and Preventive Medicine and Haematology.

## DELHI

### *Need for Trained Health Administrators*

THE need to provide trained health administrators with community-based health care to render satisfactory medical and health services to the large Indian population living in rural areas was stressed by Prof. D.P. Chattopadhyaya, Union Minister of State for Health and Family Planning.

Prof. Chattopadhyaya was presiding over the annual day function of the National Institute of Health Administration and Education (NIHAE) in New Delhi on 14 April, 1972.

“Though we can rightly feel proud of our achievements in controlling morbidity, mortality and the population growth, the real service to the community can be achieved only if the health trainers are themselves sufficiently motivated in the right direction”, he said.

A medical administrator today was required to plan and organize various activities under him and it was in this field that the Institute had initiated a number of staff college courses for health administrators, Prof. Chattopadhyaya said.

The rising expectations of the community for better hospital facilities, Prof. Chattopadhyaya said, had to be met by making the best utilization of available resources. He called upon hospital administrators to undertake performance budgeting, allot optimum workload to the medical and para-medical personnel and take measures for proper material management.

He commended the work of the Institute in preparing a report on the working of the CGHS dispensaries in Delhi and assured that the Government were considering measures to remove disparities obtaining in the services rendered to different sections of the community.

Earlier, the Director of the Institute, Dr. A. Timmappaya, in his annual report, outlined the highlights of various seminars and workshops organized in the course of the year.

Prof. P.N. Chhuttani, Director, Post-graduate Institute of Medical Education and Research, Chandigarh, delivered the Annual Oration.

### *Six Emeritus Medical Scientists Selected*

**T**HE Indian Council of Medical Research has selected six leading medical scientists as Emeritus Medical Scientists for two years from 1972.

These Emeritus Scientists carry on research work in their special fields at a central institute/laboratory or other organizations where facilities are available.

The scientists are : Dr C.W. Chacko, Ex-serologist, Central V.D. Reference Laboratory and Ex-Prof. of Serology, Institute of Venereology, Madras Medical College, Madras; Dr B.N. Balakrishna Rao, Ex-Prof. and Head of the Department of Surgery, All India Institute of Medical Sciences,

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## LETTER TO THE EDITOR

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**Question :** My wife gave birth to a dead macerated child in her first delivery few months back. Later we had blood tests whose results are as under :

	W.R. test	V.D.R.L.	R.H. Factor
Husband	Negative	Negative	Positive
Wife	Negative	Negative	Positive

Thus the mystery of still birth remains as it was. Now my wife is suspected to have been infected with *trichomonas vaginalis* before and during pregnancy. Could this infection be a cause for still-birth ?

**Answer :** Though the most common cause for a woman getting macerated child is due to blood infections and R.H. factor, yet there are other causes such as anaemia, diabetes, toxæmia of pregnancy, etc. So next time when your wife conceives, consult a woman doctor and keep her under constant care of a doctor specially during later months of pregnancy. *Trichomonas vaginalis* infection cannot be the cause of still birth.

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New Delhi; Dr Inderjit Singh, Ex-Prof. and Head of the Department of Physiology, S.N. Medical College, Agra; Dr M.N. Rao, Ex-Director, All India Institute of Hygiene and Public Health, Calcutta; Dr R.M. Kasliwal, Ex-Principal and Emeritus Professor, S.M.S. Medical College, Jaipur; and Dr N.G.S. Raghavan, Ex-Director, National Institute of Communicable Diseases, Delhi.

The scientists will receive an honorarium and contingent grant for pursuing research.

## PREVENTION OF HEART DISEASE—(Contd. from page 201)

the heart, you must reduce your weight. It is said "If you carry much weight on you, you will only carry it for a shorter time".

*Q. What is the effect of cigarette smoking on the heart ?*

*A.* Persons who smoke more than 20 cigarettes a day are more likely to get a heart attack. This has been shown conclusively by statistics. Pipe and cigar smokers do not carry more risk than non-smokers.

*Q. Is a diabetic more prone to heart attack ?*

*A.* In diabetics, the incidence of heart attacks are more common than in non-diabetics. These attacks tend to be less in well controlled diabetics.

## PUT BACK THOSE MISSING ENZYMES—(Contd. from page 207)

those lipids constituting the walls of liposomes. When this destruction of liposomes occurs, the entrapped enzyme is set free ready to act. Eventually of course the supplied enzyme itself can be attacked by lysosomal enzymes but there is good evidence that this happens slowly.

The available data suggest that liposomes are promising as vehicles for the transport of enzymes to liver and spleen and so give reason to be hopeful about treatment for many of the storage diseases in which liver and spleen are involved. Liposomes

Hence diabetic persons should seek medical help to keep their blood sugar at normal levels, by correct diet, drugs or insulin.

*Q. What is rheumatic heart disease ? How can it be prevented ?*

*A.* Rheumatic fever occurs in children between the ages of five and fifteen and usually follows an attack of sore throat. The heart gets affected in most cases. With each recurrence of fever, the heart tends to get damaged more. Hence one should institute measures to prevent further attacks of rheumatic fever. This is easily done by giving to the child a monthly injection of long acting penicillin till the age of 20. □

can carry enzymes safely to the target tissue and deliver them right inside the lysosomes loaded with material waiting to be digested. Digestion will presumably begin soon after the liberation of the enzyme following destruction of liposomes.

### Experiments with Rats

Whether the enzyme will actually attack the stored material as easily as it does it in the test tube is unknown but experiments are in progress in which we are attempting to produce a "storage disease" in rats. □

## VILLAGE CAMPS IN INTERN TRAINING PROGRAMME—(Contd. from page 214)

Apart from these learning and participating experiences, the interns are involved in many other activities: (1) A meeting of *Ojhas* of the area was arranged in Chandrawati Camp by taking these traditional healers into confidence. It was interesting to know their concepts about health and disease with the aim of knowing to what extent and in which way peoples beliefs on their magico-religious therapies can be weakened and also to explore the possibilities of utilizing them for positive health programmes. (2) Some short exploratory studies can also be made, as for example in Bhujahua camp, a study was planned and conducted to elicit the condition of vital statistics reporting in the area.

Mass meetings of villagers where views are

exchanged can be arranged during night hours. These gatherings can be utilized for giving health education through interesting flannelograph stories. The school of camping village is also visited and health education demonstrations are given to children. Educational and documentary film shows can be arranged and it will be interesting to observe from what angle the villagers perceive this media of health education.

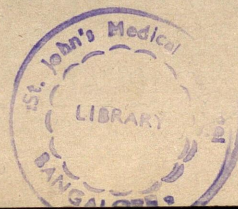
Thus camps organized periodically in remote rural areas are useful in providing additional learning experiences from practical aspect to the young interns which otherwise is not possible through routine village programmes in their training period. □

# INSTITUTIONS FOR COURSES IN PHARMACY

We are publishing below a list of institutions providing facilities in Pharmacy. The list will be of particular interest to our readers who desire to enter into a Career in Pharmacy. (For details, please see SWASTH HIND, March 1972, which published detailed information on "Careers in Pharmacy").

## LIST OF INSTITUTIONS PROVIDING DIPLOMA IN PHARMACY

<i>Sl. No.</i>	<i>Name of Institution</i>	<i>No. of seats</i>	<i>Course Conducting Authority</i>	<i>Examination Conducting Authority</i>
1	2	3	4	5
*1.	Kamala Nehru Women Polytechnic, Mukarram Jahi Road, HYDERABAD (Andhra Pradesh)	50	Exhibition Society, Hyderabad	State Board of Technical Education and Training, Andhra Pradesh, Hyderabad
*2.	Government Polytechnic for Women, KAKINADA-2 (Andhra Pradesh)	30	State Government	—do—
*3.	Government Polytechnic, HYDERABAD (Andhra Pradesh)	20	—do—	—do—
*4.	Government Polytechnic, VISAKHAPATNAM (Andhra Pradesh)	20	—do—	—do—
*5.	S.V. Government Polytechnic, TIRUPATI (Andhra Pradesh)	30	—do—	—do—
*6.	Institute of Pharmacy, Assam Medical College, DIBRUGARH	50	—do—	Dibrugarh University, Dibrugarh
*7.	Pharmacy School, Gulzarbagh, Agam Kuan, PATNA (Bihar)	100	—do—	State Government
*8.	L.M. College of Pharmacy, Navrangpura, AHMEDABAD-9 (Gujarat)	160	Board of Management L.M. College of Pharmacy, Ahmedabad	Gujarat University, Ahmedabad
*9.	Medical College, ROHTAK (Haryana)	70	State Government	Punjab University, Chandigarh
*10.	Government Polytechnic for Women, AMBALA (Haryana)	30	—do—	Director of Industrial Training, Haryana, Chandigarh
*11.	Calicut Medical College, CALICUT (Kerala)	60	—do—	State Government
*12.	S.V. Government Polytechnic, BHOPAL (Madhya Pradesh)	30	—do—	Board of Technical Education, Madhya Pradesh, Bhopal
*13.	Madras Medical College, Park Town, MADRAS (Tamil Nadu)	30	—do—	Board of Examiners (State Government)
*14.	Madurai Medical College, MADURAI (Tamil Nadu)	100	—do—	—do—
*15.	Christian Medical College, VELLORE (Tamil Nadu)	20	Christian Medical College Association	Board of Examiners



1	2	3	4	5
*16.	Government Polytechnic, KARAD, P.O. Udyamnagar, Distt. Satara (Maharashtra State)	60	State Government	Board of Technical Examinations, Maharashtra State, Bombay
*17.	Government Polytechnic, JALGAON (Maharashtra State)	60	State Government	—do—
*18.	Government Polytechnic, AMRAVATI (Maharashtra State)	60	—do—	—do—
*19.	Poona College of Pharmacy, Sai Krupai, 122, Bhawani Path, POONA-2. (Maharashtra State)	40	Indian Pharmaceuti- cal Association (Poona Branch)	—do—
*20.	Government College of Pharmacy, BANGALORE (Mysore)	60	State Government	Board of Examining Authority appointed by Government of Mysore
*21.	Kasturba Medical College, MANIPAL (Mysore)	50	Academy of General Education, Manipal	—do—
*22.	V.L. College of Pharmacy, RAICHUR (Mysore)	60	State Government	—do—
*23.	National Education Society's Institute of Pharmacy, SHIMOGA (Mysore)	30	—do—	—do—
*24.	School of Pharmacy, BELGAUM (Mysore)	30	Karnatak Liberal Education Society	—do—
*25.	S.C.B. Medical College, CUTTACK (Orissa)	64	State Government	Examination Committee for Diploma in Pharma- cy course appointed by the Government of Orissa
*26.	Government Medical College, PATIALA (Punjab)	70	—do—	Punjabi University, Patiala
*27.	Medical College, AMRITSAR (Punjab)	80	—do—	Punjab University, Chandigarh
*28.	Government Polytechnic for Women CHANDIGARH (Union Territory)	30	Director of Technical Education, Chandigarh	Punjab University, Chandigarh
*29.	G.S.V.M. Medical College, KANPUR (Uttar Pradesh)	60	State Government	State Medical Faculty of Uttar Pradesh, Lucknow
30.	M.L.N. Medical College, ALLAHABAD (Uttar Pradesh)	60	—do—	State Medical Faculty of Uttar Pradesh, Lucknow

1	2	3	4	5
*31.	Pharmacy Training Centre, JALPAIGURI (West Bengal)	50	State Government	State Medical Faculty of West Bengal, Calcutta
*32.	Department of Commerce & Pharmacy, I.T.I. Pusa Campus, NEW DELHI (Union Territory)	60	Delhi Administration	Board of Technical Education, Delhi
*33.	Goa College of Pharmacy, PANAJI (Goa)	20	State Government	State Government
*34.	Armed Forces Medical College, Poona	30	Directorate General of Armed Forces Medical Services, Ministry of Defence DHQ, New Delhi	Directorate General of Armed Forces Medical Services, Ministry of Defence, DHQ, New Delhi
35.	Shri Mohan Lal Narain Das College of Pharmacy, CAMBAY (Gujarat)	70	Private Management	Gujarat University
36.	College of Pharmacy, ULHASNAGAR, Distt. Thana (Maharashtra)	30	The Hyderabad (Sind) National Collegiate Board	University of Poona
37.	Government Polytechnic for Women, JULLUNDUR (Punjab)	30	State Government	State Board of Technical Education, Punjab
38.	Indian Institute of Pharmacy, Arya Kumar Road, PATNA	100	Private Management	Director of Health Services, Bihar

\*Approved by the Pharmacy Council of India for qualifying as Pharmacist and registration under the Pharmacy Act, 1948.

Duration of the course — 2 years.

LIST OF INSTITUTIONS PROVIDING DEGREE AND POST-GRADUATE  
COURSE IN PHARMACY

Sl. No.	Name of the Institution	No. of seats	Course Conducting Authority	Examination Conducting Authority
1	2	3	4	5
@1.	Department of Pharmacy, University College of Science & Technology, Andhra University, WALTAIR (Andhra Pradesh)	30	State Government	Andhra University Waltair
*@2.	L.M. College of Pharmacy, University Campus, AHMEDABAD (Gujarat)	75	Board of Manage- ment (Private)	Gujarat University
3.	Shri Mohan Lal Narain Das College of Pharmacy, Bethak Road, Post Box No. 20, CAMBAY (Distt. Kaira) (Gujarat)	30	Khambhat Taluka Sarvajanic Kelavani Mandel (Private)	Gujarat University

1	2	3	4	5
	4. Medical College, TRIVANDRUM-11 (Kerala)	25	State Government	Kerala University
*@	5. Department of Pharmacy, University of Saugar, SAGAR (Madhya Pradesh)	32	University of Saugar, Sagar	University of Saugar Sagar
*@	6. Madras Medical College, Park Town, MADRAS (Tamil Nadu)	35	State Government	Madras University
*	7. Madurai Medical College, MADURAI (Tamil Nadu)	35	—do—	Madurai University
	8. Bombay College of Pharmacy, Kalina, BOMBAY-29 AS	30	Indian Pharma- ceutical Association (M.S. Branch)	Bombay University
	9. Department of Chemical Technology, University of Bombay, Matunga Road, BOMBAY-19 (Maharashtra State)	15	University of Bombay Bombay	—do—
	10. College of Pharmacy, opp : Ulhasnagar Station, ULHASNAGAR-3 Distt. Thana, (Maharashtra State)	30	Hyderabad (Sind) National Collegiate Board	Poona University
	11. University Department of Pharmacy, Nagpur University, NAGPUR (Maharashtra State)	34	Nagpur University Nagpur	Nagpur University Nagpur
	12. College of Engineering, KARAD (Maharashtra State)	30	State Government	Shivaji University Kolhapur
	13. Government College of Pharmacy, BANGALORE (Mysore)	30	State Government	Bangalore University
*	14. Kasturba Medical College, MANIPAL (Mysore)	32	Academy of General Education, Manipal	Mysore University Mysore
*@	15. Birla Institute of Technology and Science, PILANI (Rajasthan)	30	Birla Educational Trust	Birla Institute of Technology and Science
*@	16. Department of Pharmaceutics, Banaras Hindu University, VARANASI (Uttar Pradesh)	24	Central Government & University	Banaras Hindu University
@	17. Department of Pharmacy, Jadavpur University, CALCUTTA (West Bengal)	45	Jadavpur University Calcutta	Jadavpur University Calcutta
*@	18. Department of Pharmacy, Punjab University, CHANDIGARH (Union Territory)	25	Punjab University	Punjab University
	19. Goa College of Pharmacy, PANAJI-GOA (Union Territory)	20	State Government	Bombay University

\*B. Pharm. approved by the Pharmacy Council of India for the purpose of registration under the Pharmacy Act, 1948.

@ Post-graduate education is also imparted by these institutions.

## DR B.C. ROY NATIONAL AWARD FUND 1972

**T**HE Management Committee of Dr B.C. Roy National Award Fund, Registered under the Societies Registration Act, 1860, invites nominations for 1972 Awards in the following categories :

1. To recognize the merit of a good and capable teacher in General Medicine.
2. To recognize the best talents in encouraging the development of specialities in different branches of Medicine.
3. To recognize the best services in the field of socio-medical relief and in the establishment of medical organizations and medical institutions.

Blank nomination forms can be obtained from the Secretary, Dr B.C. Roy National Award Fund, Office of the Medical Council of India, Temple Lane, Kotla Road, New Delhi-1. The completed nominations should reach him by 15 October, 1972.

In addition to the above, the Management Committee has decided to give aid to two deserving Research Projects in the medical colleges/institutions which are conducting research in (i) Communicable Diseases, and (ii) Allergy.

The Management Committee has also invited applications for grant of one fellowship for post-graduate studies for two years at the rate of Rs 300 per month.

The medical colleges/institutions may forward the Research Schemes and applications for fellowship. The last date for the receipt of the Research Schemes/applications is 15 October, 1972.

## THIRD SILVER JUBILEE RESEARCH AWARD 1974

**T**HE Management Committee of the Medical Council of India has decided to make its Third Award in 1974 and the Award will be a cash prize of Rs 50,000 and a Gold Medal of the value of Rs 1,000 and will be given to one whose work in India is adjudged to be the best and original and which would be beneficial for the greater good of humanity at large.

The Silver Jubilee Research Award Fund had been created to encourage medical research in India and at present award is being given once in five years to those whose work in India is adjudged to be the best and original in the field of medicine and allied sciences.

The Nominations of the Award are now open and the Nomination Forms and all enquiries can be obtained from the Secretary, Medical Council of India, Silver Jubilee Research Award Fund, Temple Lane, Kotla Road, New Delhi-1. The complete nominations are to be received by 30 May, 1973.

## TUBERCULOSIS ESSAY COMPETITION

**T**HE Tuberculosis Association of India will award a cash prize of Rs 500 to a Tuberculosis Worker, preferably below 45 years of age, for an original article (approximately 6,000 words) on a subject relating to tuberculosis in which he or she is specializing or has worked. Papers may be sent in quadruplicate to reach the Tuberculosis Association of India, 3, Redcross Road, New Delhi on or before 31st of October, 1972.

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**Kotla Marg, New Delhi-1.**