VISUAL HANDICAP

Dimension of the Problem

The 750,000 blind children in the developing countries of the Commonwealth (1) have little hope of leading a full and active life, but at least they usually suffer less ostracism and active rejection than the epileptic or the leper. Very many of them, however, die from neglect in early childhood, more drift (or are urged) into the life of the professional beggar, a mere 2% at present can find places in the formal educational system (2). Yet of all the common handicaps, blindness tends to arouse the quickest sympathy and the readiest assistance, probably because even the least imaginative sighted citizen can formulate to himself some sort of direct impression of the effects of blindness. Despite the opinion of Helen Keller, who considered profound deafness the worst handicap of all, the public at large regards the lack of vision as the most terrible of familiar handicaps.

Blindness is a term which may cover a wide range of disabilities from the very rare complete blindness resulting in an inability even to distinguish light from dark through less profound loss of vision to the partially-sighted child who, while not suitable for education in a normal school, can nevertheless make much valuable use of his limited sight with the assistance of appropriate aids. This means that the definition of blindness must be related to the purpose for which sight is needed: a child may well be "educationally" blind while retaining sufficient vision for a fair degree of mobility; an adult may be "economically" blind while still able to manage his personal life in the home. A further complication is that defective vision frequently accompanies other types of handicaps. Some 60% of brain-damaged children, 80% of mongols, 75% of children with cyanotic heart disease and 25% of educationally subnormal children have visual defects in addition to their primary handicaps (3).

Incidence

No accurate information yet exists for the incidence of blindness in most developing countries. An estimate of world blindness gives a total of some 15 millions, increasing annually by nearly 400,000, which is an overall incidence of 450 per 100,000 of population. It is generally agreed that the greater part of this blindness is unnecessary. The proportion of preventable blindness probably amounts to two-thirds of the total (4). Of the one million Indians blinded by cataract alone, most could even now be cured (5); a further million cataract victims are to be found in Pakistan. Such overall figures, however, conceal wide variations in incidence. While blindness may be low in some areas, as among the Amerindians of Guyana (6), in parts of the Luapula Valley of Northern Zambia the incidence may rise to nearly 10% of the total population, of whom 82% lost their sight in the first few years of life (7). A survey of the Lower River Valley area of Malawi conducted by Government ophthalmologists produced figures which show that in some schools trachoma was present in as many as 60% or 70% of the pupils (8). Although trachoma does not necessarily cause blindness, the W.H.O. has estimated that in areas where practically everybody has trachoma at least one child in a hundred will be blind (9).

The incidence of blindness per 100,000 of total population in a more developed country tends to run at about 200; among children in these countries

the frequency is a little more than 50. An incidence of about 250 has been suggested for the English-speaking Caribbean (10), although other estimates put the figure at about 400 (11). An overall rate for Ceylon of 450 has been calculated, of whom 10% to 15% are children, giving a blind child population of between 4,500 and 6,750 (12). Of these,332 - less than 1% - were at that time in school. For West Africa, it has been suggested that plans could be based on assumed incidences of 700 for Nigeria (with a higher rate in the North) and 900 for The Gambia, Ghana and Sierra Leone (13); on the other hand another estimate puts the rate for West Africa as a whole at 1056 (14). In East Africa there has been suggested a rate of 730 for Kenya, with rather higher figures for the Central African countries of Malawi and Zambia (15). For Africa as a whole a figure of 856 has been quoted (16).

It is not until these rates are translated into individual children that the magnitude of the humanitarian and educational problem becomes apparent. Perhaps 1,000 blind children live in the Commonwealth Caribbean, 3,000 in Malawi, 8,500 in Kenya, 50,000 in Nigeria (of whom 200 were in school in 1966), 130,000 in Pakistan and 500,000 in India. Admittedly, these children represent only one group among many in the ranks of the disabled, but their affliction is one which is easily recognised in most cases and generally carries little stigma, and one for which measures are available to alleviate the effects in those cases where treatement cannot be effective.

Table I is an attempt to bring together information and indications about visual handicap in developing Commonwealth countries.

Causes

Unlike epilepsy or some of the virus diseases, the causes of blindness are well documented. In areas of moderate incidence the most frequent causes tend to be cataract, glaucoma, keratomalacia, measles and smallpox; the presence of trachoma indicates an increase in incidence of some 300:100,000; where there is onchocerciasis or extensive keratomalacia a further increase of some 200:100,000 is probable (17). Other principal causes include congenital syphilis and congenital defects, optic atrophy, leprosy and other bacterial infections, accident, retinoblastoma and other cancerous growths, diabetes, spinal meningitis and local medicine. These are, of course, the immediate causes of blindness, but they are aggravated and intensified by a number of directly related factors, poor hygiene, ignorance, poverty, malnutrition, neglect, local usages and prejudices, lack of facilities for general and early treatment, the inaccessibility of hyperendemic areas, the cost of control programmes and official indifference and inertia (18). While the frequency of any individual cause may vary from country to country the pattern across the developing world seems to remain constant, of blindness largely resulting from disease and with the incidence affected by differences in standards of hygiene and of diet rather than by the existence or absence of intensive campaigns of control and eradication.

In the more developed countries the incidence of child blindness has reached a steady and apparently irreducible rate with the spread of medical facilities, clean and adequate water supplies, and a general standard of living which makes possible a reasonable and varied diet for all. The stage reached by developing countries in their standard of living can almost be measured in terms of the incidence and causes of blindness. In the Commonwealth Caribbean, for example, nutritional blindness, probably the greatest destroyer of children's sight in Asia, is limited to a few cases in the remoter islands (19). In the relatively affluent island of Bermuda the major cause of

TABLE I

VISUAL HANDICAP

ESTIMATED INCIDENCES IN SOME DEVELOPING COMMONWEALTH COUNTRIES

AREA/COUNTRY	TOTAL POPULATION (a)	INCIDENCE OF VISUAL HANDICAP PER 100,000	APPROXIMATE NUMBER OF VISUALLY-HANDICAPPED PERSONS (t)	APPROXIMATE NUMBER OF VISUALLY-HANDICAPPED CHILDREN (u)
World-wide	4,318m.	450 (b)	19m.	2m.
Commonwealth	890m.	700 (c)	6.25m.	625,000-950,000
Caribbean	4m.	250-400 (d)	10,000-16,000	1,000
Africa	310m.	856 (e)	2.6m.	260,000-390,000
West Africa	75m.	1056 (e)	790,000	115,000
Cyprus	630,000			60 (v)
Ceylon	12.25m.	450 (f)	55,000	5,500-7,750
Fiji	500,000	200+ (g)	1,000-1,200	200 (g)
Gambia	360,000	900-1056 (h)	3,250-3,800	325-570
Ghana	8.6m.	900-1056 (h)	77,400-90,000	7,740-13,500
India	533m.	900 (i)	4.8m.	480,000-720,000
Kenya	10.5m.	730 (j)	76,650	8,500 + 17,000 partially sighted(o)
Malawi	4.4m.	890 (k)	40,000	3,000
Malaysia	10.6m.	250 (l)	26,500	13,250 (w)
Mauritius	825,000		300 blind registered 1970	
Nigeria	64m.	700-1056 (h)	448,00-676,000	45,000-100,000
Pakistan	112m.	1024 (m)	1.23m.	123,000-185,000
Sierra Leone	2.5m.	900-1056 (h)	22,500-26,500	2,250-4,000
Singapore	2m.	200 (n)	4,000	400-600
Tanzania	13m.	730 (o)	75,000-90,000	8,000 + 16,000 partially sighted(o)
Uganda	8.3m.	630 (p)	50,000 + 100,000 partially sighted	6,000 + 12,000 partially sighted(o)
Western Samoa	135,000	300 (q)	420	
Zambia	4.2m.	890 (k)	37,400	4,500
Hong Kong	4m.	250 (r)	10,000	300 + 800 partially sighted (x)
Britain	55.5m.	200 (s)	110,000	50 per 100,000 (s)

NOTES ON TABLE I

(a) Population figures are those estimated for mid-1969 by the United Nations, except for Ghana (1970 census figure) and Uganda (1970 figure by U.N.E.C.A. Population Programme Centre).

(b) World estimate by American Foundation for Overseas Blind.

(c) Derived from estimates published by the Royal Commonwealth Society for the Blind.

(d) Incidence of 250 by Wilson, see p.6., of 400 by Johnson, see p.6.

(e) Quoted by Sinnette, see p.6.

(f) Kenmore, see p.6.

(g) Reply to questionnaire sent to Department of Education, Suva.

(h) Lower incidence by Wilson, see p.6 higher incidence by Sinnette, see p.6.

(i) Derived from total number of blind, based on estimates of the World Trachoma Survey.

(j) Wilson, see p.6.

(k) Wilson, see p. 6.

(l) Reply to questionnaire sent to Ministry of Education, Kuala Lumpur.

(m) W.H.O. estimate.

(n) Derived from estimated total of 4,000 blind by Royal Commonwealth Society for the Blind.

(o) Anderson, E.M. The Education of Physically Handicapped, Blind and Deaf Children in East Africa, London, NFRCD, 1968, pp. 78 and 120.

(p) Derived from Anderson, op.cit.

(q) Derived from number of blind recorded in reply to questionnaire.

(r) Derived from number of blind recorded in reply to questionnaire sent to Department of Education.

(s) Royal Commonwealth Society for the Blind: "Forty Facts about Blindness in the Commonwealth".

(t) Derived from incidences except for Mauritius (1970 registration), Uganda (Anderson, op.cit.), Western Samoa (see note (r)) and Hong Kong (see note (s)).

(u) The proportion of blind children in developing countries may be calculated roughly as 10% to 15% of the total blind population (Kenmore, op. cit, and Anderson, op. cit.). Except where otherwise indicated the figures in this column have been derived in this way.

(v) Reply by Cyprus Government to questionnaire.

(w) 50% of total number of blind are children, according to Ministry of Education, Kuala Lumpur.

(x) Reply to questionnaire sent to Department of Education.

blindness is believed to be diabetes, often undetected or neglected, particularly in the elderly, together with the probability of familial blindness (20). In Jamaica an epidemic of rubella towards the end of 1965 resulted in at least 350 babies being born to mothers known to have been infected; at least 40 of these children are recorded as suffering from cataract, some hearing loss or congenital heart disease (21). Such a number distorts the figures for the island, where they would hardly be noticed in the higher incidences of less developed and more populous countries.

In addition to the recognised blinding diseases common to the developing world, trachoma, glaucoma and cataract, Zambia has a special problem, that of a high frequency of destruction of the cornea and eyeball (22). Research has established the causes as the "Three M's", measles, malnutrition and muti (African medicines). Caustic local preparations, prepared in unhygienic conditions and applied to the diseased eyes of a child probably already weakened by malnutrition, produce ulceration and destruction of the cornea, possibly progressing to complete destruction of the eyeball. Peppers rubbed into the eyes are reported from varous countries as local treatment for convulsions or epileptic fits. Delay in seeking treatment from the hospital is commonplace. Many people suffering from eye injuries allow some days or even weeks to elapse before they present themselves for treatment, by which time the sight is often lost through secondary infection (23).

Underlying all is the effect of malnutrition, ranging from poor diets aggravated by food taboos, as noted by the AFOB in Tanzania, or among Hindus and Moslems, to simple shortage of any foods. Vitamin and protein deficiencies are now recognised as among the most frequent contributory causes of blindness among children in the developing countries (24). Supplementary feeding arrangements, such as that in Zambia, can probably help as much in the battle against blindness as many campaigns against smallpox, rubella or measles which receive more publicity. Throughout the developing world are blind people who at some point in their childhood only lacked the eggs, butter, oil or liver which would have guaranteed that minimum supply of vitamins A or E without which the eye is in danger (25).

Identification of blind children

While the incidences and causes may be estimated and assessed, a further problem arises for the medical worker and educationist when children are sought after for treatment and teaching. An educational specialist in Guyana in a personal communication to the author wrote of the extreme difficulty he was encountering in recruiting blind children for the new school established by the Government. That these children exist he did not doubt, but they did not come forward themselves and were not brought by their parents. The Report of Montfort College in Malawi (26) tells a similar story of a journey to the Lower Shire area, a district where blindness is known to be prevalent, yet where hardly any blind children were seen because they were hidden away by their parents who did not want them to go to school. This particular problem was eventually overcome by the efforts of a nurse who gained the confidence of the parents, but the situation recurs all too frequently throughout the developing countries, as, for example, the difficulty encountered in detecting blind girls in Uganda (27).

Confidence and knowledge on the part of parents are the basic requirements if handicapped children are to be brought forward for treatment and education. Merely to make regulations is a profitless undertaking when, because of personal or religious beliefs, families are embarrassed at having

blind children (28). In addition, in rural areas and among less literate populations, many of those parents who would be disposed to co-operate never learn of the regulations or of the services available to help their blind children. Records and structured surveys should not be overlooked or dismissed as futile, although their incompleteness must be admitted. It is better to begin a system which can be expanded and improved than to do nothing because perfection cannot be ensured. Some reassurance may be gained by those working in the developing countries by the fact that, in the United States in 1954, the National Society for the Prevention of Blindness, New York, suggested periodic surveys of both rural and urban areas to determine actual incidence of visually handicapped children "because of insufficient data" (29).

Probably the most efficient way in which to identify blind children and make them known to the school is by using pupils, teachers and student-teachers to conduct surveys, formally and informally. Trained specialists can explain to children and teachers the symptoms and characteristics of visual handicap and invite information regarding any other children whom they may know who show these characteristics. This method is based on the belief that young primary school children are aware of and interested in their neighbours, and are curious about differences of behaviour (30). This technique works best where a relatively high percentage of children attends school, so that area coverage is likely to be good. In areas where fewer children are in school other methods may have to be employed. In the course of a detailed account of locating blind children, Mao Lian-Wen (31) also records a finding that the most practical single resource for finding blind children is direct contact with elementary-aged pupils, while teachers, and teachers in training, though fewer in numbers, can also play a valuable role. To this end it is desirable that all teachers, whether or not they are specialising in work with the handicapped, should receive basic information about the recognition of disabled children during their initial training and during in-service courses.

The visually-handicapped child

The blind child is primarily a child, but one who cannot see, or whose sight is inadequate for him to live a normal life without special training. Teachers and others should bear in mind these two essential features: the visually handicapped child is a child first, a blind child second. He must not be relegated to the role of a medical case-history or educational problem. Above all his feelings and reactions as a person should not be overlooked. Much of the child's later stability depends on the support in his early years of a sympathetic and understanding family giving him the opportunity to come to terms with his environment. Self-confidence and initiative evolve from the basic sense of security and a consciousness of being accepted as a useful member of his family. The blind child should be encouraged to share in the daily duties and chores of village life, such as collecting firewood, carrying water, helping with the animals and taking part in local crafts and skills (32). Far too many blind children are not allowed or encouraged to participate in home or village life, but spend their early years passively in the family house, until eventually they can earn some money as beggars.

In the developing countries, where much blindness results from disease rather than congential defect, many children are found whose sight has been lost quite recently. In their case the reaction to the onset of the handicap adds a further dimension to the disability. The task of the teacher here is to encourage and rehabilitate as much as to teach school subjects.

Particularly important is to encourage mobility and confidence, preventing the newly blind child from sinking into passivity. The attitudes of many tradttional societies may lead to the blind child suffering neglect. Many of the trainees presenting themselves at the Machokos Trade Training Centre in Kenya, for example, came to join their course in an under-nourished and poor physical condition (33). Nearly all were underweight on arrival and incapable of sustained effort.

Early training

Among the important elements of early training is the minimising of the child's appearance of being different. The face of a blind person does not register emotions, moods, thoughts or intentions in the same way as does the face of a sighted person. The blind child must be taught to register emotion in accordance with the normal custom of his people, for this will make him more "normal" in appearance, even though he himself cannot benefit by "reading" the faces of others. There is much discussion on the subject of blindisms, mannerisms such as eye-poking or rocking in which many blind children indulge. One possible cause is educational neglect, to be eliminated by encouraging the child to participate in activities such as running, climbing or crawling, which will distract the cild from his blindness (34). Such mannerisms are not necessarily a part of blindness and can be combatted by the provision for the blind child of a wide variety of extra-curricular activities (35). Blindisms can be made to disappear by the time a child is six or seven, leaving him that much more normal and acceptable to his sighted fellows.

The partially-sighted child

The partially-sighted child, perhaps surprisingly, has often a more difficult time than his blind counterpart. The partially-sighted child may be punished for carelessness or clumsiness before his handicap is recognised (36). He may receive less sympathy and less consideration. He will often be more at risk because he will attract less help. The child himself may have difficulty in appreciating the limitations of his handicap, and may well have an anxiety which the blind child does not, for the partially-sighted child does not know when the little sight he has may deteriorate. While the blind child may often be overprotected, the partially-sighted child may well be under-protected.

Supporting services

As with all other handicaps, one of the major needs is for public enlightenment and supporting services for the families of visually handicapped children, thus indicating public concern for the acceptance of the child. Medical care in developing countries may be minimal, but social welfare services designed to meet this need could be expanded within the financial limitations of most countries. In the words of one blind person:

> "Often the family of a blind child needs the social worker's help more than the child himself does ... The parents wonder if it is their fault that the child is blind. They also wonder why they can see and the child cannot. This leads to guilt reactions, through which the parents involuntarily destroy the blind child's independence and self-confidence. But if a blind child is deprived of these two resources, he

will soon become a wreck." (37)

The education of blind children

The purpose of education for blind children, as for other children, is to enable them to make the best possible use of their individual ability and aptitudes. The blind child has additional needs. Apart from the special training in social skills mentioned above a conscious effort must be made to widen the range of the blind child's experience and to adapt these experiences to his current needs. In the developing countries the facilities available so far are grossly inadequate - fewer than 2% of the known blind children in developing Commonwealth countries are in school - yet a start has been made and certain guidelines established. Because education for the blind represented the first incursion into the field of education for the handicapped it has tended to become the provision most bound by traditions in its attitudes towards blind children and in the content of the education which has been offered (38). The traditional curriculum for the blind, provided in boarding establishments, has had the effect of emphasising the difference between the blind and the normal, and restricting the part which the blind can play in the life of their community. This in turn has affected the self-concept of the blind person. In the past few years, however, partly as the result of the two World Wars, partly as the result of more enlightened attitudes towards the handicapped, more attention has been paid to developing the facilities remaining to the blind person and less to the handicap itself. If the blind child can be given reasonable mobility, spend most of his time with his sighted peers, and not be condemned to vocational training for "blind" trades, he has every chance of developing into a balanced, responsible and contributing member of his community rather than a burden and an embarrassment. For the authorities in the developing countries of the Commonwealth the extensive tours of Mr. John Wilson, the blind Director of the Royal Commonwealth Society for the Blind, must have played a significant part in adjusting their attitudes. In him they can see demonstrated the capabilities of a blind man.

Five categories of educational provision for blind children have been listed:

- total integration, in which the blind children attend normal classes but receive certain lessons from an itinerant teacher. (This is the most usual system in Northern Nigeria, for example.)

- special classes attached to day schools. This is an appropriate system where sufficient blind children are available to form the classes.

- centres for handicapped children. Classes for blind children in special day schools providing for children with a range of handicaps.

- weekly boarding at ordinary schools or special schools. By this means provision can be made for children who cannot attend school daily, but without cutting them off from their families for extended periods.

- special boarding schools. This is the traditional form of provision for blind children. Among its disadvantages are the high cost, the difficulty of

inspiring the child with confidence to venture into unfamiliar surroundings, and the emotional effects of removing of the child from his home (39).

Open education

"Open" education, or "integrated" education, offers the best line of advance for blind children in developing countries, but the form which it takes will depend on a number of factors such as availability of staff, number of blind children, density of school population, existing school provision and social attitudes. For both educational and financial reasons, systems of open education have been introduced into many countries, developed and developing, over the last twenty years. In the more developed countries the supporting personnel to the specially trained teacher - psychologists, counsellors, home advisers, medical, para-medical and domestic assistants - ensure that optimum use if made of the educational provision. This is rarely possible in the developing countries, especially in the rural areas where scattered population and limited resources preclude the formation of the necessary teams. In the situation in the developing country open education usually consists of either direct integration of the blind child into a sighted class, or, where numbers warrant it, the attachment of a small group of blind children as a unit to an established school. The class teacher receives a certain amount of in-service training to enable him to deal with one or two handicapped children in his class, and he is supported by a Visiting Teacher of the Blind who works with the children on the special skills they need to enable them to work alongside their sighted classmates. Resource centres form bases for the visiting teachers in which they can manufacture aids and teach specialist groups. In Denmark, schools with special classes or units are organised as "twin schools", so that the problem of seniority between the school headmaster and the teacher of the special section becomes one of the association of equals rather than the subordination of the specialist to the general administrator (40).

The activities of the Royal Commonwealth Society for the Blind in sponsoring and encouraging the introduction of open education schemes have played a major part in enabling the developing countries to make a start on educational provision for the handicapped at minimum cost. Some outlay on teachers' salaries and special equipment is required, but open education schemes eliminate the need for separate buildings (except for hostels in sparsely-populated areas or areas of low incidence), additional land and duplicate provision of common facilities. Open education provides the only means by which large numbers of blind children can attend school in the developing countries. Its success depends largely on a "climate of acceptance". Once started, when the sighted children and their parents can see at first hand how similar blind children are to sighted children in all respects save one, there is a cumulative increase in acceptance. It remains sadly true, however, that despite efforts at full integration it is rare for visually handicapped and fully sighted children to play together in the school compound, and infrequent for real friendships to spring up between the groups (41).

The development of open education schemes in rural areas of emergent countries shows the dual effect of direct help to the blind children and influence on public opinion. When, in 1960, the first pilot scheme was launched in the Katsina Emirate of Northern Nigeria there were many, including educationists, who considered the scheme admirable but doomed to failure. The sponsors were delighted to find that the Katsina project worked

and had much influence on the local people who, for the first time, could watch the blind and apparently hopeless child they had seen in the village for years actually learning to read and write (42).

By 1967 over 100 schools in Nigeria had accepted blind children into normal classes. By 1969 open education systems were in operation in eight Commonwealth African countries, and in Malawi the Royal Commonwealth Society for the Blind had reached the point of establishing its own permanent team for the construction of resource centres in connection with the scheme. The numbers involved in the schemes are still very small and development has been neither easy nor very rapid. In Zambia, for example, the Blind League of Zambia attempted to obstruct the development of open education, declaring in a memorandum to the 1967 Commission:

> "We have not much more to say about this scheme than condemn its less value in comparison with the expenses it involves." (43)

This is a facile and unfair criticism, met adequately by the Commission's comment:

> "We would emphasise that by opposing Open Education without good reasons the blind may well prevent large numbers of blind children from securing any education at all, since there is no possibility that Zambia will be able to afford or staff a network of residential schools large enough to accommodate all its blind children." (44).

Other criticisms have more substance. The "visiting teacher" system of open education may often be unworkable in rural areas, for example, since too much is expected of a young and inexperienced class teacher whose own limitations are accentuated by inadequate buildings and equipment (45). The "dual-purpose" system, whereby the class teacher is trained to a level of competence which makes him independent of a visiting teacher has more to recommend it, but has two major weaknesses. These are, first, that most teachers in rural areas seek transfer to the towns (and if a teacher is moved even within the school it may be difficult for him to continue to work with his blind pupils), and, secondly, a class teacher rarely has sufficient free time to give his blind pupils an effective start in the basic subjects. The "special class" system, under which the blind child works in the normal class for most of his time but receives supplementary teaching by a specially-trained teacher in an annex, probably provides the best solution in the African situation, but raises a problem of its own. In order to justify an annex some 15 children must be gathered together; this generally involves the provision of hostel accommodation with its accompanying capital and recurrent costs. Nevertheless, despite its disadvantages, open education presents the best possibility of providing education for visually handicapped children in the developing countries. This is especially true at educational levels above the primary stage.

In the developing countries the able visually-handicapped child faces great difficulties in securing a place in secondary or higher education, and a number of schemes of open education have been pioneered in recent years, in Ghana, Kenya, Malaysia and Nigeria, and other Commonwealth countries. In Tanzania, for example, boys from the Wilson Carlile School at Buiri are accepted into secondary school on equal terms with all other candidates for the entrance examination. At Nsanje in Malawi an experiment was started

to provide open education at the secondary level. Despite the absence of a specialist teacher four children were integrated successfully and taught to follow their lessons with the aid of Braillers and typewriters. In Trinidad blind children have dealt successfully with G.C.E. 'O' level and Associated Board Music Examinations after courses in ordinary schools. In Sierra Leone and Singapore, to take two recent examples, a blind young man and a blind girl are coping adequately with degree courses. All these young people demonstrate the possibilities offered by open education for the blind, but emphasise the limited scale on which such schemes operate so far.

Special schools for the visually handicapped

Special schools remain a major form of provision for visually handicapped children, partly because they are the traditional form of education for such children, partly because demographic factors make them appropriate for the area, partly because there is a body of informed opinion which believes that special schools are the most appropriate form in a wide range of circumstances. Among factors mentioned as possible reasons for placing children in special schools are: socio-economic and emotional factors, parental attitudes, travel problems, and elimination of isolation from their peer group (46). Among the advantages of special schools are the possibility of providing buildings suitably adapted to the particular needs and the concentration of the limited supply of specialist staff, teachers and auxiliaries, so enabling the maximum use to be made of their abilities. Equipment, too, can be provided in adequate quantities and varieties in the special establishment rather than in resource centres or units. The disadvantages of special schools are essentially two, political and financial. Politically, many Governments find it difficult to justify special schools for blind children when so many sighted children cannot find school places; financially, the expenditure on a purpose-built special boarding school runs considerably higher than the cost of a day-school for comparable normal children.

Some special schools for the blind in developing Commonwealth Countries

(a) CEYLON: Mount Lavinia School for the Blind, Ratmalana (47)

Mount Lavinia, with over 200 pupils, is one of the two larger schools for the blind in Ceylon, the other at Mahawewa being about one third of the size. For 35 years after its foundation in 1912 it was the only school for the blind in the country. Half a dozen poorly equipped and inadequately staffed small schools, all with enrolments of fewer than twenty children, make up the special school provision for the visually handicapped. A minority of the children at Mount Lavinia speak Tamil, the remainder Sinhalese, so that teaching must be provided in both languages. Of the 26 teachers, 15 have their salaries reimbursed by Government grant; seven of the staff are blind; three staff members hold qualifications for teaching the blind. The school suffers from the common problem of a wide range of age (from 5- to 20+) and ability in its pupils, which, in conjunction with a generally low grade of staff and a shortage of equipment, leads to slow progress through a very formal curriculum. In 1965 the school had a library of Braille books in English which had been rarely used in fifteen years, but almost none in Sinhalese or Tamil (48). Other equipment, slates, styluses, raised maps, paper learning aids, and handicraft materials were in short supply. The noise level occasioned by classes sharing rooms made listening very difficult for the pupils. Under a new Principal the school has been struggling to solve its difficulties, supported by a genuinely interested staff.

(b) INDIA: The Model School for Blind Children, Dehra Dun (49)

This school, opened in 1949, is situated at Rajpur, three miles from the Government sponsored National Centre for the Blind at Dehra Dun, under whose auspices it is organised. It does, however, have its own management body. Some 70 children are provided with free education, board and loding, following admission between the ages of 7 and 12. Efforts are made when considering children for entry to determine their level of intelligence and establish their degree of self-reliance. The school curriculum is that of the normal State primary schools, but in addition occupational therapy and music is taught. The medium of instruction is Hindi, with English taught as a second language. During 1966 an I.L.O. expert mapped out a suitable technical course for the school, recognising that provision would be needed beyond the existing class VIII (50). Although the school now offers a full secondary course, the problem of finding employment is so great that the teaching of simple engineering skills to those children who have some technical aptitude seems to be highly desirable. Such a course would be complete in itself but also form the basis of more advanced work.

(c) KENYA: Salvation Army Schools for the Blind, Thika (51)

There were in 1969 over 200 pupils in the primary school, with an age-range from 6 to 16 years, and 45 pupils in the secondary school aged from 15 to 22 years. Included in the primary school are additional groups: a nursery group of children of between 1 and 4 years, a kindergarten catering for children from 4 to 6 years, a domestic science group wit girls from 14 to 21 years, and a sheltered workshop for boys fo the same age-group. Prospective pupils are given an eye examination; if the blindness is total, or of such a degree that they are entitled to admission, they enter at the beginning of a new term. (Pre-school children can join at any time). The major problem is finding employment for primary school leavers. No specific system has been established and only five ex-pupils were placed during 1969. The pupils who pass the Certificate of Primary Education with the highest marks are interviewed for admission to the secondary school, and undergo an aptitude test. The first students from the secondary school were due to complete their course at the end of 1970, and the Kenya Society for the Blind had promised help in securing employment for them. The success or otherwise of this placement will have a considerable bearing on the confidence of other pupils in the school.

(d) MALAYSIA: St. Nicholas' School and Home for the Blind, Penang (52)

Formal special education in Malaysia began in 1926 when the Anglican Mission set up this school, which even now is one of only two residential schools for the blind in West Malaysia. The primary school and kindergarten currently have some 80 children enrolled, aged from 5 to 16 years, and follow the same government syllabus as ordinary schools. Although the same subjects are taught, greater emphasis is placed on such subjects as physical education, handwork, music and mobility. Braille reading and writing is taught. During the afternoons children enjoy a wide range of activities including Cubs and Brownies, a pets' club, gardening, and a weekly trip to the swimming pool, while the school's electric guitar group enjoys wide popularity. The staff believe that the main results of the school lie in the proof which it offers that blind children can participate fully in normal life. Some children have already succeeded in secondary school and university, one having graduated in law and another taking a postgraduate qualification in education.

(e) SIERRA LEONE: Sir Milton Margai School for the Blind, Freetown (53)

The school opened in temporary accommodation in 1956 with three children. In 1970 it occupied its own residential buildings and had an enrolment of 25, including three girls. Since 1963, some pupils leaving the school have found places in secondary schools in Freetown. Of the three initial pupils one is a third year undergraduate at the University of Sierra Leone and another is due to start a three-year course at the Women's Training College. In 1970 six more pupils found places in secondary schools, but since the cost of their equipment (typewriter, tape-recorders and tapes) is met by the local Society for the Blind, the success of these pupils incurs a heavy financial burden on these voluntary funds. The Society also helps school leavers to find employment. A group of boys has formed an orchestra, which provides them with a modest means of lifelihood.

(f) TANZANIA: Wilson Carlile School for Blind Boys, Buigiri (54)

This school was started in 1950 by the Church Army. By 1969 it contained 70 boys from all parts of the country, generally from poor homes. A seven-year course of general education is provided, and all boys learn both Swahili and English Braille, the latter to enable them to go on to secondary and higher education. (All post-primary education is integrated in normal schools). The stigma attached to blindness in this area is such that, despite a high incidence of visual handicap, prospective pupils still have to be sought out and their parents covinced that it is possible for such children to be educated. One or two boys have had some measure of sight restored through corneal grafting or cataract operations. Of the staff of seven, 5 are blind men. The boys pay no fees and, in addition to a Government grant, the school is heavily subsidised by voluntary donations collected locally and in Britain.

(g) TRINIDAD: School for Blind Children, Santa Cruz (55)

The school is owned and operated by the Trinidad and Tobago Blind Welfare Association and is fully subsidised by the Government as a co-educational, residential, non-denominational primary school. Started with eleven children in 1952, the school now caters for 48 pupils, including 19 from other Caribbean countries. The staff of seven is fully trained, and the curriculum followed is that prescribed for ordinary schools, modified where necessary to meet the needs of the blind child. The children are admitted at 5 years and are now allowed to stay until they are 18 because vocational training is not available elsewhere. Much emphasis is laid on mobility training, during which children learn to go unaided between the school and the nearest village, about one mile away. Physical education, swimming, scouts and Brownies, domestic training, a Literary Club, all are designed to promote confidence and independence. School leavers now have the opportunity of finding places in ordinary secondary schools; the less able academically are given simple vocational training. While the school suffers from financial difficulties it is providing its pupils with the basic educational provision necessary for them to play a full part in their communities.

(h) ZAMBIA: St. Mary's School for the Blind, Kawambwa (56)

The Roman Catholic Mission maintains this school of 95 pupils, one of the best in Zambia, opened in 1963. The McGregor Committee considered the buildings, hygiene, equipment, administration, teaching standards and

pupils' work all excellent. A staff of 11, with 6 ancillary staff, provide a full primary course, giving their pupils a balanced training to fit them for active membership of the community to which they return, a training on which they can build without further formal education.

(i) BAHAMAS: School for the Blind and Visually Handicapped, Grants Town (57)

Originally designed to cater for the adult blind, the need arose to provide for children suffering from visual defects following an outbreak of rubella some years ago. The children are partially sighted but have made little progress in overcrowded Government primary schools. Most of the children have been referred to the school by a Government ophthalmologist. The average age is 8 years. A general curriculum is taught with the aid of magnifying glasses and tape recorders. The children have all made marked progress, probably because of the small classes and individual attention. Job prospects for the children in open employment are good. There are no hostel facilities at the school, making it impossible to offer places to children living in scattered settlements throughout the Bahamas Islands. A survey conducted with the co-operation of the Ministry of Education indicated a positive need for facilities for blind and partially sighted children in the Out Islands, but such children at present can be helped only if they can find accommodation with friends or relations in Nassau.

Specialist teachers of the blind

The training of specialist teachers is generally expensive, involving tutors in work with small groups of students on special courses, although certain traditional attitudes persist which believe that the best and most realistic training is achieved through the attachment of students to residential special schools. This belief is based on a conviction that on-the-job practical training rather than theoretical instruction gives a more valuable base for the prospective teacher of the blind. The extent to which this is true depends upon the length of previous teaching experience and the professional training which the student has already. "Experience is the primary eligibility criterion. A superior regular teaching experience of at least two years is generally required" (58). Unfortunately, it appears that in South-East Asia at present few experienced teachers offer themselves for work in special education, so that the prime criterion is rarely enforceable.

Incentives, therefore, must be provided to induce suitable teachers to come forward for training. These should include full salary and free accommodation during the period of training, and special salary bonuses once qualified and working with blind children. Since some at least the teachers may judge their long-term prospects as likely to be hindered by their specialisation in a backwater of education, their reward must be tangible and immediate. The Governments of Jamaica, for example, and of some Indian States such as Orissa and Mysore, already subscribe to this policy. The Government of Malaysia is considering a similar arrangement, since at present it is recorded that some teachers serve only the two-year contractual period in schools for the blind following their training, after which they seek promotion elsewhere. "Bonding" arrangements in an attempt to retain teachers are rarely successful because they can be enforced only with great difficulty, and, even if a reluctant teacher is thus retained for a limited period his value must be very questionable. The only appropriate means by which to attract and retain teachers of the best calibre is through the provision of financial incentives, a full career structure in special

education, and the inculcation of a sense of status within the education profession.

Training facilities for teachers of the blind are few in the developing countries of the Commonwealth, many countries relying for the training of staff on courses in the more developed countries. Many teachers are trained in Britain, sponsored and placed usually by the Royal Commonwealth Society for the Blind, or supported by Commonwealth Teacher Training Bursaries. Homai College, New Zealand, has offered training to a teacher of the blind from Fiji, while teachers from Jamaica and Singapore have specialised in work with the deaf-blind at the Perkins School, Watertown, Massachusetts, U.S.A. The American Foundation for Overseas Blind ha s provided a number of scholarships and bursaries for such courses.

Special courses for teachers of the blind are available in Ceylon (but blind teachers are not admitted to the course), Malawi, Malaysia, Tanzania, Uganda and Hong Kong, and planned for Zambia, while in a number of oth countries training is provided for teachers who are to take part in open education schemes. In Tanzania training is provided according to the traditional pattern by attaching the student to a residential special school; in the other countries the courses are located in special training colleges or university departments. The cause of economy would best be served by the further development of existing courses to cater for the needs of neighbouring countries. Montfort College in Malawi has attempted this, and students still attend from Swaziland, but political and other circumstances have so far precluded the development of regional co-operation on a wide scale.

Training so far has reached only a few of the teachers of the blind in developing countries. Schools generally are staffed by a few specialists, a number of untrained teachers, and, very often, some untrained blind persons. This last practice has been condemned frequently by experts who emphasise that a blind teacher should never be engaged solely to provide him with employment, since this can have a deleterious effect on the children with whom he may identify emotionally and yet whom he cannot necessarily teach effectively (59).

Equipment, aids and appliances

The blind person's two greatest problems are those of mobility and communication, and it is to help him overcome the obstacles to these achievements that most specialised equipment is designed. Mobility can best be taught with the long or short cane, which can usually be made available at little cost. In many schools for the blind in developing countries, however, educational equipment is either non-existent or inadequate, like the English Braille books in the Ceylon school where the children speak only Sinhalese or Tamil. While the sighted child may suffer inconvenience from inadequate educational equipment, the blind child in these circumstances is virtually helpless, incapable of achieving independence, self-confidence and dignity.

Equipment for the blind is relatively costly, ranging from six shillings for a Braille tape measure, through £4-10s. for a Braille watch and £48 for a Perkins upward Braille writing machine to £2000 for a power-driven Braille printing machine. These prices may be contrasted with the average expenditure on equipment of £2 per pupil in the schools for the blind in Zambia (60). Many schools are severely restr cted in their activities because of insufficient equipment or unsuitable equipment. Braille writers are needed by pupils at secondary level even if they can make do with a simple

stylus in the early stages of the primary school. Large-print books for the partially sighted, and, for the blind, Braille books of the right level and in the right language are essential basic materials. Centralised book production on a commercially economic scale and area or regional library services appear to offer the best solution to this problem. In Hong Kong, for example, a Braille printing press, donated by the United States Government through the A.F.O.B. is run by the Ministry of Education. Over 7,000 volumes of more than 100 types of book have been printed and supplied to schools. Schools pay 10% of the cost, the remainder being borne by the Government. As a result schools can now purchase Braille books at a cost comparable to that of ink-print publications.

Where the equipment can be processed another valuable aid is the talking book. A triple play $\frac{1}{4}$ inch tape and six-track layout, each track playing for a little over two hours, gives a total of 13 hours of recorded speech. Publishers frequently waive copyright fees provided that the recording is supplied in a form which cannot be used on an ordinary tape player (61). The Royal Commonwealth Society for the Blind sponsors numerous talking book services, such as those in Barbados and Ceylon.

For work at secondary and higher levels, where young people may not be able to attend formal school regularly in the circumstances pertaining in a developing country, one solution may lie in the type of provision available from the Hadley School for the Blind (62). This international free correspondence study school provides a wide range of courses at primary and secondary level, as well as some introductory college courses, prevocational, vocational and leisure courses. All courses are offered free of charge, the school being supported by charitable funds. Regional offices have already been established in India and Kenya as well as in several non-Commonwealth countries. This system, while not providing the personal contacts and social facilities needed by blind youngsters, does offer an opportunity for self-advancement to the literate blind. Used as support by non-specialist teachers who are dealing with integrated classes at secondary level, correspondence courses can ensure that the maximum use is made of the blind pupils' potential.

At the primary level children can benefit from teaching if only three types of simple equipment are available, a Braillette Board (for beginners), a Writing Frame and supply of manilla paper, and a Cranmer Abacus. Other apparatus, such as Braille multiplication tables, audible balls, Braille maps and Braille rulers, are very desirable, but where a choice has to be made, the first three items take priority (63). Outdoor apparatus, such as ropes, bean bags and hoops, handicraft equipment, games and puzzles, household articles, are all of great value in teaching the blind child confidence and independence. Many items can be manufactured locally, often at low cost, particularly if the prison service can be convinced that this is appropriate work for its inmates. Following an International Conference on Technology and Blindness in 1962 an International Research Information Service (IRIS) was set up in New Hork, with a section in London (64). Early in 1971 a permanent exhibition of aids for the handicapped was established in London. These services, if used regularly by Commonwealth workers for the blind, can do much to help towards maximum efficiency at minimum cost.

Proposals in respect of the blind

As for most other handicaps, the main problem lies in the lack of reliable data upon which to found plans, although, because interest in the blind was

manifested before interest in other handicaps, some information does exist upon which patterns and trends can be based. Surveys should be undertaken to establish the incidneces of blindness and partial sight and the likely major causes; such surveys can often be carried out by senior students or teachers in training. The causes are likely to originate in poor hygiene, unsuitable diet and ignorance, so that campaigns directed at these causes can be expected to have a consequential effect. Public enlightenment campaigns can also usefully be directed at the prevailing attitudes towards blindness. Where blindness is treatable, as in the case of cataract, mobile eye-clinics and eye-camps should be sought, calling probably on the great experience of the Royal Commonwealth Society for the Blind in this work. On a long term basis the establishment of regional ophthalmological institutes should be encouraged.

All teachers, in their initial training or in subsequent in-service training courses, should be made aware of the problem of visual handicap and taught to recognise both the manifestations of inadequate sight and the symptoms of the most usual causes. Specialist teachers should be encouraged to think of work among handicapped children as a full career; incentives in the form of additional increments and increased status should be considered by employing authorities.

While special boarding schools will continue to perform a useful function, especailly in areas of low incidence or sparse population, it should be recognised that the only feasible means for providing large numbers of visually handicapped children with education is through association with normal schools by open education schemes. Where numbers warrant it, special units or annexes should be attached to ordinary schools. Resource centres, manned by competent specialist teachers and serving a group of schools, represent the most efficient and economical means of using limited supplies of specialised skills and equipment. For secondary and higher level students the increased use of correspondence courses should be investigated.

All visually handicapped children need to acquire mobility and the means by which to communicate. Mobility and independence are essential for the child's self-respect. Basic equipment, a cane and writing materials, should be made available to all pupils. Other equipment can be produced economically either by central production on a large scale or by using labour such as that available in prisons in many developing countries. Regional centres for the manufacture of Braille books should be established. Where materials are to be despatched between countries, governments shoudl be encouraged to adhere to the provisions of the Florence Agreement, which requires contracting states to allow such materials to be sent at reduced postal rates and without the imposition of any taxes or duties.

Existing clearing houses for information should be publicised widely and a series of booklets on particular aspects of the treatment, education and equipping of the blind should be considered. A Commonwealth journal for special education, in which the visually handicapped would be adequately represented, could ensure that relevant information about research, development and innovations is made known on the widest possible scale.

Educational activity on behalf of the blind has in the past been conducted largely without reference to developments in other forms of special education. Future improvement will almost certainly depend on the willingness with which those working on behalf of the blind co-operate among themselves and with those involved with other handicapped children.

Notes and References:

1. Approximate figure based on estimated world incidence of the American Foundation for Overseas Blind.

2. Data from the Royal Commonwealth Society for the Blind.

3. Woods, G.E. "The importance of early clinical assessment", Proceedings of the Fourth International Seminar on Special Education, New York, ISRD, 1969, p.46.

4. Ibrahim, Pajir, "The causes of blindness in children in the Middle East,"Report of a Seminar on Special Education for Blind Children, 25 August - 27 September 1969, Denmark, Paris, Unesco, 1969, Chapter II, p. 15.

5. Forty Facts about Blindness, London, Royal Commonwealth Society for the Blind, 1968.

6. Royal Commonwealth Society for the Blind, Newsletter, August 1969.

7. Wilson, J.F. "Blindness in Africa", Report of the First African Conference on work for the Blind, Lagos, Nigerian National Advisory Council for the Blind, 1966, p.9.

8. Carter, D.L. "The progress and possible further development of work for the blind in Central Africa", Report of the First African Conference on Work for the Blind, Lagos, Nigerian National Advisory Council for the Blind, 1966, p.p. 24-25.

9. Wilson, J.F. op.cit. p.9.

10. Wilson, J.F. "Blindness in Commonwealth Caribbean Countries", Report of the Caribbean Commonwealth Conference on work for the Blind, Trinidad and Tobago, n.p. 1967, p.23

11. Johnson, O. "Prevention of Blindness", Report of the Caribbean Commonwealth Conference on Work for the Blind, Trinidad and Tobago, n.p.1967, p.62.

12. Kenmore, J.R. Survey Report on the Education of Blind Children in Ceylon, New York, American Foundation for Overseas Blind, 1966, p.6.

13. Wilson, J.F. "Blindness in Africa" op.cit., p.8.

14. Sinnette, C.H. "The handicapped child in tropical Africa," Courrier: Revue Medico-Sociale de l'Enfance, XX,4, July-August 1970, p.339.

15. Wilson, J.F. "Blindness in Africa", op.cit., p.8

16. Sinnette, C.H. op.cit., p.339.

17. Wilson, J.F. "Africa's Blind Children", Taylor, A., and Butcher, F.H. (eds), Education of the Blind in Africa, Ibadan, n.p., 1964, p.1.

18. Quarcoopome, C.O. "Prevention of blindness in Africa," Report of the First African Conference on Work for the Blind, Lagos, Nigerian National Advisory Council for the Blind, 1966, p.112.

19. Wilson, J.F. "Blindness in Commonwealth Caribbean Countries", op.cit, p.24.

20. Lees, M. "Blind Welfare Work in Bermuda", Report of the Caribbean Commonwealth Conference on Work for the Blind, Trinidad and Tobago, n.p. 1967, p.57.

21. Wicks, S.B. "Education of blind children throughout the area in special or ordinary schools," Report of the Caribbean Commonwealth Conference on Work for the Blind, Trinidad and Tobago, n.p., 1967, p.66

22. Phillips, M. "A background paper on blindness", McGregor, G.P. (et al), Educating the Handicapped. The Report of a Special Committee of Enquiry into the Education and Training of the Handicapped in Zambia, Lusaka, Government Printer, 1967, Appendix 4.

23. Kodilinye, H.C. "Prevention of blindness", Report of the First African Conference on Work for the Blind, Lagos, Nigerian National Advisory Council for the Blind, 1966, p.105.

24. Wilson, J.E. "Blindess in Africa" op.cit., p.9.

25. Aujoulat, L.P. "Facts on health and disease in the developing countries", paper submitted to the Seminar on Deprivation and Disadvantage in Developing Countries, Hamburg, Unesco Institute for Education, 1969, p.7.

26. First Annual Report, Montfort College, Malawi, 1968.

27. Anderson, E.M. The Education of Physically Handicapped, Blind and Deaf Children in East Africa, London, National Fund for Research into Crippling Diseases, 1968, p.90.

28. Bourgeault, S.E. Integrated Education for Blind Children Kuala Lumpur, American Foundation for Overseas Blind, 1970, p.6.

29. Langan, W. "Visual perceptual difficulties", Mittler, P.(ed) The Psychological Assessment of Mental and Physical Handicaps, London, Methuen, 1970, p.391

30. Bourgeault, S.E. op.cit. p.7.

31. Mao Lian-Wen, "Locating, identifying and evaluating blind children for educational programmes," Conference Proceedings of the Third Asian Conference on Work for the Blind, Kuala Lumpur, American Foundation for Overseas Blind, 1968, p.p.59-74.

32. Salisbury, G. Open Education, London, Royal Commonwealth Society for the Blind, 1965, p.14.

33. Mackay, A, and Rigby, F. Kenya's Blind Tanners, London Royal Commonwealth Society for the Blind, 1961, p.8.

34. Van Weelden, J. "The being different of the blind person," Report of a Seminar on Special Education for Blind Children 25 August - 27 September 1969, Denmark, Paris, Unesco, 1969, Chapter II, p.79.

35. Dunnell, E. "Extra-curricular activities", Handicapped Youth: Preparation for Life and Work, Sydney, Australian Council for Rehabilitation of the Disabled, 1969, p.177.

36. Langan, W. op.cit., p.393.

37. Villeneuve, P. Education for Handicapped Children? Paris, Unesco, 1970, p.45.

38. Langan, W. op.cit., p.377.

39. Paaske, V. "Five different types of educational systems for the blind children," Report of a Seminar on Special Education for Blind Children, 25 August - 27 September 1969, Denmark, Paris, Unesco, 1969, Chapter II, pp.89-93.

40. Jorgensen, I. Skov. "Developments towards a coherant system of education for the handicapped," mimeo, 1970, p.7.

41. Langan, W. op.cit., p.390.

42. Cookey, S.J. "Open education in Nigeria", Report of the First African Conference on Work for the Blind, Lagos, Nigerian National Advisory Council for the Blind, 1966, p.52.

43. McGregor, G.P. (et al), Educating the Handicapped, The Report of a Special Committee of Enquiry into the Education and Training of the Handicapped in Zambia, Lusaka, Government Printer, 1967, p.21.

44. McGregor, G.P. op.cit., p.32.

45. Anderson, E.M., op.cit., p.83.

46. Langan, W. op.cit., p.392, quoting the report of the Standing Committee of the National Society for the Prevention of Blindness, New York, on 'Research Needs Related to Partially Seeing Children", 1954.

47. Kenmore, J.R. op.cit., pp.16-23.

48. Kenmore, J.R. op.cit., p.21.

49. Report to the Government of India on the Vocational Rehabilitation of the Blind, ILO/OTA/India/R.21 Geneva, International Labour Office, 1967, pp.8 and 14-15.

50. ILO Report op.cit.,pp.53-57.

51. Information supplied by the Salvation Army.

52. Information supplied by the Ministry of Education, Kuala Lumpur, the British Council and the Church Missionary Society.

53. Information supplied by the Sierra Leone National Council for the Handicapped.

54. Information supplied by the Church Army.

55. Knox, J.P. "Existing provision, and provision which should be made for the education of blind chi dren in the Eastern Caribbean area, in special schools for the blind," Report of the Caribbean Commonwealth Conference on Work for the Blind, Trinidad and Tobago, n.p., 1967, pp.70-72.

56. McGregor, G.P., op.cit., and information supplied by the proprietor.

57. Begley, I.T. "The work of the Salvation Army School for the Blind and Visually Handicapped in Nassau, Bahamas," Report of the Caribbean Commonwealth Conference on Work for the Blind, Trinidad and Tobago, n.p., 1967, pp.52-54., and information supplied by the Salvation Army.

58. Bourgeault, S.E. Preparing Teachers of the Blind in Asia, Kuala Lumpur, American Foundation for Overseas Blind, 1970, p. 11.

59. Kenmore, J.R. op.cit., p.22.

60. McGregor, G.P., op.cit., p.50.

61. Dharmarajan, S. "Science helping the blind to 'see' ", Yojana, Delhi, 16 November, 1969, p.12.

62. Bulletin 32: A World of Knowledge: (List and Description of Courses). The Hadley School for the Blind, 700 Elm Street, Winnetka, Illinois 60093, U.S.A.

63. McKean-Taylor, G. "Training of Teachers of the blind in West Africa," Taylor, A., and Butcher, F.H. Education of the Blind in Africa, Ibadan, 1964, p.13.

64. Colligan, J.C. "Literature, equipment and appliances available for the use of the blind", Report of the First African Conference on Work for the Blind, Lagos, Nigerian National Advisory Council for the Blind, 1966., p.58.