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# Swasth Hind

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WORLD HEALTH DAY NUMBER



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## OUR COVER

Out of India's two million blind, no fewer than 6,00,000 lose their sight before their 21st year. Most of these 6,00,000 become blind in the first five years of life. Have you ever thought what this means? To focus global attention on the problem of preventable blindness, the WHO has as its theme for the World Health Day this year: "Preserve Sight. Prevent Blindness". India joins many other countries in celebrating this Day on April 7.

Our cover shows a blind girl of the Rashtriya Andh Kanya Vidyalaya, New Delhi being assisted to learn the first steps in arithmetic.

Price 25 nP

# BLINDNESS IN INDIA

Dr H.V. Nema

Deputy Ophthalmologist  
and

Shri N.R. Parthasarathy

Statistician, Trachoma Control Pilot Project  
Aligarh

“ALL things respond to the call of rejoicing, all things gather where life is a song.”—It is the central truth of that sublime philosophy of existence which declares that greatest good is happiness and heaven is here now, if one has sight to see and thoughts to realise. The implications of losing sight strive too deep and reach too far to be grasped vicariously. The life of a blind becomes a mobile misery and most tragic affair of mankind. Moreover, intelligent understanding is clouded by half-truth, myth and emotionalism which distort objectivity. Thus blindness is worst of the disabilities that nature can impose upon man.

## Extent of Problem

Several international studies on the prevalence of blindness have been made. The International Association for Prevention of Blindness has published detailed information on the number of blind people in various countries based on a questionnaire sent to the National Associations and the data depict the number of blind per 100,000 population in countries. (Epidem. vital statist. Rep. 1953, 61-32).

It would appear from the following table that unfortunately the number of blind in India touches an alarming height. More than 2.5 million blind persons are expected to be present in the country. This represents the reckless human tragedy difficult to imagine and even difficult to understand. One can congratulate scientific world for the exploration of space and unparallel inventions, but it is a matter of great pity to watch its failure in wiping our sorrows, in triumphing the sight-losing maladies. Nevertheless, it still has a long way to go to prevent blindness in India, 80-90 per cent. of which is preventable.

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## PREVALENCE OF BLINDNESS IN VARIOUS COUNTRIES

Country	Year	Population in thousands	Blind persons per 100,000 population
Egypt	1937	15,921 (C)	545
India	1944	4,00,000 (E)	500
Japan	1947	49,844 (S)	406
Indonesia	1930	60,726 (C)	227
U.S.A.	1950	1,50,697 (C)	173
Mexico	1940	12,951 (C)	130
France	1946	39,830 (C)	107
Canada	1948	12,883 (R)	125
Australia	1933	6,630 (C)	59
Argentina	1935	12,000 (E)	56

C=Census  
E=Estimate  
R=Registration  
S=Special Survey

## Causes of Blindness

To know what causes blindness is to know in large measure how to prevent it? The glare, dust laden atmosphere with the predominance of flies and appalling poverty thrust the greatest strain on Indian eyes and make them vulnerable to various diseases. The main ocular maladies which are responsible for blindness in India may be summarised as trachoma and neglected conjunctivitis, ocular manifestations of smallpox, malnutrition, hazardous industrial and occupational injuries, cataract, glaucoma, squint, myopia, solar eclipse, hereditary ocular disorders and various retinopathies. Apart from these, the great toll of blindness is also due to ignorance, illiteracy, apathy and erroneous belief, which make the problem more critical. It is in a

large measure due to lack of understanding of even the preliminary and basic principles of personal and public hygiene, which are overshadowed by carelessness and superstitions.

### Prevention of Blindness

Although man's exploration of disease and its struggle for its conquest are as old as time, yet never in history has any generation seen much rapid advances in the prevention and treatment of ocular diseases as today. Unfortunately, our rural population could not draw any advantage out of it, either due to lack of medical facilities in villages or lack of self-enthusiasm and educational facilities to the masses in rural areas. With a view to know the prevalence of eye diseases in rural India, a country-wide survey on the topographical distribution of eye diseases was launched by Indian Council of Medical Research through the Trachoma Control Pilot Project—India, under the joint auspices of the Government of India—the World Health Organisation and the UNICEF in November 1958. The survey has been undertaken in the rural areas of all the States. Centrally-administered areas and urban areas were excluded from the study. It is complete in eleven States and is in progress in the States of Rajasthan, Punjab, Madhya Pradesh and Uttar Pradesh. The following table gives the estimate of economically blind persons (in both eyes) according to the data received from the various States.

<i>States</i>	<i>Economically blind (in both eyes) Persons per million population</i>
Andhra Pradesh	0.1523
Assam	0.1329
Bihar	0.3073
Gujarat	0.1566
Maharashtra	0.3033
Jammu & Kashmir	0.0139
Kerala	0.0530
Madhya Pradesh*	0.3739
Madras	0.1745
Mysore	0.3617
Orissa	0.1728
Punjab*	0.1241
Rajasthan*	0.1080
West Bengal	0.1061
Uttar Pradesh*	0.1061
<b>TOTAL</b>	<b>2.5404</b>

\*States where the survey is in progress

The estimate of blind population in India in 1944, according to the table on page 51 is two million. The recent survey findings of the Trachoma Control Pilot Project gives an estimate of 2.5 million only in rural areas and that too in fourteen States. If the Centrally-administered and urban areas are also included then the blind population in India will rise to the tune of three to 3.5 million. It has been found in the survey that the factors like socio-economic level, sanitation, literary status, attitudes and beliefs play a dominant role in the high prevalence of many eye diseases resulting in blindness.

The first step to combat the evil of blindness is by educating the masses by simple but easily grasped lessons of environmental sanitation and hygiene, care of eyes and eyesight and principles of balanced diet. It includes a basic programme of general periodic health check-up and specific eye examination of pre-school and school-going children. Before this, ante-natal care of mothers, proper maternity facilities and child welfare centres are of immense importance in counteracting the spread of infective ophthalmias, which lead to blindness. Timely vaccination of children is a golden gift to ward off the ocular disorders caused by smallpox.

Trachoma and ignored conjunctivitis are responsible for about 60 per cent. of preventable blindness in India, which can be brought under control by observing proper personal hygiene and giving active treatment with sulphas or antibiotics, or both in combination. The Trachoma Control Pilot Project has been exerting its best to evaluate the most economical, practical and effective method for the mass programme. The day of its achievement will be a landmark in the history of prevention of blindness.

The average Indian diet, in terms of calories, is so low that it saps the vitality of our people and lowers their resistance. Most of the children in cities or in villages suffer from malnutrition. Many cases of malnutrition are commonly seen with keratomalasia causing enormous incidences of the blindness in the country. The only way to control it is by providing them all the essential elements of diet, which are necessary for the restoration of sound health and normal eyes. It means raising the standard of living.



A WHO-assisted pilot project trachoma team centred at the Gandhi Eye Hospital in Aligarh is systematically working through the region, village by village, examining patients and organising antibiotic treatment

With the industrialisation of modern India, the percentage of occupational injuries leading to blindness have shot up to a remarkable degree. It is a burning problem of industrial ophthalmology to minimise the hazard in the best possible manner. Most of the occupational injuries can be avoided by wearing special masks or protective goggles of unsplinterable glass. The employers must instruct the workers about eye protection and should insist on the wearing of goggles and masks while working. "Safety first" posters and use of smokeless furnaces can restrict the misery to a marked degree.

#### Cataract

Cataract is the single major cause of curable blindness in India in advanced age-groups. There have been one million patients per year out of which only 20 per cent. get scientific surgical aid, and the rest

either undergo hypermaturity and other complications or fall victim to quacks. The best solution to this problem lies in an active legislation to prevent quackery and organization of required number of eye relief camps in our villages on scientific lines conducted by eye specialists.

Glaucoma is a serious disease affecting scores of Indians and causing most of the blindness. Our villagers are still ignorant of it and they misunderstand it for cataract. Many eyes can be saved by early diagnosis of the disease, quick operative interference or regular medication.

#### Superstitions

We have not been successful in shaking off our superstitions and age-old beliefs existing in the masses in regard to crossed eyes of children. This condition can be corrected with a remarkable

success, if proper advice is sought in childhood but very little is being done in this direction. A healthy dissemination of information and knowledge is needed in this connection amongst all classes—educated as well as uneducated in India.

More and more cases of short-sight are coming on record. The progress of this condition can be checked by adopting proper methods of reading and writing. In such cases if more outdoor lessons rather than usual class routine are given the handicap would never end in blindness. The other factors which have their role are correct posture, adequate lighting, bold letter books and the last but not the least balanced diet. It is worth mentioning that such individuals should seek the advice of eye surgeons and must implement their teachings in every day practice.

The blindness due to solar burns can be prevented if the health educators or social workers enlighten the masses in this regard. Hereditary ocular disorders and blinding retinopathies are still unsolved problems of modern ophthalmology which require earnest pains and research on the part of oculists.

#### **Rehabilitation of Blind**

Our problem does not come to an end only by taking steps to prevent blindness. India owes a difficult duty to deal with her more than three million expected blind persons. They create a major public health task and invite our humanitarian assistance. It is truism that any public assistance programme that goes so far only has public understanding and support.

Social treatment of blindness means to a public agency assistance to blind persons in adjusting themselves to society. The education and training of blind children should lead up to their living an occupation, which will not only give them a worthy place in the society but also enable them to achieve a decent standard. There is still a good deal of ignorance and prejudice against the employment of the blind; this must be counteracted by official and public education. There is a saying "Happiness comes from doing, from exerting one's creative faculties, whatever they may be and he who finds ample opportunities for fundamental expression needs no one's pity. Cooperate with the blind man, and you will both be stronger for it. Pity him, and you will both be weaker. Pity exhausts the giver and demoralises the recipient."

In conclusion, we would like to emphasize two points. First, it is of utmost urgency to establish blind rehabilitation centres in every district of India, where the blind may get occupational training. Secondly, regardless of other considerations it is of paramount importance that in the prevention of blindness, every effort be made to control the preventable ocular diseases in the best possible way. Measures to combat these diseases have already been initiated by the Government of India, the State Governments and local eye relief organisations with and without the support of international organisations.

But the problem is great and if our preventive measures should be effective, a separate organisation composed of ophthalmic surgeons, public health educators, philanthropists and social workers should be formed.

Sight is one of man's most precious possessions. Partial or total blindness will always remain a tragedy although one that can be mitigated by training which in some countries is enabling blind people to work and earn their living in competition with the sighted. The greater part of the world's blind however—millions of people—still have to suffer the additional distress of being an unproductive burden on their families or communities.

Yet more than half of the world's blindness is preventable. With proper treatment by drugs and surgery, sight could be restored to millions who are now losing it; preventive measures can ensure that in future the numbers of the blind will be a third or less of what they are today.

—Dr M.G. Candau

# EDUCATION OF THE BLIND IN INDIA

**Shri B.A. Nandagopaul**

**Principal, Government School for the Blind  
Poonamallee**

**O**NE of the most significant welfare services that is on the move in our country now is the welfare of the blind. The task is a stupendous one. It is a task of educating, training, and employing two million blind persons who have been relegated to the darkest dungeons of our society. Only a handful of the blind had the benefit of education till recently; and fewer still had the satisfaction of being self-supporting and self-respecting citizens.

Such a misery has been inflicted on the blind by the great misconceptions about the blind that developed through ages. It has been most conveniently assumed that nothing much can be done with or to a blind person. Even educationists did not take up their education seriously. Several institutions which went by the name of "Schools for the blind" were no better than mere asylums for the blind. The inmates entered such institutions for life irrespective of their age or abilities. The only qualification to gain admission was to be blind. No systematic attempt was made to impart the three R's nor much was done to build up their personality, to improve their ability, to enable them to earn and to fit them back into the society. Such institutions were happy if they had kept the body and soul of the blind person together for years on end.

Actually, we have a long tradition of blind welfare in our country. The first "school" was started in 1890's. Several "schools" have sprung up since throughout the length and breadth of our country. In 1944, there were 32 schools in our country with a total strength of 1,212. Still the matter of interest to any student of blind welfare was that several of these schools were not able to get their full strength. In 1944, 1,050 seats were vacant in those 32 schools. This clearly proves that these schools have not made themselves very popular with the general public. I personally feel that this reluctance of the public to

accept these schools was mainly due to the disapproval of the work done by them. No self-respecting parent would relegate his blind child to an asylum. Nor would he send a child to an institution where the child is not prepared for a respectable future.

## **Governmental Attention**

Since independence, the welfare of the blind has been receiving the attention of the Government of India and State Governments in a large measure. The Governments feel that the blind, just as any other person, have a right to get educated, trained and be allowed opportunities to be self-respecting citizen of the country. If sighted children should receive compulsory education to function properly as citizens in a democracy, it is all the more necessary for the blind children to get the advantage of education.

To start with, several educationists were sent overseas to study or to observe what was being done in the foreign countries for the blind. In 1955, a seminar was held at Mussoorie to find out the ways and means of improving the education of the blind. Practically, all the institutions of the blind in our country were represented. The results of such a seminar were far-reaching. It made all concerned to think afresh about the problem of education of the blind. They were all inspired with new ideals of education of the blind. Several facts regarding the possibilities of educating the blind with almost the same aim and objectives as those for the sighted children were brought home to the educationists of the Blind. In short, the old asylums were recommended to be reconstituted into regular "schools" in the proper sense of the term. The Government has since given several generous incentives to the voluntary agencies to improve the existing schools and to open new ones.

### Potentialities of Blind Child

It is safe to assume that a blind child is as normal as any other child except for vision. The other senses are likely to be as keen as those of any normal child. The intelligence of blind children is not far different from that of normal children. The blind children also have the same propensities and aspirations as those of their sighted brethren or sisters. But, unfortunately, by thoughtless reaction of the general public, the blind are forced to withdraw themselves from society and to feel that their role in life is just to vegetate or to eak out their life by appealing to the mercy or compassion of others.

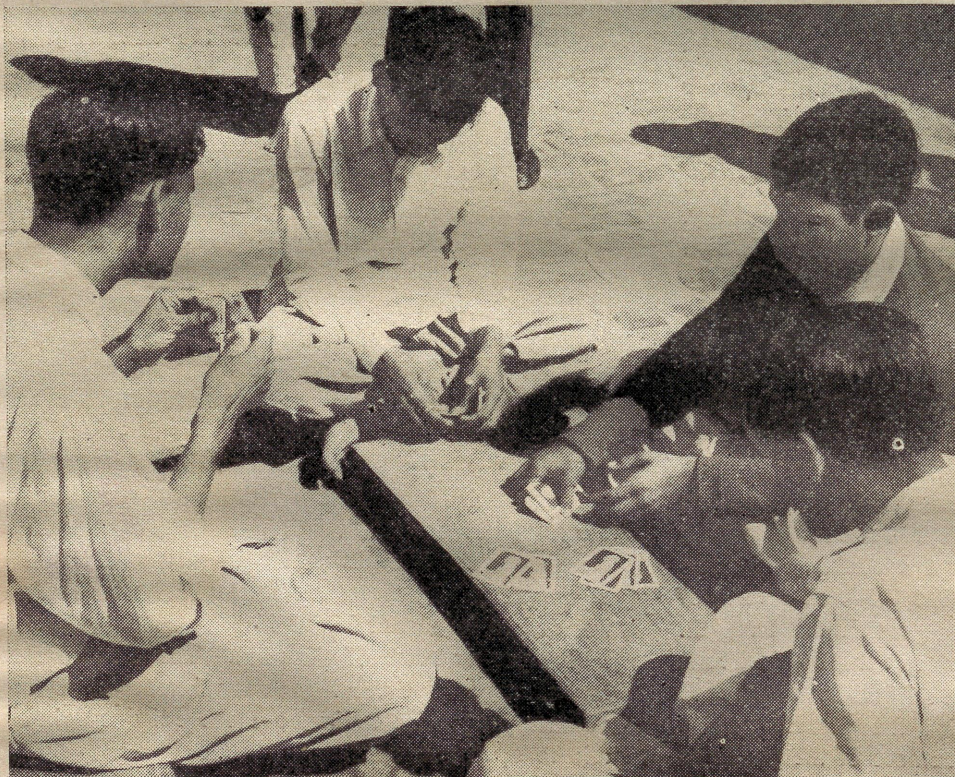
There is no reason whatsoever for any blind child to give up the struggle for existence on account of his blindness alone. The residual faculties and senses should enable most of the blind children to acquire enough knowledge and techniques which would enable them to earn a livelihood. They can lead dignified lives when they grow up. All that a blind child needs is proper explanation of the world in terms which do not involve sight. It is for this purpose that the imagination and sym-

pathy of an educator or an employer is to be evoked. Once the concepts are reduced to those of hearing or touch or smell, etc., the blind child is on par with the sighted if not better. A blind person needs training to identify things by their shape, texture, weight, smell, etc., whereas, a sighted person is trained to identify objects mostly by sight. It is a wonderful experience for several visitors of good schools for the blind to find the blind students even identify several plants by the feel of the leaves or their smell.

The modern schools for the blind are based on this principle. They have specially trained teachers who could train the other senses of the blind in such a way as to make good the loss of sight. Once the teacher gets an insight into the problem the whole process is both interesting and easy of achievement.

### Reading and Writing

Reading and writing is done by the blind by a special technique. An arbitrary code of raised dots was devised by a French man called Louis Braille to enable the blind to read and write. When he invented



Blind pupils are taught to play cards at the Blind Social Welfare Society, New Delhi



Blind students enacting a play for the terminal drama of the School for the Blind at Poonamallee

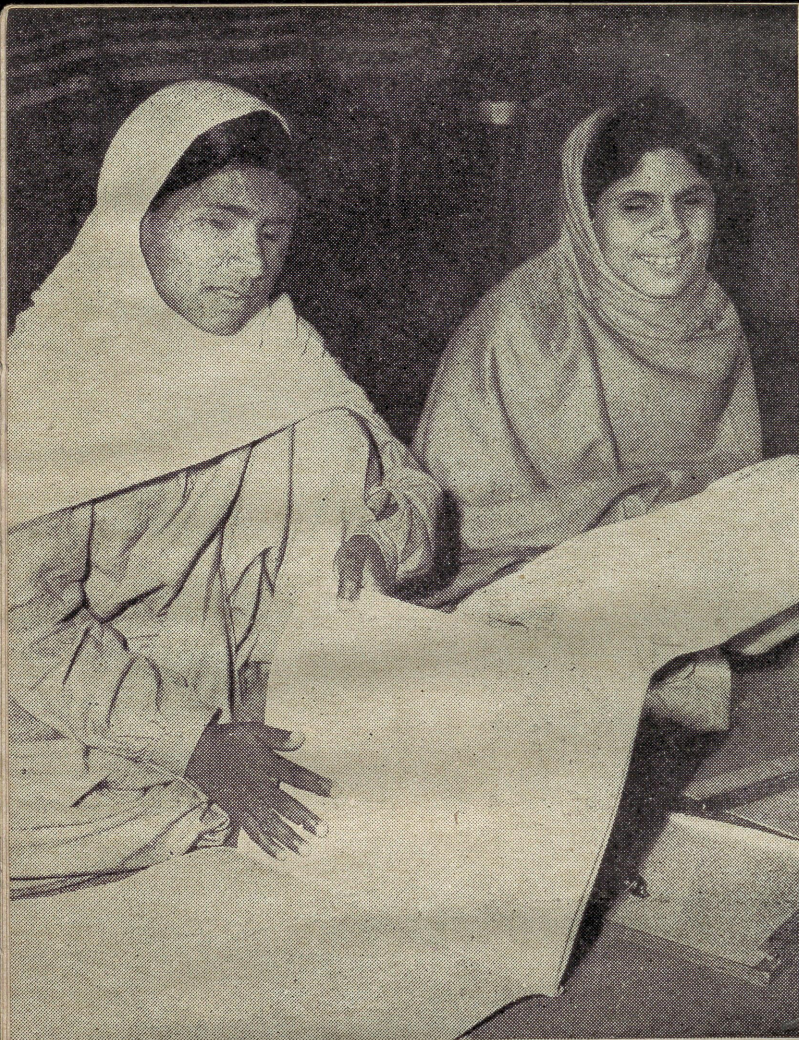
this code, he would not have even dreamt that it would be of universal acceptance. This system of raised dots is known as "Braille". The blind persons gently run their fingers along the raised dots, sense the patterns of the dots and read on. With the aid of a special apparatus they can easily emboss on any paper such Braille script also. There was a time when there were different systems of "Braille" for one and the same language even. Thanks to the direction of the Government of India, the various codes of Braille were unified into one, known as "Bharati Braille". This code is now used for all the Indian languages. It is perhaps a matter of pride for India to have started such unification of the Braille Codes. This idea, started by India, has resulted in unifying the codes of all the languages in the world. Now Braille script is more or less common to all the languages in the world including those of Chinese group of languages.

Similarly, arithmetic is taught by a special apparatus known as Taylor Frame. This consists of a metal frame with holes in the form of an eight-

cornered star. This hole admits a peg in eight different positions. The peg has a bar on one end and two points at the other end. Thus, sixteen symbols could be made with these pegs. The numbers one to nine and zero are represented by ten such positions. Then the remaining six positions are used for the arithmetic symbols like the plus, minus, multiplication, division, decimal and equals. There are several other methods of working arithmetic by such a tangible process. With the aid of these frames practically all the numerical work can be done by the blind.

#### Development of Personality

Education does not mean just the ability to read and write. The development of the personality is as vital if not more. The blind child is full of energy and has its own propensities. These have to be channelized into proper directions. It is a mistake to think that the blind students would be happy with sedentary life. As in sighted schools, it is of paramount importance to find opportunities for the blind students to take interest in extra-curricular activities.



Pupils of the Rashtriya Andh Kanya Vidyalaya, New Delhi, reading books in Braille script

After a blind child is initiated into the habit of understanding the world with his residuary senses, it would be a good principle to allow him to have independence of locomotion and provide for him opportunities to mix with the society he is to live in. The importance of these can never be overemphasised. They are full of energy and want to be doing something or the other. If properly guided, they would like participation in all the activities that sighted children love. They would like to climb trees, participate in sports, swim, go for excursions and explore the world. In good schools for the blind, scouting and girl guide movements are quite popular. They are quite capable of learning first aid and do social service. Such activities not only give them a sense of achievement but also make the blind demonstrate to the world their capabilities. Nothing will dispel the false ideas regarding the blind

as a first-hand observation of their talent to move about the town unaided, carry on a chat with all the social graces and perform their duties with a sense of pride. I have heard several visitors to my school remark that they cannot think of anything which these blind children are not capable of. Even if they are not really so, the desire to find their own ways of doing these activities is certainly there. I personally feel that all good schools should necessarily provide opportunities for the formation of such healthy habits and manners.

All the schools for the blind give free instruction. Most of the schools give free boarding and lodging too. But the facilities are not known to many in our country. So the parents of many blind children live in utter ignorance and allow the precious tender years of the child to be spent in futility. No one can deny the fact that education must be started as soon as the child is ready for it. Afterwards, the child would develop wrong attitudes to education. It is particularly true in the case of blind children. The task of the teachers of the blind would be increased with further problems of dispelling several phobias, rigidity in movements, despair and perhaps abnegation.

#### Dearth of Qualified Teachers

The biggest difficulty that the organisers of schools for the blind experience is the dearth of qualified teachers. No systematic attempt is made in many of the States in India in this direction. Hence, the Government of India is exploring the ways and means of organizing good teachers' training courses. It is earnestly hoped that era long this long felt need would be met. Meanwhile, in certain States like Madras, teachers are given specialist training in teaching the blind on an *ad hoc* basis. The actual number of educable blind really needs an army of teachers. But such a huge scheme can be taken up by our nation only when it is in better circumstances. Then perhaps it would be the proper time to set up permanent training colleges to give specialist training in teaching the blind.

It is a matter of great satisfaction that the number of schools for the blind in our country is rapidly increasing in recent times. It is very difficult to keep a correct account of them. By a conservative estimate, I feel that there must be about eighty schools for the blind in our country now. Even

(CONTINUED ON PAGE 65)

Swasth Hind

# INTEGRATED EDUCATION

**O**N April 30, 1961, a Delhi newspaper published a news-item entitled "Address to Council" the contents of which read as follows :

"Inaugurating the meeting of the reconstituted National Advisory Council for the Education of the Handicapped, Dr Shrimali, Union Minister for Education, stressed the need for working out a comprehensive scheme for the education of handicapped children.

The Minister said that provisions had been made for awarding scholarships to physically handicapped matriculates.

He disagreed with the proposal for separate institutions for handicapped children. They had to sit and learn with normal children, he added."

This scheme where handicapped children "sit, and learn" side by side with able-bodied students is known as integration. For many years now, both Government and voluntary agencies working for the welfare of the blind have stressed the need for educational facilities to be developed enabling blind children to study at regular day schools for sighted students. Today, this movement is gradually gaining momentum.

## **Integrated Education—Benefits**

Is the introduction of integrated schemes of education really necessary in India, and if so, what are its benefits ?

The answer to the first part of this question is an emphatic yes. Integration of blind and sighted children is most necessary from several angles—economic, educational and social.

Taking first the economic point of view, a little of statistical data will serve to elucidate the need for integration. The 1931 census figures placed blind

## **Miss Rehmud Fazalbhoj**

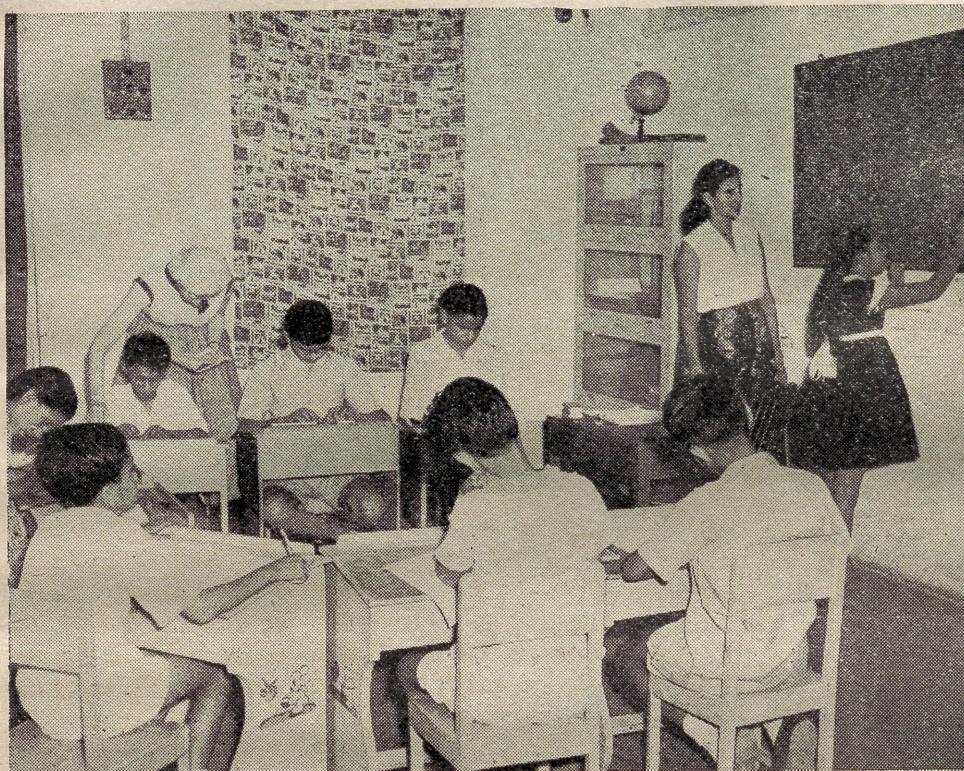
and partially blind persons at two million, of which 30 per cent. were estimated to be children of school-going age. In India today, we have about 90 schools and institutions for the blind where approximately 4,000 boys and girls are receiving education and vocational training. What about the large number of children still needing assistance ? It will be impossible for a long time to come to establish an adequate number of specialised institutions to meet their needs. Construction of buildings and maintenance would involve expenditure far beyond the scope of either the Government or voluntary agencies. Therefore, the answer lies in arranging for as many blind children as possible to attend ordinary schools.

An added advantage of this system is that the financial involvement is very nominal. The only extra expenditure for blind students attending regular school would be the cost of special apparatus for the three R's and the salary of a specially trained teacher on the staff to attend to their educational needs.

And for the blind students themselves there are many educational and social advantages. To begin with, at present, most schools for the blind impart education up to primary level only. Therefore, those students desiring higher academic qualification both at secondary and university levels must necessarily study with the sighted.

Socially too, they have much to gain. By studying alongside the sighted, blind students have the opportunity of being in the same environment enjoyed by their sighted companions. This serves as an effective means of removing false notions regarding their capabilities. It has been found that sighted students become broad-minded and tolerant about handicaps, and learn to respect and appreciate the abilities of their blind classmates.

There is yet one other social benefit which often escapes mention. By attending an ordinary school like his sighted brethren and sisters, the blind child



While the class teacher explains a sum on black-board, the Resource Teacher helps a visually handicapped pupil to work it out by use of a special arithmetic board

is able to have his full share of family life at home. Many parents will agree that this in no small consideration.

Recognising the benefits of integrated education and in order to encourage and help blind students to study at regular schools and universities, the Government of India, some State Governments and the National Association for the Blind are giving scholarships to meet the expenses of tuition fees and readers.

The Union Ministry of Education gives scholarships to blind students at university levels only. In addition, they also give financial assistance to those taking technical and vocational training in various fields as well as for advanced courses in music.

The State Governments of Maharashtra and Gujarat and the National Association for the Blind, however, offer assistance to students studying at all levels, that is, at the primary, secondary or university stage.

#### **NAB's Policy**

As part of the services it renders to the blind in India, the National Association for the Blind has set aside a certain sum of money to be given away each year as scholarships to students studying with the sighted. Already, a large number of students have

received assistance over the period of three years since this scheme has been launched. It is hoped to increase this service to even a larger number of students in the coming years.

Further to encouraging integrated education at home, the National Association for the Blind, through its contacts with several leading organisations abroad, helps persons, both blind and sighted to obtain scholarships for advanced courses in teacher-training and blind welfare work in the U.K. and U.S.A. So far, six teachers have received certificates in teaching the blind from the Perkins School for the Blind, Mass., U.S.A. Two candidates have been deputed this year to take the diploma in school-teaching of the College of Teachers of the Blind, London. Some welfare workers will take short-term courses in administration and employment through the courtesy of the Royal Commonwealth Society for the Blind, U.K.

Through a farsighted policy of encouraging integrated education at home and abroad, the National Association for the Blind has taken yet another step forward in achieving its aim—that of providing better education and training opportunities for all those who face life with a visual handicap.

# BLIND WELFARE WORK IN INDIA

**I**NDIA is a country in which the milk of human kindness is understood to flow in abundance. In the joint-family system, which is now breaking up, the old, the crippled and the deaf and the blind were well looked after. The family understood its responsibilities and shared them for pleasure or for pain. With the social changes quickly coming in the united family structure is cracking and independent India with the goal of creating a welfare state is naturally called upon to shoulder the responsibility which was once the burden of family units.

The blind in India constitute two million which figure is considered to be the largest in the world. In other words, it is one-fifth of the world's blind population for whom the State has to provide a variety of welfare services for their regeneration and integration into society as its respectable members. On the very face of it this may appear to be stupendous task and the solution of the problem so baffling.

Historically speaking our country is in the field of blind welfare work for 75 years when the first institution for the blind came into existence at Rajpur, in 1885. This was a missionary venture. In the course of years, several institutions were established in the different parts of the country and today we have about one hundred of them catering to the various needs of the blind. It is worthwhile to note that more has been, and is being, attempted to be done for the welfare of the blind and the other handicapped in the last decade or so than was the case in the pre-independence period. In spite of that we have not even touched the fringe of the problem.

## Blind Welfare Work—Two Categories

Blind welfare work may be divided into two

**Shri K.N. Jussawala**

**Principal, Victoria Memorial School for the Blind  
Bombay**

important categories : (i) Welfare and educational services for the rehabilitation of the blind, and (ii) Prevention and cure of blindness. No country can completely eradicate blindness but certainly can control and reduce its incidence so that eventually it has a lesser number of the blind to deal with. This aspect of the problem ought to merit the most serious attention of all concerned and particularly of the government. It is known that over 90 per cent. of the blindness in our country is either preventable or curable and the measures for this should at all cost be taken to do away with this suffering. Smallpox, application of irritants, malnutrition, unhygienic conditions of living, superstition, quackery and couching practised openly in districts and villages are responsible for much of this blindness. The seriousness of the matter is greater when it is considered that children of tender age are mostly the victims. In the advanced countries, blindness is by far and large limited to old age groups which in terms of years is much less than what we should realise in our own case. A child going blind in infancy has to spend the rest of his life in this sorry plight. It is estimated that the gross number of sightless years for the two million blind we have would come to over 41 million.

There is another facet to this argument, namely that in the absence of a planned programme for prevention of blindness we permit the number of the blind to increase which must ultimately affect our already over-burdened economy. It has to be realised that the education and training of the blind is costly and may swallow up much of the country's resources, if services for a good part of the blind population were mooted for their education. Since much of our blindness occurs in villages, it is there that measures to prevent blindness should be taken in a systematic way. The problem requires to be

tackled at a national level. We have all the technical know-how in this respect and what is required is careful planning to control this scourge. It is to be regretted that much less attention is being paid to the question than it deserves though the facts are known to the official departments and voluntary organisations connected with the work.

In the Third Five Year Plan, a more liberal financial provision has been made for the improvement and expansion of the welfare services for the handicapped of all sorts. This reflects in no uncertain terms the interest the government is evincing in the work. But, in order that the money is utilised to the greatest advantage, due thought would have to be given to planning to achieve the maximum results. As far as educational facilities for the blind go there are a few programmes which may be followed depending upon their suitability in the areas at which they are intended to be started.

#### **Educational Facilities**

In the first place we have the residential schools for the blind. In fact, all our present educational institutions are residential owing to certain factors patent to our country and to our blind population. Also these institutions provide, apart from educational, physical and medical facilities for the children which they ordinarily could never have in their homes. A good residential institution properly managed does offer excellent scope to the blind children for a normal, healthy development and rehabilitation into society.

However, it will be understood that just this one type of programme can never completely solve the difficulty of providing educational facilities to thousands of our blind children. We have, therefore, to explore the possibility of an integrated programme by which, with the help of resource teachers selected blind children have their education along with the sighted in normal schools. While the U.K. has all its institutions for the blind residential, in the United States the integrated programme is gaining momentum and wherever possible blind children are educated side by side with the sighted.

In a country like ours, which is primarily agricultural, a third type of programme would be considered unavoidable if we desire to solve the problem

within a reasonable period. This programme would comprise educating, training and settling the blind in their own communities. All factors considered, we can never be in a position to go on creating special residential schools for the blind year after year. It will be financially impossible and we shall not be able to cover all the children of educable age though we might be spending enormous sums of money.

Unfortunately, we have had no reliable statistics about blindness in India since the census of 1931. The number of blind per 100,000 of population was in 1881 put at 229, in 1901 at 121, and in 1931 at 172. Since then we are estimating that we have over 500 per 100,000 of the population. Of the supposed total number of 2,000,000 blind in our country, it is anybody's guess what the percentage may be in villages. It is said that of the 400,000,000 Indian population, we have roughly 330,000,000 who live in villages. Basing our calculation on the distribution of the general population between towns and villages, we will not be very much wrong in our statement that at least 80 per cent. of our blind are in the rural areas. If we assume that 10 per cent. of our blind are under 16 years of age, we have the staggering figure of 200,000 of educable blind. And there may not be much mistake in this assumption looking to the preventable blinding diseases which play mischief in causing blindness among the children. The situation, however, liberally gauged, ought to cause grave anxiety in the minds of all.

Since a lot is being done for rural uplift through community development projects and other schemes, there can hardly be any great difficulty in implementing a planned and phased programme for the education and welfare of the blind in villages. The experiment of rural rehabilitation of the blind has been very successfully carried out in parts of Africa under what is known as the "Shamba" scheme under the auspices of the Royal Commonwealth Society for the Blind. In India too, we have launched on this new programme by establishing the Tata Agricultural and Rural Training Centre for the Blind at Phansa in the Gujarat State. A modified programme that could be adopted in areas conducive to implement it with success would be to carry the services to the doors of the blind by trained visitors either individually or in small groups at important

district centres in collaboration with, say, village schools or village welfare centres to which the trained visitors may be attached.

The institutions for the blind in our country are all located in towns and cities while admissions to them are mostly from district and rural areas. The nature of education and training is also urban and at the end of the training period the blind refuse to return to their homes for they know they can do nothing in their villages. As the number of institutions grow, the problem, instead of being solved, will tend to be more intricate. It is, therefore, imperative that an early attention is paid to starting rural education and welfare services for the blind. Such services will cost less and lead to a speedier rehabilitation of the blind. Of course, results cannot be expected to be achieved overnight but once a proper foundation is laid we shall be on a sure path to meet a challenging situation.

#### **Blindness in all Age-groups**

Blindness may strike all classes of people at all age-groups. We have, therefore, the infant blind, the adult blind and the aged blind with again every age variation among these groups. Each group calls for a different type of service and treatment. So far, we have concentrated mainly on the group of educable ages and the group who can be trained for employment in simple crafts and vocations. In the group of educable age we have yet to see a full-fledged nursery school for blind babies established while in the adult group we many times find age variation of 20 to 40 and in some cases above 40 years huddled together. No attempts of any great significance are made either to reclaim blind babies at as early an age as possible or to rehabilitate the newly-blinded adults and resettle them as quickly as possible in their original posts or jobs or in the new ones for which they might be trained and suited. In one case we show negligence, in the other, we create a sense of utter frustration in the unfortunate person whose affliction becomes thereby doubly unbearable. In both the cases, there is evidence of a sense of irresponsibility which endangers the future of the blind child and the adult for an otherwise happy and useful life. The bane of blindness is not the loss of sight but the intolerable situation of putting up with idle hours. We have many instances of blind children suffering from

mental starvation which interferes a great deal with their normal education and rehabilitation, as also of cases of adult blind who are very much emotionally disturbed for the constant fear of physical starvation glaring in their faces and worse if they have a family to support. It may also be noted that for the two groups we are concentrating on, just an infinitesimal ratio of the total number receives training while a far larger number in them is without any institutional care.

#### **Paucity of Resources and Trained Personnel**

Not all the institutions for the blind are run on desired lines. They have their own difficulties, financial and otherwise. There is a dearth of Braille literature and appliances which stagnate the course of even elementary education. The dream of each child owning his book or his Braille or arithmetic slate is yet to be realised. It is not possible always for all the institutions to have trained personnel or to pay adequate salaries to the staff. As may be expected, the quality of work suffers and the efforts, money and time spent on it result usually in a waste. A lot of improvement in many of the existing institutions for the blind is needed but this will depend on removing the obstacles of scarcity of Braille books, appliances and above all trained staff without which no institution can register any semblance of progress. The education and training of the blind is a technical subject requiring qualified technicians in charge of it. "To give only the best to the blind" should be the motto in every sphere of the work. If we thought of a complete set-up of blind welfare services it would resolve into the following five broadly based sections :

1. To lay down a suitable definition of blindness ; to adopt comprehensive legislation for the welfare and education of the blind ; to carry out detailed statistics of the blind and to provide for their registration ; to grant special travel and other concessions to the blind ; to take such steps as are necessary to control the incidence of blindness.

2. All the children of school-going age to be provided with educational facilities in accordance with their age and aptitude. In this respect, the system of their education should form a part of the national scheme of education for normal children. The urgency of trained and well-qualified teachers

should be admitted and steps taken for their training ; and their status, pay scales, conditions of service, etc., defined ; adequate number of Braille text-books and literature at a cheap price be made available and the manufacture of Braille appliances be done in the country.

3. To provide training facilities to the blind in useful crafts, industries and avocations with a view to employing them in their own homes, or in open industry, or professionally, or in rural occupations for such blind as can be rehabilitated in their communities.

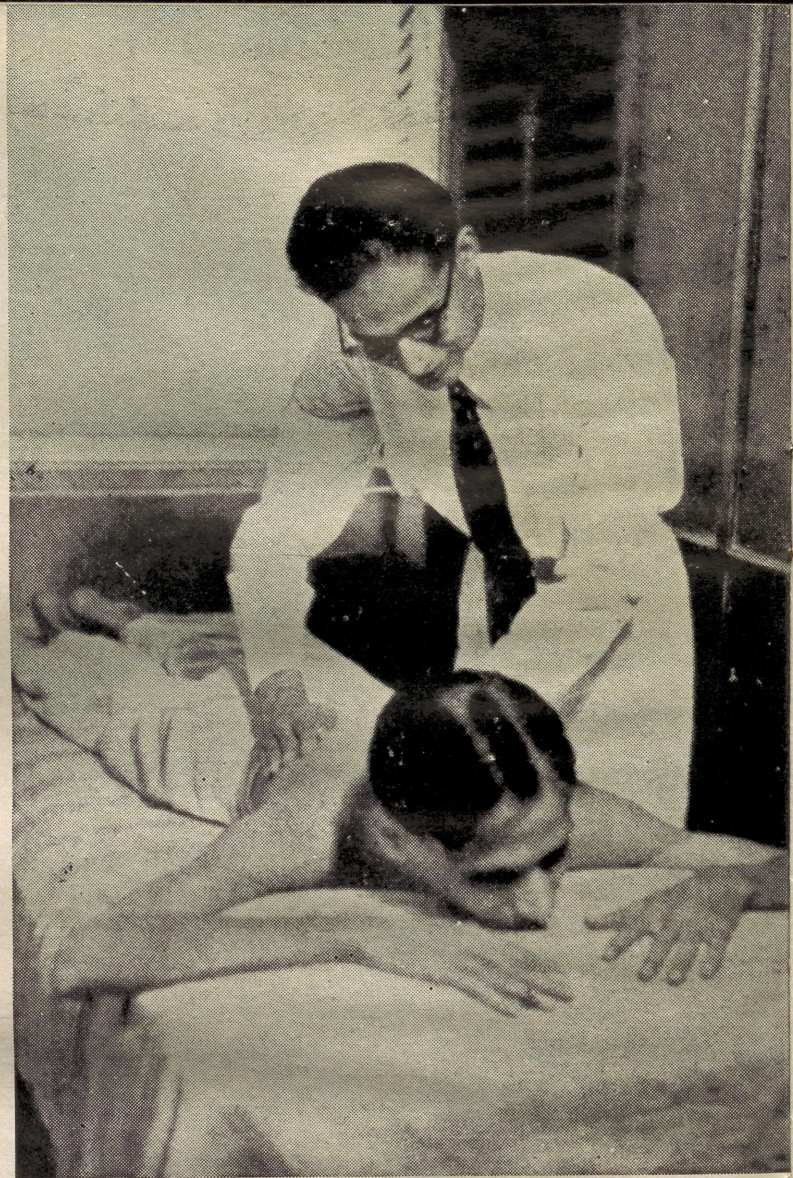
4. Provision for establishing special institutions for the blind with other physical or mental handicaps.

5. To open rehabilitation centres for the adult blind ; to provide for the old and infirm blind (preferably separate homes for them be established).

#### **Present Services not Systematic**

As we view the work that is being done at present we may not fail to notice the absence of a system in it. It goes on at random and many times without the clear knowledge of its aim and objective. There is, of course, no chaos as such but the services lack a sort of cohesion and scientific planning. It is because of this that results are not commensurate with the amount of labour and money put into the task of redeeming the blind to the extent of making them acceptable to the ordinary norms of society towards which their education and training have to be directed. For an unknown number of years, the blind have come to be segregated from society and it is the responsibility of the workers for the blind to see that they are returned to its fold as normal citizens who can contribute to the wealth and happiness of their fellow-beings rather than remain as parasites or liabilities. Mere pity can, and never will, help. What is required is the correct approach, optimism and an understanding of the capacities and the limitations which the condition of blindness may impose and an unwavering faith that the blind are quite capable of gaining victory over their handicap if they have opportunities to do so.

A lot may be said about public relations in the quick and efficient rehabilitation of the blind. A negative attitude towards the blind leads nowhere



**The intelligent blind are taught physiotherapy and massage at the Victoria Memorial School for the Blind. A student is seen giving massage**

and only accentuates certain misunderstandings and misconceptions about them. Blindness is usually considered an insurmountable handicap though, in fact, it is just a physical inconvenience. Where industries have employed the blind it has been heartening to learn that quite a few of them are willing to take in additional blind labour while almost all acclaim the output the seeing hands turn out. The blind are known to do well as physiotherapists and masseurs and today over thirty-five of them are employed in this profession.

The question is of launching a concerted drive to educate the public about the blind so that a correct understanding of their needs, ability, capacity

and limitations is formed. Much of the rehabilitation work will be fruitless if "the disgraceful state of public relations between the blind and the sighted" is not improved "with more aggressive action". It will be a simpler task to create self-confidence among the blind about their affliction but it will be found a more uphill task to create confidence in the public about the blind. Unless the society learns "to accept the blind as normal citizens of varying value, just like other people", the efforts to rehabilitate and employ them cannot stand to have much success.

We have been talking about planning the work for the blind at every stage. This will be possible if every State in India sets up a council to be called the State Council on Blindness. In the Centre, a National Advisory Council for the Handicapped has been established to include all classes of handicaps. There is no objection to the States having similar councils to deal with the problems of the various handicapped sections of their populations. But in such a case, it would be advisable to have sub-committees of experts for the blind, the deaf, the crippled and so on. It will be understood that

merely appointing councils will not solve the problem. The councils when established would have to chalk out, in consultation with the experts, programmes for the early measures to be taken for the education, welfare and rehabilitation of the physically handicapped in their respective States. Such councils should be semi-official bodies on which all interests are represented. It is a responsibility which is to be shared by the parents, the institutions, the society at large and the government.

What little we have been able to do for the blind in our country has proved beyond doubt that the blind, provided that they get educational and training facilities and provided that they are given a fair chance, can become assets and play their legitimate part in contributing to the wealth of the country. By neglecting them and their problems were compelling them to lead an idle life and to be a burden on society. We may hope that the time will not be distant to give an opportunity to the blind to march abreast with their normal brethren and to labour alongside with them like members of one fraternity to carry forward their mother country on the road to peace, plenty and prosperity.

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(CONTINUED FROM PAGE 58)

this number is but a small fraction of the actual need. It is equally gratifying to find that the blind get through Government and University examinations in larger numbers and demonstrate to the general public that the blind can compete with the sighted in education. It has become an accepted fact that a blind boy can go through the University course and even conduct research in subjects not involving laboratory work. This development is greatly due to the active interest that the Government evinces in this problem and the generous financial help that it offers to blind students and several

voluntary institutions for the blind.

If the education of the blind should become universal, I feel that the society should be purged of its false notions about the blind, should be educated about the tremendous potentialities of the blind persuaded to give all possible help to the blind to rebuild their lives. It is then that the grand welfare schemes that are being drawn and financed by the Government can bear fruit. It is then and then alone that the blind may have their rightful place in the society and live as respectable and self-supporting citizens.

# CARE OF THE EYES

**C**CARE of the eyes should begin during the pre-natal period. Care of the pregnant mother is the best insurance of a healthy child. Good medical care, including sound advice about nutrition is just as important to ensure good vision for the unborn child as for his general health. Any discharge from the maternal passage during this period should not be neglected but thoroughly investigated and should receive appropriate treatment. Scrupulous cleanliness must be observed during the parturition and the puerperium. This will help prevent infection of the eyes at birth. In all suspected cases a serological test should be done to exclude syphilis. Such measures with adequate treatment when indicated will help reduce the infant blindness which is caused by these infections. It is now well-known that the infant is likely to suffer from congenital cataract, among other things, when the mother contracts measles during the first three months of pregnancy. It is, therefore, necessary to guard her from exposure to such infections.

It is equally important to remember that the function of the eye or its formation may be seriously affected by pre-natal influences. Although our knowledge about genetics and heredity is not complete it is sufficiently advanced for us to be able to determine in advance the probabilities of ocular inheritance in those cases in which one or both parents have characteristics which are not desirable, and to advise against the deliberate or unwitting unions of potential weaknesses.

## At Birth

One of the most dreadful diseases which is responsible for blinding the eyes of babies at birth is purulent conjunctivitis known as ophthalmia neonatorum. Prophylaxis plays the most important part. The tragedy lies not in ignorance but in non-observance. Prophylaxis consists of (a) ante-natal care to exclude vaginal sepsis, (b) cleansing of the lids

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of birth, and (c) post-natal instillation into the eyes of antiseptic drops.

Cleansing of the lids should be carried out as soon as the head is born or immediately after the birth is completed before the eyes open. Each eye should be wiped with separate pieces of dry sterilized lint until all secretion present on the lid margins is removed. If the lint be dry, the secretion is removed with the grease which is normally present on the lids. The wiping should be carried out away from the nose and simultaneously in each eye; thus the pledgets of lint are drawn away from each other and firmer traction is obtained. Moist swabs should not be used. This dry swab-wiping should never be omitted and reliance must never be placed solely on the use of eye drops, as of the two procedures, dry swabbing is by far the more important. Drops are next instilled into both eyes. Many antiseptic drops have been used but none has proved better than one per cent. silver nitrate, first suggested by Crede.

## Infancy and Childhood

Care of the eyes in infancy and childhood should be based upon common sense. Cleanliness is of paramount importance, and should include the clothes, toys, bedding, hands, and everything which may come in contact with the eyes directly or indirectly. Above all, it should be remembered that the infant requires sunshine and fresh air for his best development. His eyes should not be exposed to undue glare or light but there should be good indirect illumination. His crib should not be kept in a darkened corner. It was pointed out by Nettleship many years ago that head nodding or spasmus nutans could result from keeping the crib in a darkened corner of the room. This condition is very often associated with amblyopia or nystagmus. Although there is a strong element of heredity in the development of these conditions, curiously

enough, some cases have cleared up when the illumination in the nursery was made adequate.

It is wise practice to take the baby or the child periodically to the family physician for examination and general physical check-up. At such examination, the eyes should be examined not only for signs of inflammation but also for any imbalance of external ocular muscles. Coordination can be tested by circling a bright object about 12 inches in front of the child and then moving the object towards the nose. After the infant is six months of age, he usually follows such an object reasonably well. If an eye shows any tendency to turn in or turn out (squint) after the twelfth month, the child should be placed under the care of an ophthalmologist.

Many parents are under the impression that a child with squint may grow out of it. Not only the squint does not correct itself but the squinting eye loses vision and becomes amblyopic. Many entrants into government service when they come up for physical fitness tests are found to suffer from loss of vision in one eye amounting to 6/60 Snellen or even less. In such cases, amblyopia from disuse has resulted from neglect or too late, or improper and inadequate treatment in childhood. It is essential that children should be seen by an ophthalmologist as soon as a tendency for the eye to deviate is recognised.

Three essentials in the treatment of a squint are :  
(1) correction of the error of refraction as soon as possible and under a cycloplegic. Many squints disappear when corrective glasses are worn.  
(2) Vision in the deviating eye must be improved by covering or blocking vision of the good eye.  
(3) Eye exercises have to be given to develop binocular vision. In almost all cases of concomitant squints, there is a feebleness of binocular reflexes. Very often it is necessary to perform an operation for correcting the squint in the young child. Eye exercises may precede or follow such an operation. Successful surgery can be performed even on infants and glasses can be worn when necessary by children as young as one year. Early treatment prevents loss of vision in the squinting eye and shortens the time required to patch up the good eye. Early treatment also corrects the condition before the child suffers the thoughtless gibes of playmates which

may affect profoundly his personality development. After the child is three years old he should be tested yearly for distant visual acuity. With the pre-school child, the symbol E Chart may be used. After the child becomes familiar with the large E, he may be asked to play a game, pointing in the direction in which the arms of the smaller symbol point. The average three-year child may not answer full visual acuity. It may not be more than 6/12, because the eye is still growing and there is a short span. Seeing clearly requires more than the simple act of looking. Fixation, concentration, discrimination, and interpretation are a few of the factors involved. After he becomes six, however, he should be able to read 6/6 line with each eye. Patience is required in testing the vision of pre-school children. About 10 to 25 percent of children at different ages may be found to be in need of glasses to see clearly, and, therefore, the time taken in "screening" pre-school children will not be spent in vain.

Once the child enters the school, his eyes should be examined periodically. More than one-fourth of the children of school age need eye care in order to see clearly. The eye and the ear are the chief gateways of learning and, therefore, each child should ideally have a competent eye examination before entering school. In practice, some kind of vision testing or screening programme is necessary so that children with seriously defective vision may be referred to eye care. In most of the western countries, preliminary vision testing is done by the school teacher or the school health nurse. Such a programme forms a part of a well-organised school health service which is in existence in those countries but is wanting in ours. The school nurse is constantly on the lookout for children suffering from eye disease or squint, or those showing symptoms of defective vision. Children found defective are usually referred to the school doctor for initial testing. The work of the school doctor and the school nurse is made effective by the active cooperation of the teachers. The teachers are in constant touch with children and are in a more favourable position to detect symptoms indicative of a defective special sense than is a school doctor or nurse. Thus, if a teacher knows that the child holds his book too close to the eyes, or sits, in the stooping position at the desk or is backward or complains of not being able

to see the blackboard, which may be indicative of defective vision, he refers the child to the school medical officer for early examination. Similarly, children with inflammatory eye disease or with squint can be detected by the teacher who refers them for special attention.

### Errors of Refraction

The normal eye, if overworked, may suffer from fatigue and such fatigue is likely to occur even more rapidly in children who have an error of refraction; they are working under a visual handicap. Among the ordinary symptoms of eyestrain are headache, frowning, twitching, blinking and rubbing of the eyes. There may be, in addition, some inflammation of the external parts of the eye, as blepharitis and conjunctivitis. These external eye diseases are by no means invariably due to eyestrain; they may be produced by external infection—dust and dirt, or by bad nutrition, or by uncleanness. Since, however, the lymphatic drainage of the eyeball is hampered by sustained ocular effort, such conditions will always tend to be aggravated when any eyestrain is already present.

An examination under a cycloplegic is the best way to determine the full amount of the optical error of any eye. If there is no ametropia and vision is still less than normal, something besides glasses is needed and the child should have a complete physical and mental examination. Refractive errors are corrected only when glasses are worn; when the glasses are left off, the strain from the refractive error returns immediately. That does not necessarily mean that glasses should be worn in every case of refractive error or that they should be worn all the time. The refractive error and the amount of strain produced are the deciding factors and can be determined by any careful and experienced refractionist.

The question is often asked whether the child will outgrow the necessity of wearing glasses. The eyes of children are in a dynamic state; at birth, the normal condition is of hypermetropia which is corrected as time goes on to one of emmetropia and that overaction in this otherwise physiological process produces, a condition of myopia. If a child starts with a moderate amount of hypermetropia he will undoubtedly become less hypermetropic as he grows older. Whether or not he can later discard

his glasses will naturally depend upon the amount of initial hypermetropia.

A small initial hypermetropia may easily become myopia later. An initial myopia tends to increase as the child grows older and stronger glasses will be required from time to time for normal distant vision.

In a large majority of children, myopia is a progressive condition. Heredity, however, plays a predominating role in the production of myopia. Therefore, children of short-sighted parents should have their eyes examined before the age of six and made to wear appropriate correcting lenses so that the child may grow up without being deprived of the recognition and enjoyment of distant objects. Many parents dislike the idea of their children wearing progressively strong glasses and therefore they easily succumb to "cures" advocated by charlatans.

There is no basis, in fact, for extravagant claims of "curing" by means of eye exercises. Many "eye trainers" actually train the patient's mind rather than his vision, teaching him to interpret blurred images on test charts more accurately. In some instances this may appear a benefit. His vision, however, remains blurred. This may have serious consequences when a patient with a false sense of security encounters a situation demanding effective sight. The man who "didn't see the car coming" will find an eye chart in spite of poor vision. We have had occasions to test these "cured" patients but have never found one which attained a normal unaided standard of visual acuity under proper conditions of testing. On the contrary we invariably noticed that the amount of myopia had advanced.

Medical as well as lay people believe that myopia is due to close work. There is no conclusive evidence to show that the use of eyes for near work can directly cause myopia. Myopia has a tendency to progress during the period of growth. Unfortunately, there are no means of checking this progressive tendency. Children with moderate degree of myopia ( $-5D$  or  $-6D$ ) without any gross pathological changes in the fundus should not be deprived of normal education. Parents of such children should be warned that certain positions, *e.g.*, in the police force or fighting services are only open to candidates

who can see the 6/6 line of letters with each eye unaided. Many a needless disappointment will thereby be avoided.

Books used by school children should be printed in bold types and younger the child bolder should be the type of his book. They should be printed on matt-white paper ; glossy paper should not be used. The ink should be jet black and must not be shiny. There should be good ventilation in the school room, with plenty of light ; the seats should be adjustable so that every child can read and write in an erect posture without bending over the books. Writing on blackboard should be in large letters. If artificial light is used, the lighting should be even throughout the room. It must not be too powerful to produce dazzling, it should be just enough and not too dim. Good lighting conditions are of first-rate importance for the following reasons :

A child handicapped by dim light at school is likely to adopt unhygienic postures, which may even produce deformity, such as curvature of the spine. Secondly, education is likely to suffer under the necessity of peering at books in a dark class room, because work will be slowed down and concentration hindered. Finally, the difficult working conditions may render a child irritable, take away his zest for games, and depress the level of his general health. In the ensuing state of lowered resistance it is reasonable to believe that a child will more readily be visited by ocular infection, and may even develop a tendency to myopia. It is, therefore, reasonable to conclude that although bad lighting conditions inflict no direct ocular damage, they can be indirectly harmful to the eyes.

Personal cleanliness is the greatest safeguard against infections such as conjunctivitis and trachoma. Both these infections are extremely common in this country. The use of the common towel, abundance of flies, overcrowding, dust, dirt and uncleanly habits have caused the spread of infection of trachoma which is one of the most important causes of blindness in India.

Careful attention should also be paid to the nutrition of the growing child. Phlyctenular conjunctivitis and keratitis do not lend themselves to active preventive measures other than those which

tend to raise the general standard of nutrition and cleanliness. Xerosis and night blindness can be avoided by the use of well-balanced diet and above all the necessity of fresh air and sunshine cannot be overemphasised for the healthy growth of the body and preventing infection, etc.

### **Injuries**

An important cause of loss of vision among children is injuries to the eyes. Parents of small children should be urged to be careful to keep scissors, knitting and crochet needles, pencils and other sharp objects out of reach.

Hazards to older children's eyes are bows and arrows, darts, slingshots and air guns ; indulgence in fire crackers in Diwali festival has made many children blind.

### **Partially Sighted**

One very important gap in our educational system is the want of provision for the education of the partially sighted. "Partially sighted" are defined as children who by reason of defective vision cannot follow the ordinary curriculum without detriment to their sight or to their educational development but can be educated by special methods involving the use of sight. Children with high myopia having gross pathological changes in the fundus (pathological myopia) and in whom the integrity of the macula is threatened at an early age are considered, among others, suitable for such methods of special education. The idea of special schools for partially sighted children spread from England to Europe in 1911 and to the U.S.A. in 1912. Since then considerable progress has been made in the methods of teaching such children with ingenious optical aids and devices. This subject cannot be discussed here in detail. A reference is made only to emphasize the necessity of providing such special facilities for this unfortunate class of children who is regarded neither blind nor sighted.

### **Adult Age**

Young adult life is the period when syphilis, tuberculosis and focal infections occur frequently. They give rise to acute inflammatory diseases of the eye of which iritis and choroiditis are common. Sight is likely to be damaged more or less

permanently in these inflammatory affections. When the individual reaches the age of forty, he finds it increasingly difficult to read small print clearly at the usual distance of 13 inches. He finds it necessary to hold the book away from the eyes in order to see clearly. His near point of distinct vision has receded ; in other words, presbyopia has set in. It is also wise to consult an ophthalmologist at this stage. It is at this time that the patient is likely to have symptoms of arteriosclerosis, diabetes and other systemic diseases. Sometimes, the first manifestations of these diseases are noticed in the ocular fundus, and, therefore, patients belonging to this age-group should have a complete eye examination along with a thorough physical check-up. Cataract and glaucoma may be suspected at this time and an early diagnosis is all the more important. In cataract as well as in chronic simple glaucoma, the patient loses sight gradually. A cursory examination may lead one to diagnose a chronic simple glaucoma as cataract and the patient may be advised to wait till it becomes ripe. This may have a disastrous consequence because in glaucoma whatever sight is lost is not recoverable whereas a cataract can be operated successfully and sight restored fully. It is, therefore, imperative that a patient who experiences gradual loss of vision should be thoroughly investigated to arrive at a correct diagnosis of his condition.

### Industry

Safety of the workmen in industry is the responsibility of the employer. Unfortunately, very few employers in this country are alive to this responsibility. It has been found more economical to provide proper working conditions, health maintenance, safety precautions and medical aid than to pay for disabilities. Industry also requires more critical visual acuity for its numerous tasks. The demands which modern industry makes on vision are manifold and thus the visual problems presented are so numerous, diverse, and peculiar to industrial production that they have come to constitute a special field in ophthalmology, known as industrial ophthalmology. The visual problems in industrial ophthalmology are not merely related to correction of refractive errors but they are problems which relate to specific kinds of jobs which requires special visual skills. These skills may demand not only sharp visual acuity at some specific distance but also at distances varying from a few inches to hundreds

of feet. Some occupations require a high rating in colour discrimination ; other require stereopsis or depth perception or accurate orientation while many require rapid and good coordination between hand and eye.

### Light and Sight

Good lighting and illumination are essential for visual efficiency and comfort not only in industrial plants but for any type of visual task.

The human eye is able to adapt itself to varying intensities of illumination so that it can do the same visual task under varying brightness levels. There is not one intensity of light that is most efficient for any particular patient because of this adaptability. Whilst it is true that the power of discrimination increases with the intensity of illumination, it is also true that the discomfort increases after a certain point has been reached. Our eyes are not trustworthy judges, so we have recourse to a metre, which measures light in terms of "foot candles". It is possible to read a book with illumination of three-foot candles but often it is not comfortable. It is generally conceded that 20 foot candles is about right for ordinary close work but up to 50 to 60 foot candles is better when the work is fine and intricate. Good lighting connotes a lighting suitable both in quality and quantity to serve the purpose of good visual efficiency in the performance of the task in which the individual is interested and secondly creating a cheerful environment agreeable to the individual. For clarity of vision some features have to be eliminated whilst others are to be emphasised. The three important factors are the distribution, direction and diffusion of light. The lights should be so arranged as to avoid unpleasant reflections, sharp contrasts and improper diffusion. All these cause blurring of details and eyestrain. Light modulation (flicker) is also to be avoided, as it causes discomfort and after-sensations. Another important factor is glare which leads to poor performance.

Colour, contrast and surroundings make a good deal of difference. Surroundings, if overlit, are hard to the eyes. The illumination of the surroundings should be slightly less than that of the object for the visual task.

For the industry, the illuminating engineers now  
*(Continued on page 82)*

## GLAUCOMA SCREENING IN SAN JOSE

**G**LAUCOMA is the second leading cause of adult blindness in California, as it is in the rest of the country. A major effort to locate previously undiagnosed cases of this preventable cause of sight loss was started in the San Jose City Health Department in December 1960, with the opening of a permanent glaucoma screening clinic. This clinic, scheduled twice a week, is the culmination of several years of effort by members of the medical profession, interested citizens, and health department personnel.

The unique feature of the screening clinic is that it is a continually operating service in contrast to one-day mass screening programmes. In starting the clinic, private physicians provided medical resources and over-all leadership; concerned citizens provided the enthusiasm, legal assistance and financial support; and the health department provided facilities and organizational "know-how."

### Historical Background

Several years of hard work in planning, fund raising, and other activities preceded the opening day of the clinic. Historically, concern with finding cases of early undiagnosed glaucoma in San Jose can be traced to conversations among a group of local ophthalmologists as far back as 1954, followed by some demonstration screening in an institution.<sup>1</sup>

Interest of the San Jose City Health Department in a preventable eye condition of children, amblyopia ex anopsia (dimness of vision in one eye resulting from disuse), developed shortly after this and resulted in a demonstration project for early detection of this cause of blindness in children. In 1956, in conjunction with the mass Salk vaccine immunization clinics, public health nurses utilized the opportunity to provide information about amblyopia ex anopsia and to instruct parents of young children on the techniques for screening children at home.<sup>2</sup>

Local ophthalmologists, who assisted the department as consultants, realized the case-finding opportunities available through existing health department services. Through their interest, the health department's Advisory Eye Health Committee was organized. Its members were local ophthalmologists, the director of the California State Health Department's Blindness Prevention Programme, the city health officer, chief public health nurse, and chief health educator. This committee initiated a review of school health records for missed cases of amblyopia ex anopsia<sup>3</sup>, demonstrated a vision screening programme in nursery schools, and organized an in-service training session on amblyopia ex anopsia for the department's public health nurse.

As a result of these experiences with screening, the eye health committee found a way to approach the problem of glaucoma by establishing a glaucoma screening clinic. The value of such a clinic had been indicated by the experiences of the Brookline, Massachusetts, health department.<sup>4,5</sup>

Prior to the opening of the clinic representatives of the Committee approached local ophthalmologists and the Santa Clara County Medical Society regarding their interest and support for the programme. The cooperation of both of these groups throughout the entire planning period was most helpful. Interested individuals in the community were invited to sit as a citizens' committee on eye health for the purpose of establishing a glaucoma detection centre.

In 1959, more than 30 persons attended the first meeting of the Citizen's Committee on Eye Health. This group was composed of physicians, representatives of various health and welfare agencies, and concerned citizens. After an initial orientation to the need for a glaucoma detection centre a steering committee was formed to initiate a plan for the establishment of the clinic.

A site was selected, clinic activities were defined, and incorporation was finally achieved under the name of Sight Conservation Research Centre. A modest budget was outlined, to be underwritten by a gift from a private business firm and a small one-year project development grant from the State Department of Public Health.

The Board of directors maintain community relations, establish and maintain liaison with the medical community; determine operating standards for the clinic, raise funds, and handle all the financial aspects of the clinic.

Included on the 36-member board are physicians (not more than nine), representatives of health and welfare agencies, and representatives from industry. A high proportion of industrial representation was planned because of the steering committee's interest in promoting glaucoma screening programme in industry. An executive committee conducts the business of the organisation between the semi-annual board of directors' meetings.

#### **Clinic Personnel**

After a trial run in December 1960, the clinic has been held twice a week. It is staffed by a physician, a nurse, and volunteers. Existing clerical personnel in the health department accept telephone appointments and provide general clerical services.

Volunteers supplement the skills of the professional staff by registering, giving tests, and assisting the physician in the examination room. A volunteer training and orientation programme was established to brief volunteers on the purpose of the organization; to familiarize them with glaucoma and with the screening procedures used at the clinic; to instruct them on registration procedures, and techniques of conducting certain of the screening tests.

Four volunteers are used at each clinic session and, at the present time, 35 volunteers assist on a rotating basis.

#### **Operation of Clinic**

The glaucoma detection clinic is located in the health department building in facilities ordinarily used for child health conferences.

Persons desiring to have their eyes tested must be 35 years or over. There is no residence requirement, but an appointment is necessary. Four appointments are made for each 15-minute period and a total of 44 appointments are made, generally by telephone, for each clinic session. A reminder card is mailed to each person making an appointment. This procedure keeps missed appointments to a minimum and has encouraged persons to call if an appointment cannot be kept.

The ophthalmologists on the board of directors decided which tests were to be used at the clinic. At the present time there are four major procedures; a visual field test using the Harrington-Flocks Field Screener, a visual acuity test using the Snellen chart projected on a screen, observation of the optic nerve head and pupil angle with the ophthalmoscope, and tonometry.

The patient is initially registered by one of the volunteers. Besides the usual background information, he is asked two questions, one about the presence of glaucoma among relatives, the other about high blood pressure. These questions were included to provide some impressions for future research. The patient is also asked to sign a statement permitting the personnel of the Sight Conservation Research Centre to give the tests.

In separate rooms, trained volunteers administer the screening test for loss in the visual field, and the test of visual acuity. The patient then enters the examining room where anaesthetic drops are placed in his eyes. The drops take effect while the previously prepared patient is being examined. Before this procedure was instituted, there was always a backlog of patients, who had completed all of their other tests, waiting to see the physician. In addition to eliminating this backlog, this procedure provides the second patient an opportunity to observe the quick, casual, and painless manner in which the tonometer test is given.

Before leaving the clinic, the patient has an interview with the clinic nurse. At that time, his test results are interpreted and questions are answered.

#### **Referral**

A patient with an elevated eye pressure reading (Schiotz tonometer) is referred to an ophthalmologist. A patient with an intermediate reading receives a

recheck appointment, at which time he is only tested with the tonometer. Upon retest, if the intraocular pressure is the same as or higher than the earlier reading he is then referred to an ophthalmologist. This procedure has minimized the number of false referrals.

If referral is necessary and the patient does not know a practising ophthalmologist, a list of local specialists is given to him by the nurse.

The test results are transposed onto a form letter and placed in an envelope which is given to the patient. It is the patient's responsibility to take them to a private physician. Enclosed with the letter is a post card which the physician is requested to complete indicating whether or not, in his estimation, the patient has glaucoma. This is the only information the clinic requests from the ophthalmologist.

#### **Follow-up**

To make certain that the patient sees a physician, certain follow-up procedures have been integrated into the routine operations of the clinic.

The clinic nurse maintains a record of the diagnosis returned by the physician. Whenever the post card is not returned within a reasonable length of time the nurse calls the physician if his name is known. In evaluating the first two months of the clinic's operation it was found that about 40 per cent. of the post cards had not been returned. A follow-up of these unreported cases showed that a majority of the patients had seen a physician, but the physician was reluctant to send in either a positive or negative report without further examination. In such cases, the physician was urged to indicate a tentative diagnosis with comments relating to further office examination.

When a patient has not visited a physician, telephone or home call is made to impress upon the patient the importance of having a medical examination. At the present time there are only 15 cases which have not been completely processed out of 130 referrals for glaucoma.

#### **Publicizing the Clinic**

Initially, the various senior citizen groups in the community were approached to take advantage of the clinic's services. Government employees in

the civic centre area, where the health department is located, also were informed about the clinic. Prior to its opening the first week of January 1961, a full page picture article appeared in the local newspaper explaining the purposes of the clinic and describing the kinds of tests given. As a result of this one article, over 800 appointments were made filling 20 full clinic sessions. Subsequently, additional short news releases have appeared in the newspaper and the local television station filmed the operation of the clinic for one of its news programmes.

Many others hear about the clinic through contact with persons who already have been tested. The operator of the X-ray minifilm unit has encouraged a large number of persons who are X-rayed to make appointments for the glaucoma clinic. At the present time a short announcement appearing in the newspaper once a month, along with the above mentioned approaches, has been sufficient to fill clinic sessions.

The health department has produced a brochure which describes the programme and illustrated the test.

#### **Equipment**

The initial investment for equipment was approximately \$1,000. The major equipment purchased includes one projectoscope, one projectoscreen, three ophthalmoscopes, one heat sterilizer for ophthalmoscopes, two field screeners, and two tonometers.

Other incidental supplies were either purchased or donated by pharmaceutical companies. The industrial plant in which the first industrial glaucoma survey was conducted purchased four examination tables for the clinic.

#### **X-ray Minifilm**

Since it is conveniently located, the X-ray minifilm service has been made available to persons attending the glaucoma clinic. About half of them utilise this service. Although inconclusive since the numbers are small, one of the interesting results of this effort has been an apparently higher referral rate for suspicious chest conditions among persons from the glaucoma screening clinic in comparison with the general population. The usual referral

rate of the X-ray unit for any suspicious condition of the chest is about one per 500 X-rays. For people from the glaucoma screening clinic taking advantage of this services, the referral rate is about five per 500 X-rays.

### Industrial Screening Programme

A major objective of the Sight Conservation Research Centre is the development of glaucoma screening programmes in industry. The first opportunity for such a programme came shortly after the clinic was opened when a member of the board of directors offered his printing plant for a survey. This firm employs about 100 workers over the age of 35. The arrangements for screening these employees at the plant were made by the clinic nurse and chief public health nurse of the health department. Volunteer ophthalmologists recruited from the community participate in the programme. Clinic volunteers assisted in registering and testing for visual acuity. The management, after being oriented to the programme, accepted responsibility for encouraging the workers to take advantage of the screening services and achieved 100 per cent. participation.

Three previously unknown glaucoma cases were found. Several persons were referred for cataracts and many more for refractive errors. Workers with an intermediate reading were referred to the regularly scheduled glaucoma screening clinic for rechecks before being referred to their physicians. A time study showed that it required about ten minutes of the worker's time to complete the tests, excluding the visual field screening test which was eliminated in this industrial screening programme.

### Programme Results

By summer 1961, a total of 3,286 persons had been tested at the health department clinic and at three industrial sites and one senior citizen centre. Of this number, 130 persons were referred to private physicians for further tests for glaucoma. This number included 21 individuals tested at the clinic who knew they had glaucoma, five of whom had lapsed treatment. There were 441 persons referred for other causes including cataracts and low vision. Results of the glaucoma screening are given below. Some other surveys have reported rates higher than those obtained in San Jose. However, the clinic staff has felt, on the basis of the most carefully done

studies, that one to two previously unknown glaucoma cases per 100 persons tested is an expected case finding rate.<sup>6</sup> It should be noted that half of all those tested were under age 50. As in reports of other studies, the incidence by age rises sharply after 50.<sup>7</sup>

### RESULTS, GLAUCOMA SCREENING PROGRAM, BY SEX—SAN JOSE, 1961

	Total	Males	Females
Total number tested	3286	1612	1674
Previously known glaucoma.	21	10	11
Under treatment	16	5	11
Not under treatment	5	5	—
Net number tested	3265	1602	1663
Negative test	3156	1560	1596
Referred (positive test)	109	42	67
Follow-up			
Incomplete	60	19	41
Diagnosis pending			
recheck by physician	45	16	29
Report not returned	15	3	12
Complete	49	23	26
Negative diagnosis	22	6	16
Glaucoma	27	17	10

### NUMBER TESTED, NUMBER REFERRED, AND NUMBER AND RATE OF GLAUCOMA CASES BY AGE GROUP—SAN JOSE, 1961.

Age group	Total Number tested	Number referred	Dagnosis of Glaucoma	
			Number	Rate per 100 persons tested
All ages	3265	109	27	.83
Under 40	726	8	2	.28
40-49	955	21	3	.31
50-59	599	24	6	1.0
60-69	568	31	6	1.1
70 & over	408	25	10	2.5
Unknown	9			

It should prove very interesting to follow the group for which the diagnosis is pending recheck by the physician to learn the number of persons with

*Swasth Hind*

borderline intra-ocular pressure who eventually develop glaucoma.

The total cost of operating the clinic is estimated at about \$1.40 per patient screened, based on the amortization of equipment over five years. Without regard to the value to the patient that may attach to negative findings, the cost of discovering a glaucoma case is estimated at about \$175. Considering that it costs about \$1200 per year to support one blind person under the categorical aid programme for the blind supervised by the Santa Clara County Welfare Department it is apparent that early case discovery is of significant economic benefit to the taxpayer. The annual tax funds to maintain three persons blind from a preventable cause such as glaucoma would easily support the San Jose Screening Clinic for an entire year.

San Jose's Sight Conservation Research Centre was commended for its pioneer glaucoma screening activities in a resolution introduced by Senator Thompson in the 1961 California legislative session.

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## THE WORLD OF DARKNESS

Out of three thousand million people on the earth today at least ten million—of whom six hundred and fifty thousand are children—live in perpetual night. Some researchers, indeed, believe that this is a gross under-estimate and the number of the world's blind at more than fifteen millions.

This empire of darkness has its subjects in every country. More than seven million of them, it has been estimated, live in the rural areas of the world.

No country escapes, however well-guarded its health defences may be.

# WORKING CAPABILITIES OF THE BLIND IN INDUSTRY

**Shri Lakshman Prasad**

**Officer-in-Charge, Government of India  
Employment Office (Southern Region), Madras**

**I**N India the public has a very poor and inadequate conception of the capabilities of the blind. This has done them a great harm. Many prejudices have prevented them from occupying the right place in society. However, the rights and responsibilities of the blind are gradually being recognised all over the country. Organised work for education, training and rehabilitation of the blind is, however, comparatively recent in our country and is still in the initial stages of development.

The work of placement of the blind in industry was initiated only seven years back in our country. The first pilot Employment Office for the Blind in India under the Union Ministry of Education, was set up at Madras in July 1954. The main function of this office is to secure remunerative employment to the qualified trainees of the Training Centre for the Adult Blind, Dehra Dun, in ordinary industrial and commercial establishments in South India.

Although the working of the scheme has shown that the blind can perform a large number of operations in industries quite competently, but we do not have scientifically ascertained data to substantiate these facts. With this objective, a survey was planned and undertaken in the first half of 1961 in order to make a comparative study on work performance of blind and able-bodied workers performing identical or similar jobs in industry; and ascertain whether work performance of blind is comparable to that of non-handicapped workers employed in the same type of work.

Questionnaires were sent out to all industrial establishments at which our blind persons were in employment. Replies were received from 15 establishments giving information in respect of 60 blind

and an equal number of able-bodied workers. The present article is based on this study.

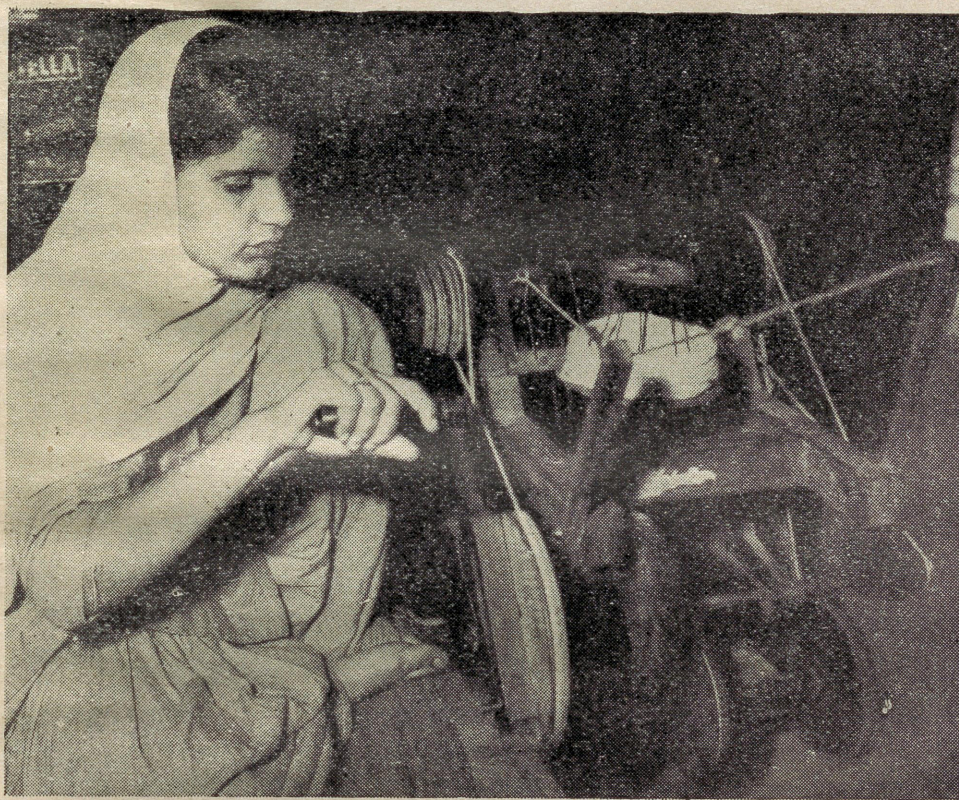
## **Workers And Their Employment**

The blind and able-bodied workers under our study are employed in the 15 industrial establishments. Of the 60 workers in each group, 53.3 per cent. are working in 12 private enterprises and the remaining 46.7 per cent. in three public sector undertakings. The establishments covered include the textile, cycle, metal box, telephone, needles, motors, match, cashew nut and confectionery industries. About 36 different types of jobs of a simple repetitive nature, both on machine and assembly lines, were carried out by the workers of each group under the study.

The average age of our blind group of workers is 28.9 years and that of the able-bodied employees comes to 26.9 years. Therefore, blind workers are two years older than the sighted. With regard to level of working experience in their present jobs, the study reveals that able-bodied have slightly more experience than the blind.

## **Monthly Wages**

The workers under our study are employed on piece-rate and time-rate basis as well. The study indicates that blind employees are earning slightly higher wages than that of the able-bodied. The blind and the able-bodied are receiving average monthly wage of Rs 95.83 nP and Rs 94.17 nP respectively. In most of the cases the output of the blind engaged on piece-rate system is more than the sighted and as such the difference exists in wages. This difference, however, signifies that suitably trained blind persons, if placed carefully in suitable jobs, can easily beat the shop average of production on identical jobs.



A blind girl of the Rashtriya Andh Kanya Vidyalaya, New Delhi, plying a charkha

The information gathered under different headings for the study from employers in respect of their blind and able-bodied employees are given below.

#### **Attendance, Absenteeism and Punctuality**

With regard to attendance at work, 98.3 per cent. of blind workers against the 88.3 per cent. of the able-bodied were regarded as regular and very regular employees and the remaining 1.7 per cent. of the blind and 11.7 per cent. of non-disabled as irregular. This shows that the blind have better attendance records than the able-bodied workers. This means that absenteeism-rate is lower in the case of the blind than the sighted employees. The data gathered on punctuality in attendance indicates that 95 per cent. of the able-bodied were reported as punctual and very punctual workers whereas in the case of blind employees none of them was reported who was not punctual in attendance.

#### **Efficiency, Concentration and Accidents**

The information gathered in respect of efficiency reveals that the median output of our blind group of workers is 79.7 per cent. and that of non-handi-

capped workers comes to 81.00 per cent. A comparison of these figures shows that the median output of the blind is 1.3 per cent. lower than that of the able-bodied. This difference of about one per cent. of output is, however, not very significant. By little more experience and with better vocational training, the blind may, however, be able to attain the equal level of production. With regard to concentration while at work, 23.3 per cent. of the blind against 13.3 per cent. of the able-bodied were considered to have greater than normal concentration and the remaining employees in both the groups to have normal concentration. Only 3.3 per cent. of blind employees were reported to have met with their accidents in course of their work whereas in the case of non-impaired workers the accident figures were found comparatively high, being 15 per cent. In fact, all of them were exposed to the same job hazards. This shows that the blind are more safety minded than the sighted.

#### **Discipline, Loyalty and Behaviour**

The data collected in respect of discipline indicates that 98.3 per cent. of the blind against 100 per

cent. of sighted workers were considered willing and obedient and ready to carry out instructions of their superiors ; 91.7 per cent. of the employees in each group were marked by their respective managements to be loyal workers and 8.3 per cent. of workers in each groups were considered to be of doubtful loyalty. As regards their behaviour with fellow workers, in the case of the blind 97.7 per cent. and 98.3 per cent. of the able-bodied were regarded as cooperative and the remaining 2.3 per cent. of the former and 1.7 per cent. of the latter group as quarrelsome. It was also reported that 98.3 per cent. of workers in each group were found to have normal standard of personal cleanliness.

#### Conclusion

The findings of the study have clearly shown that the blind, like the able-bodied, possess all the

requisite qualities that are essential for factory employment. The evidence collected for the study indicates that they have been quite successful as factory workers. Thus, on this basis, it can safely be concluded that work performance of the blind is comparable to that of non-disabled workers employed in similar type of work under identical conditions. These conclusions may, however, be summed up as follows :

A blind worker can work in open industry exactly on the same terms and conditions as applicable to the sighted. He can also ensure regularity at work and punctuality in attendance like his counterpart. He is as dependable, loyal to the management, obedient to his superiors and cooperative with his fellow workers as the able-bodied. He is as capable as the sighted in productive efficiency and has similar work habits.

## THE PROBLEM OF ACCIDENTS

Here are nine points to remember :

Most people do not realize what a tremendous destroyer of life and health accidents are.

Too few people use even the most obvious personal safety devices.

We tolerate unsafe environment and unsafe behaviour.

No one knows very much about the underlying causes of accidents.

We are particularly far behind in understanding the human factors in accidents.

We still cling to practices which long ago have been proved unsound or actually harmful.

We fail to recognize some important safety measures and experiences that should be obvious.

Most of us have no idea how much accidents cost each of us in actual cash each year.

We are much too timid about making and enforcing laws to require that safety be built into our environment in the first place.

—IRMA WEST, M.D., M.P.H.

# REHABILITATION OF THE RURAL BLIND

“THE world has over 10 million blind. Over two thirds of them could have preserved their sight had they benefited in time from modern preventive medicine and surgery. The great causes of blindness are still accidents that need not happen, and preventable diseases such as trachoma, smallpox, and onchocerciasis (river blindness). Cataract can be remedied by surgery. Glaucoma can be halted if discovered in time. The cost of preventive services is but a fraction of the burden imposed on national economies by widespread loss of sight”.

The above extract from a message of Dr M.G. Candau, Director-General of the World Health Organization for the World Health Day on the April 7, 1962 puts the problem in a nutshell.

## Prevention Better than Cure

To and for service for all age-groups of the blind in exclusive institutions in a vast country such as ours, which has one-fifth of the estimated total blind population of the world is economically impossible for generations to come. Comparatively, the cost of preventive services is negligible. I wish to emphasise the imperative need of doing everything possible to prevent blindness, particularly in the rural areas. An intensive campaign for the eradication of flies, for improving the sanitary and hygienic conditions of rural areas, intensive vaccination and re-vaccination, for probing heredity and avoiding marriages between blood-relatives, eradication of such diseases as conjunctivitis, trachoma and glaucoma, treatment of cataracts, timely treatment of squints in new-born babies, training children not to play with sharp and pointed objects and an intensive country-wide publicity drive by all recognised media of publicity can eliminate a lot of unnecessary blindness and consequent avoidable

Capt. H.J.M. Desai

Hony. Secretary, The Tata Agricultural and Rural Training Centre for the Blind, Phansa, and the National Association for the Blind, India

human suffering. As Helen Keller has said : “If one-tenth of the money we now spent to support unnecessary blindness were spent to prevent it, society would be the gainer in terms of cold economy, not to mention considerations of the happiness of humanity”.

The problem of rehabilitation of the two million blind in India assumes colossal proportions because the blind are spread over a sub-continent and because of the paucity of funds. By a systematic campaign to prevent and cure blindness, the problem can be contained and restricted to manageable proportions in the next few decades.

## Attitudes and Approaches

Even after nearly eight decades of organised work for the blind, blind welfare in our country has not developed on the right lines, particularly in the rural areas. This is attributable to want of correct attitudes and approaches to blindness. It also attributes to superstition.

It is also common belief that knowledge could be acquired only through the sense of sight and once that avenue of knowledge is cut off, it is not possible, to educate oneself. How incorrect this belief is has been amply proved by modern advances in the education of the blind. The remaining senses of touch, smell, hearing and taste are systematically developed and harnessed in the service of the blind. Everything possible is done to improve the mobility of the blind by training them in the use of the white cane. Freedom and independence are gained by developing the residual senses and mobility. The accent is put more on developing the residual abilities of the blind and not on their disabilities. The stress is on “making the disabled able up to a point only limited by their disability.” Systematic training develops memory and concentration.



Every effort is made to improve the mobility of the blind. Here the instructor is giving lessons in out-door travel with the help of a white cane

Misguided pity and charity are replaced by a new outlook—an outlook to develop the individual and his total personality—to equip him to fight the battle of life. In other words, the total personality of the blind individual is developed by giving him opportunities which are available to his more fortunate sighted brethren.

The blind have necessarily to live all their lives in a society predominantly of the sighted. Hence, it is a wrong policy to segregate the blind in exclusive institutions for them. The earlier the blind are integrated into sighted society the better. This process simultaneously educates the sighted and helps them to develop correct attitudes and approaches in them. Hence integrated education of the sighted and the blind is favoured in all progressive countries.

The myth of the utter helplessness of the blind is completely eradicated by modern advances in educational, vocational, economical and social rehabilitation of the blind. It is realised that employment of the blind is an economic investment which the society cannot afford to ignore. We cannot

afford the luxury of an idle manpower of 20 lakhs of blind in addition to other physically handicapped whose number is legion. By intensive training and rehabilitation it is possible to convert the blind into tax payers instead of letting them continue to remain as tax consumers.

#### **Individual in His Own Rights**

Every blind is an individual in his own rights. His needs, problems, background, education and his physical, mental and intellectual abilities—almost everything—differ. Hence, considering the blind as a group and generalising about them is a serious mistake. Whereas we should recognise the limitations imposed by blindness, we should remember that these differ in each case according to the person's mental outlook and a variety of other factors. Once we recognise that blindness constitutes a total barrier against entry to many a profession, we also realise the imperative need for providing a diversity of careers to suit each individual's personality.

As Helen Keller, the world's most outstanding woman of the century, has said, "It is the fundamental right of everyone to realise himself, however,

imperfectly, and contribute to the common good, however little."

### **Rural Blind**

Of the 10 million blind in the world, it is estimated that two million are in India and of these, nine-tenths live in the rural areas. Nearly 50 per cent. of these are women. Almost all the existing 90 institutions of the blind in India are located in urban areas and impart an urbanised type of education which leads to jobs in cities only. Such simple repetitive jobs in the cities are limited in number. The needs of the rural blind were hitherto utterly disregarded. It must be admitted that it is not a wise policy to attract the rural blind to the cities where the cost of living is higher, where mobility presents special problems to the blind and where housing is difficult to secure. In addition, psychological and emotional disturbances take place when the blind are uprooted from their familiar rural surroundings, from their families and friends and are landed in strange and hitherto unknown environments. It is, therefore, essential for a predominantly rural country such as ours to provide adequate facilities firstly for the training and secondly for the resettlement of the rural blind in their own familiar village surroundings.

### **Agricultural and Rural Training Centre**

With this view in mind, the National Association for the Blind, with the generous help of Rs two lakhs from the Sir Dorabji Tata Trust, purchased a 240-acre estate at Phansa in Surat District of Gujarat State. This estate is beautifully located on the sea shore. Thirty adult blind coming from all parts of the country are at present undergoing intensive training in agriculture, horticulture, floriculture, animal husbandry and dairy, poultry-raising and in rural crafts and trades. The trainees who come from all over India are carefully selected. Preference is given to those who have land, livestock or any other rural activity of their own or of their families. It is made very clear from the beginning that it is not intended to make an expert agriculturist of the blind. What is intended is to teach the blind how to be useful members of the family unit so as to help the family on various jobs on the farm. Training is first imparted on community plots, where three agricultural graduates on the staff of the Centre train the blind in small batches. Thereafter each trainee is given a small individual

plot of 100' x 4' which he develops himself. When he has gained sufficient experience, a plot of one-fourth of an acre is given so that the blind person gets confidence in cultivating his own plot all by himself.

Since much of agriculture in India depends on the monsoon, special emphasis is laid on training the blind in other pursuits such as animal husbandry and dairy farming, which is one of the most favourite choice of the blind trainees. They milk the animals with the utmost ease and confidence. Of the eight successful trainees who were resettled by the Centre in their own villages, four preferred to have buffaloes and run a small dairy. Poultry-raising, rabbit-raising and duck-rearing are also taught.

### **Help From Foreign Agencies**

With a grant of Rs 2,25,000 given by the Office of Vocational Rehabilitation, United States, the Centre is presently conducting an experiment in the most successful ways in which the rural blind can be rehabilitated. A full-time Recruitment and Resettlement Officer appointed at the Centre visits the trained blind on their farms and helps in solving their problems on the farm. This officer also places the blind in contact with the block development officer, agricultural officer, the village surpanch and other influential people who are likely to help him in his successful resettlement on his own farm. If this experiment succeeds—the present indications are that it has a good chance of success—it will open up new avenues in the training and resettlement of the rural blind in their own villages as farm hands, farm operators and, in some cases, even as farm managers or individual farm holders. The success of the scheme depends on the right attitudes and approaches by the sighted members of the family and the village. It is appreciated that it will take some time before these could be developed. At present, there is a great reluctance on the part of the blind to undertake training in farming and allied activities in preference to working in sheltered workshops on traditional trades such as basketry, cane work, handloom-weaving, etc. This is understandable. But once the trained rural blind are rehabilitated in their own villages and make a success of their own farms, the idea is bound to spread and taken up by other blind persons.

The project has also received generous help from

the American Foundation for Overseas Blind Inc., the Royal Commonwealth Society for the Blind and from the CARE.

### Publicity and Propaganda

Hitherto, the rural blind have suffered through lack of adequate publicity and propaganda in the rural areas. Once a systematic publicity campaign is undertaken in the rural areas, the attitudes and approaches of the people will change and the pace of progress accelerated.

The blind have necessarily to live all their lives with the sighted. The attitudes of the sighted are, therefore, very important and everything possible must be done to bring about correct attitudes and approaches in the rural areas.

### Recommendations

- (i) To sum up, my recommendations are :  
A country-wide publicity drive should be organised to educate the rural masses in  
(1) Preventing preventable blindness and  
(2) in developing correct attitudes and approaches towards the blind.
- (ii) The education of the rural blind, right from

their infancy, should be arranged in the rural areas and should, as far as possible, be integrated with the education of the sighted.

- (iii) Emphasis should be placed in training the blind with a view to ultimately resettling them with their families in their villages on their farms. Thus, the emphasis should shift from Braille and academic education to education in agriculture and allied pursuits, including rural crafts and trades.
- (iv) Training should be practical and in a variety of jobs so that each blind person can choose a career according to his needs and aptitudes.
- (v) Resettlement and follow-up services should be organised to help the trained blind in their successful rehabilitation.

As Dr Henry H. Kessler has beautifully put, "the object of the help is to make help superfluous". All that the blind need are opportunities—opportunities which are normally available to their more fortunate sighted brethren—opportunities for education, employment and a normal social life. Nature has already denied them the precious gift of sight. Let us not deny them opportunities which give them a fair chance to be useful and contributive members of society.

(CONTINUED FROM PAGE 70)

advocate a 'planned system of illumination' taking into consideration the two prime factors: (i) production with efficiency, and (ii) the speed of production. It has been shown time and time again by direct experiments that a change from an inadequate to an adequate illumination reduces working time automatically or increases production by a factor of from five to ten per cent. Undoubtedly, an increase of this order in production with no increase of fatigue to the worker is a desirable thing and actually pays the increased cost of illumination many times over. The task of the lighting engineer is to get light "from the right places to the

right places at the right brightness". Industrial illumination must base its object on the nature of the task, details of the work and period for which visual concentration is necessary. It is important that the scientist should not exclude the artistic side of lighting, and this is particularly important, when the illumination provided has once been made adequate. Lack of contrast and too much evenness of colour then produce a total lack of beauty.

—Reprinted from Journal of the Indian Medical Profession, December 1957, Published by A. MacRae & Co. (Private) Ltd., Bombay-1.

# THE NATIONAL ASSOCIATION FOR THE BLIND

**T**EN years ago, at the first All-India Conference for the Blind which was held at Bombay in January 1952, the following resolution was moved by the late Shri B.G. Kher, the then Chief Minister of Bombay :

“This Conference resolves that an Association for the Blind, the workers for the blind and the sympathisers of the blind of India be formed to be called the National Association for the Blind, with its Head Office in Bombay, to work in the whole of India for the prevention of preventable and cure of curable blindness and the welfare of the blind, to bring about a cooperation among the various organisations for the blind, to coordinate their activities to organise and start new organisations and institutions for various activities for the welfare of the blind and to do all such other things as may be necessary for the promotion of the interest of the blind, that the members of the organising committee of this Conference with the addition of those elected at the Conference be appointed Executive Council with power to coopt others, to act as the National Association for the Blind, and carry on the work in the initial stages of the Association.”

This resolution was seconded by Capt. A.H. Mortimer, Superintendent of the Training Centre for the Adult Blind, Dehra Dun and was adopted unanimously by the delegates present at the Conference.

Thus came into existence the National Association for the Blind with its headquarters at Bombay. Today, after a relatively short period of 10 years, the National Association for the Blind has come to be recognised as the most important organisation working for the welfare of the blind in India.

**Shri Suresh C. Ahuja**

**Executive Officer, The National Association for the Blind, Bombay**

Most of the schools, institutions and associations for the blind in India are affiliated to it and the NAB is recognised by the Government of India, the Governments of the States and by national and international organisations working for the blind throughout the world.

From the very outset, the NAB accepted the responsibility of leadership in work for the blind. As a result of this leadership, significant progress has been achieved in the field of blind welfare work in India in the past few years, but, despite all efforts only the fringe of the problem has been touched so far. A lot still remains to be done, and we hope that in the years to come through the efforts of the NAB and the other voluntary institutions and associations for the blind, with the help and cooperation of governmental agencies, greater progress will be achieved and that it will be possible to provide a complete network of services for the blind of all age-groups and for the blind with additional handicaps.

## **Aims and Objectives**

The aims and objectives of the NAB include :

- (i) To look after the welfare of the blind in general.
- (ii) To work in harmony with other institutions and associations and persons working for the welfare of the blind in India and to co-ordinate work for the blind on a national basis.
- (iii) To take steps towards prevention and cure of blindness and to start eye clinics and mobile ophthalmic units.
- (iv) To take steps towards the education, rehabilitation and training of the blind and to help

them secure employment in open industry and sheltered workshops.

- (v) To arrange and organise conferences of the blind and of workers for the blind where important problems concerning the blind can be discussed.
- (vi) To establish libraries for the blind and to establish printing presses for the printing of Braille literature for the blind.
- (vii) To promote the manufacture of apparatus and equipment used in educational, vocational and cultural activities for the blind.
- (viii) To promote the welfare of the blind through any measures necessary, including legislation.
- (ix) To investigate, collect and circulate information and statistics relating to the blind.

It has, of course, not been possible for the NAB to achieve all the aims and objectives envisaged in its Constitution, in a relatively short period of 10 years. However, when we consider that in 1952 the NAB started without funds, without staff and without an office of its own, the progress made by it is indeed creditable. Today, it has a spacious office of its own, and in addition to the honorary office-bearers, who have been responsible for the work of the Association since its establishment, it has several full-time paid workers on its staff, including an executive officer and a development officer. A steady inflow of funds enables it to plan its activities regularly.

### **Recognition**

The office-bearers realized early the need for the NAB to gain recognition. This was important if the Association was to be established on a sound footing.

The NAB is now recognised by the Government of India and many of the State Governments. Voluntary agencies and the public have also now come to accept the NAB as a national body working for the welfare of the blind.

The NAB has also gained recognition of the World Council for the Welfare of the Blind and other blind welfare agencies all over the world. On the WCWB, the NAB has full representation with six members representing India on the General Assembly.

The American Foundation for Overseas Blind, the Royal Commonwealth Society for the Blind and

the Perkins School for the Blind channelise the distribution of their scholarships and gifts to institutions for the blind and blind individuals in India through the NAB.

### **Policy Matters**

In the early years as the NAB had to build up its funds before it could take up any large-scale activities, it concentrated mainly on the taking up of policy matters pertaining to prevention of blindness and the welfare of the blind with the Government of India and the State Governments.

It succeeded in persuading the Government of India to establish a National Advisory Council for the Education of the Handicapped. It took up the question of the employment of the blind with the Government of India and as a result pilot employment offices for the handicapped were set up by the Government in Bombay and Delhi recently.

It also moved, successfully, several of the Universities to grant special facilities and concessions to blind students.

The NAB continues to move the Central and State Governments on important questions concerning the welfare of the blind. A representative of the NAB was invited to join the Planning Commission Working Group on Social Welfare and as a result it is hoped that greater progress will be made in the field of education and employment of the blind during the Third Five Year Plan period.

The present activities of the NAB are mentioned in the following paragraphs :

Realising the need for channeling the flow of donations on a regular basis, the NAB formed a Finance Raising Committee in 1956. During the short period of its existence, the Committee has collected large funds which have helped the NAB in developing new programmes. The money is collected from the city of Bombay only and so 50 per cent. of the total collection is distributed to the institutions for the blind in the city of Bombay. This arrangement has proved very satisfactory, not only to the NAB, but also to the institutions in Bombay.

### **Industrial Home for the Blind**

One of the objects of the NAB is to set up institution for the blind where the need exists. With this end in view, the M.N. Banaji Industrial Home for the Blind was established in July 1956 at Jogeshwari, Bombay.

The Home is now run by a managing committee under the chairmanship of Shri Shantilal H. Shah, Minister for Law, Judiciary and Labour, Government of Maharashtra. The Home offers intensive training to 80 blind adults in cane-work, basketry, handloom weaving, tailoring, music and Braille.

### **Employment and Placement**

In a country where surplus manpower is available in plenty and where no legislation exists for the employment of the handicapped it is difficult to make any headway in the employment of the blind in open industry. This is more so when intensive industrial training is not imparted to the blind on any appreciable scale. Any programme of blind welfare work, if it is to be successful, must give top priority to the problem of the employment of the blind.

Realising the need for this, the NAB in 1954 set up an Employment and Placement Committee under the chairmanship of Shri S.K. Patil, Minister for Food and Agriculture, Government of India. Through the efforts of this committee a total number of 140 blind persons have been placed in open industry so far.

The blind, who have been employed in factories, mills, offices, hospitals, etc., have proved that given the opportunity they can do the job just as well as their sighted colleagues.

To ensure that only suitably qualified and trained blind persons are placed in the available jobs, the NAB also arranges for pre-employment training prior to placement.

### **Scholarships**

The Association, in addition to helping institutions for the blind, also helps needy individual blind persons. It has a programme of granting scholarships to needy and deserving blind students studying in regular day schools and colleges.

### **Braille Press**

In July 1958 a Braille Press which had been received as a gift from the American Foundation for Overseas Blind was installed in Bombay by the NAB at the M.N. Banaji Home. The Press produces books in the regional languages for the blind in the States of Maharashtra and Gujarat and also a few books in Hindi.

It is intended to construct a building for the Braille Press in the near future in order to be able to expand the activities of the press.

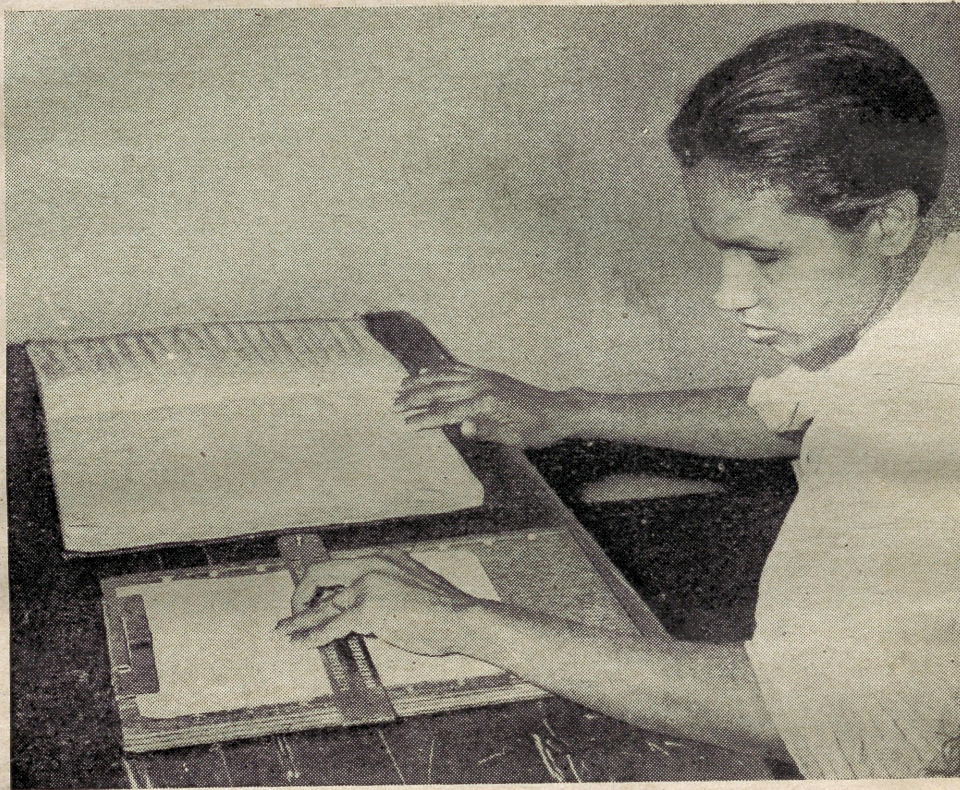
Work for the blind in India has so far been concentrated in the cities and larger towns. Many of the blind students in the schools and homes for the blind come from the rural areas but on the completion of their education or training they find themselves completely unsuited to life and work in their own rural surroundings.

The Tata Agricultural and Rural Training Centre for the Blind which came into existence on 26 January, 1960 offers training to 50 blind adults in agriculture and other rural pursuits. The centre which is located in a village named Phansa in Gujarat State is the first of its kind in Asia. Aid for this project has been received from the House of Tata, several international agencies, the Government of India and from some State Governments.

The need for a magazine dealing with work for the blind in India has been long felt. In June 1959 the NAB brought out the first issue of 'Blind Welfare'. As the name signifies it deals mainly with the problems connected with the welfare of the blind. 'Blind Welfare' is published thrice a year in April, August and December and is already regarded as one of the most important journals in the field throughout the world.

### **Teacher Training**

For many years, the need for a programme for the training of teachers of the blind has been felt. Although there are over 90 schools and institutions for the blind in the country, perhaps not more than a dozen of the teachers in these schools and institutions are qualified in the teaching of the blind. The few trained teachers in the field are those who have secured their qualifications in the U.K. and the



A blind girl of the Rashtriya Andh Kanya Vidyalaya, New Delhi, learning lessons from a book in Braille script

U.S.A. It was realised that not many teachers could afford to go abroad for such training. If standards in the schools for the blind are to be improved it was felt necessary to provide facilities for the training of teachers of the blind in India. With this end in view, the National Association, in cooperation with the National Christian Council of India, established in June 1960 a teachers' training course for school teachers of the blind at the School for the Blind in Palayamkottai in Madras State.

The NAB also obtains scholarships for training in work for the blind in the U.K. and U.S.A. through the Royal Commonwealth Society for the Blind and the Perkins School for the Blind. It is to be hoped that during the next few years most schools and institutions for the blind will be staffed by well-qualified and trained personnel.

#### **Home Teaching**

In England and other western countries, the home teacher is perhaps the most important worker in the field of blind welfare. The home teacher makes the initial contact with the newly-blinded adult and visits regularly all blind persons on his or her register. The NAB in January 1961 appointed a home teacher-cum-social case worker.

The work of the teachers consists of locating blind persons, helping them to make use of the existing facilities for the blind, helping newly-blinded adults in their rehabilitation, teaching Braille and handicrafts, and visiting the blind, including aged blind persons, regularly.

#### **National Society for the Prevention of Blindness**

The National Society for the Prevention of Blindness which has its headquarters at Delhi has as its Founder-President, Rajkumari Amrit Kaur, former Union Health Minister. It was established in June 1959. The Society which is concerned mainly with the task of preventing blindness, will, we hope, in the years to come, play an important part in reducing the high incidence of blindness in our country.

#### **Future Plans**

The future plans of the NAB are ambitious and include the setting up of its branches in all the States. So far, a State Branch of the NAB has been established only in the State of Madras. Its main aim is to provide a complete network of services to the blind all over the country. This will be possible only if branches of the Association are established to begin with in all the States and later we hope in all the districts as well.





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आँखों की रक्षा कीजिये | अन्धेपन से बचिये

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