CATEGORIES OF CAUSES OF BLINDNESS.

Congenital defects or disorders.
Myopia and sequelæ.
Inflammatory diseases and sequelæ:—
   Ophthalmia neonatorum.*
   Purulent conjunctivitis of later years.*
   Trachoma.
   Superficial keratitis.
   Interstitial keratitis.*
   Iritis and irido-cyclitis.*
   Choroiditis.*
   Optic neuritis.*
Tumours or malignant disease:—
   Ocular.
   Intra-cranial.*
Degenerations and vascular diseases:—
   Retinitis.
   Retinitis pigmentosa.
   Central senile choroiditis.
   Glaucoma.
   Cataract.
Accidents or toxic effects, and their sequelæ:—
   Casual.
   Industrial.
   War.
Cause unknown.  * (If possible note whether due to V.D. or not.)"
and he begged Mrs. Hathaway, Associate Director of the National Society, who had undertaken a long journey in order to attend this meeting, to express to her colleagues, her earnest gratitude.

Finally, he reminded his audience that the present meeting was devoted to the creation of sight-saving classes and he mentioned the names of the eminent experts who had kindly consented to take part in the discussion: Mr. Bishop Harman, the founder of sight-saving classes, Mrs. Winifred Hathaway, of the United States, Professor Bartels (Dortmund), Dr. Dufour (Switzerland), Dr. Redslób (Strasburg).

Professor Villey explained eloquently the reasons for which the adoption is necessary of special educational methods for children who do not see well enough to follow ordinary classes yet see too well to be sent to institutions for the blind. He declared that while a great deal has been done for the blind child in most countries, very little has been done for partially seeing children.

Dr. Humbert, General Secretary of the Association, then read the report of Mr. Bishop Harman, who was prevented from attending the meeting. Mr. Bishop Harman stated that it was his duty of inspecting children in schools for the blind, maintained by the London Education Authorities, which first brought home to him the difficulties of these children who are neither blind nor well-sighted and for whose education and training there was no appropriate provision. He found that no less than 6 per cent. of the children in these blind schools were myopes but were not blind and would probably never become blind.

The first sight-saving class was created in London in 1908. To-day there are in London 37 classes in 15 centres with a roll of 180 children. There are also 100 places for myopes in five schools for higher education.

An examination of the records of a large number of children who have been in the classes shows that they fall into three groups:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myopia</td>
<td>62.62%</td>
</tr>
<tr>
<td>Damage done by inflammation</td>
<td>30.35%</td>
</tr>
<tr>
<td>Congenital defects</td>
<td>7.05%</td>
</tr>
</tbody>
</table>

The author laid stress on the aggravation of myopia during the school period. At first the standard for children admitted to these classes was set at 6/18 with glasses, but it was soon found that many with worse vision than this could satisfactorily join in the classes; when the vision is less than 6/24 it is better to exclude these children from sight-saving classes.

A child, of 5 years with 5 D. of myopia, especially if there is an inclination to increase of the defect, is certainly in need of special treatment. On the other hand, a child with 7 D. who is 13 years old, and is shortly due to leave school, may well be left in the ordinary school, under special supervision and exemptions as regards
work. At the outset these classes were affiliated with the ordinary schools and, as far as possible, the children in the classes took the same oral teaching with the normal children. Gradually under the influence of the teaching profession and modern educational methods, these classes became completely separate. There is a tendency, however, for economic motives, to return to the original system.

The author thinks that the real proportion is not less than one short-sighted child for every five-hundred school children. Estimates from the United States agree with these figures.

Mr. Bishop Harman advocated mainly oral teaching and manual work; he was not in favour of the publication of special books for these children, as the medical aim was to secure a good education for the children with the least risk, and at the same time, to cultivate a life habit of not reading.

Among the occupations for the partially sighted he advocated pharmacy, housework, farming, nursing, massage, gardening, etc.

Mrs. Winifred Hathaway, Associate Director of the National Society for Prevention of Blindness in the United States, mentioned that it was Edward A. Allen, Director of the Perkins Institute for the Blind, who first conceived the idea of instituting special educational methods for the partially sighted in his country.

The first sight-saving class in America was created in Boston in April, 1913. To-day there are 409 sight-saving classes in the United States representing 118 cities and 22 States.

Following a meeting at the University of Chicago of oculists and education authorities, the following rule for the selection of children to be sent to sight-saving classes was adopted.

Children with a visual acuity of 20/70 (6/21) or less in the better eye after proper refraction.

(a) Children in elementary schools with four or more dioptres of myopia.

(b) Inactive, subsiding (or regressive) cases of interstitial or phlyctenular keratitis, optic neuritis, trachoma, etc.

Children with a visual acuity of 6/60 will not in all probability be able to use sight-saving class equipment and are recommended for Braille work. The proportion of children requiring the advantages of sight-saving classes is 1 to 500 or 1,000 school children.

The author was distinctly in favour of mixing up as far as possible the short-sighted children with their normally sighted school-fellows.

According to the system in use in 90 per cent. of these schools in the United States, these children follow separate classes for all work necessitating close use of the eyes. They join the normally sighted children for all other lessons such as singing, music, acting and other activities of the common programme.

Mrs. Hathaway insisted on the proper lighting, decoration and furnishing of the school-room. Artificial lighting must meet the
same requirements as natural lighting, sufficient illumination for
the type of work to be accomplished, well diffused, well distributed
and without glare.

The subjects taught in the special classes include reading, writing
arithmetic, handiwork and typewriting. The so-called social
subjects—geography, history, natural science, appreciation of music
and singing are taught in the regular classes in common with the
normally sighted children, but the preparation for these subjects is
done by the sight-saving class teacher.

Approximately 4.5 per cent. of the pupils of sight-saving classes
can, later on, go back to the ordinary classes.

In some districts where the transport facilities are good, rural
sight-saving classes have been established.

A few attempts have been made in view of the vocational training
of these cases, but much remains to be done in this line.

In America 14 States have appropriated out of their school
budget a special subvention for sight-saving classes.

Mrs. Hathaway concluded by saying that the aim to be achieved
was not so much to multiply these classes as to render special
education unnecessary through the reduction of the number of
partially sighted children by proper methods of sight preservation.

Professor BARTELS (Dortmund) explained the motives which
made special educational methods indispensable for partially sighted
children. He considered that only a myope whose sight between
6 to 8 years of age was −8 D. must attend a sight-saving class.
Children with a lower degree of myopia are only exceptionally
admitted to these classes. He observed that in Anglo-Saxon
countries myopes with −4 D. are sent to sight-saving classes.

He agreed with previous speakers that only mentally normal
children may be admitted to these classes. He also agreed with
them in estimating the rate of these children at one to two per
thousand school children. This figure, he stated, was much higher
if one admitted children with −4 D. of myopia.

At a Congress of teachers in blind schools in Germany it was
stated that the number of children brought up in these schools
who ought to attend sight-saving classes had been estimated at
one-fifth.

The detection of children with weak eyesight takes place in
Germany by means of medical school inspection. Teachers in the
primary schools must examine the children periodically according
to a set formulary, as many children become shortsighted during
the school period. Children with defective eyesight pointed out by
the teacher are submitted to an examination by an ophthalmologist.
So far it has been noted that approximately 10 per cent. of these
children are candidates for the sight-saving class. In the country
the detection and education of partially sighted children are beset
with great difficulties.
The author mentioned three methods of education for these children.

1. Independent sight-saving schools.
2. Sight-saving schools annexed to institutes for the blind.

The last method has the advantage of bringing together partially sighted and normal children. However, the author is of opinion that only proper sight-saving schools permit an accurate adaptation of educational methods to the sight of each child so as to obtain the maximum result from such teaching.

In Berlin there are at present three sight-saving schools including 350 pupils and 24 classes.

The special school in Dortmund has received 58 children and includes five classes. Of the 25 children who have finished their classes, five have returned to the ordinary school and two have been transferred to a higher class.

Educational expenses, although rather higher in sight-saving than in ordinary schools, are however, far below the cost of teaching a blind child.

In Germany, teachers in sight-saving classes are expected to follow a post-graduate course of one year at the Pedagogic Institute in Berlin. The author did not think it is possible to get good teachers for this special form of education with the six-weeks' course which is adopted in other countries.

From the educational standpoint, the author described with great detail, the manner in which these children are taught to read and write. One method he said, was with large characters of 10 centimetres cut out of cardboard and covered with cotton stuff which the child learns to distinguish by touch. Later, one uses letters in yellow material on a blue background or black on yellow, the capital letters being 10 centimetres in length and small letters 6/7 centimetres. Gradually the child is taught to recognize the smaller letters. The only reading books for short-sighted children in Germany are the four books of the special schools in Hamburg. The author mentioned that reading and writing presented special difficulties for the partially sighted in Germany on account of the fact that these children have to learn not only the Latin but also the Gothic letters.

In Germany, as everywhere else, one has attempted to train these children in manual work. This training is beset with many obstacles and in some cases the only resource is to send these children to a vocational school for the blind.

Dr. A. DUFOUR (Lausanne) stated that it was in the spring of 1925 that the first sight-saving class was opened in Switzerland at Zürich. The second one was started in 1930 at Bâle.

In both these cities special teaching is carried out according to
the following principles, which have been adopted since 1918 by the Central Swiss Union for the Welfare of the Blind.

(a) Sight-saving classes admit children from 6 to 14 years of age, whose visual acuity in the better eye after correction, is below 0.2 (Bâle has admitted 0.5).

(b) These children are admitted with the consent of their parents on the recommendation of the teacher, the school medical inspector and an ophthalmologist.

(c) The classes, which must not exceed 20 pupils, are periodically visited by an ophthalmologist.

(d) The teaching methods are adapted to the degree of development of the child and are therefore quite individual, attempting to spare his weak eyesight by being chiefly oral. While developing the senses and organs one endeavours to strengthen the physical, intellectual and moral condition.

The benches in the schoolrooms have backs, the desks are adjustable and each carries its own blackboard. Books printed in thick letters are used and a magnifying glass is employed when reading from the books of the ordinary school.

Dr. Redslob (Strasburg) stated that one of the earliest sight-saving classes had been created in 1911 at Strasburg. The Municipality maintains these schools, it even supports the expenses of tramway fares for children who need to be taken from Strasburg to St. Thomas, where the school is situated. The selection of children for admission to the school is made in the following way:

A first selection is made by the medical inspector of the municipal schools, who examines every year the eyesight of school children.

Those with very defective eyesight are referred to Dr. Redslob, Ophthalmologist and Medical Inspector of the municipal schools, who has assumed this task since the school was created and decides, from a medical point of view, whether the child should be admitted. As a basis, Dr. Redslob assumes that a pupil whose visual acuity in the better eye is equal or inferior to 2/10 should be admitted to a sight-saving class with certain individual exceptions according to the result of the medical examination. These figures have been adopted in other countries which have followed the lead given by Strasburg. On the other hand, children whose better eye only perceives fingers at a distance of 1 metre are sent to an institute for the blind.

Since the creation of this special school one has been able to withdraw from the Institute for Blind Children a number of pupils who have been sent to the sight-saving classes, greatly to their advantage.

The meeting was followed by the projection of a documentary film on sight preservation among children and an exhibition of schoolroom material brought from England by Miss Young, from the United States by Mrs. Hathaway and from Germany by Professor Bartels.