

## **Medical notes for school teachers / by C.W. Hutt.**

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MEDICAL NOTES FOR  
SCHOOL TEACHERS

C. W. HUTT

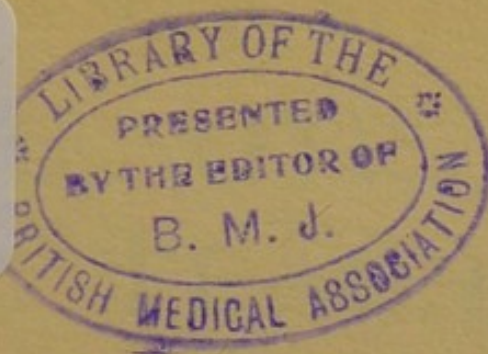
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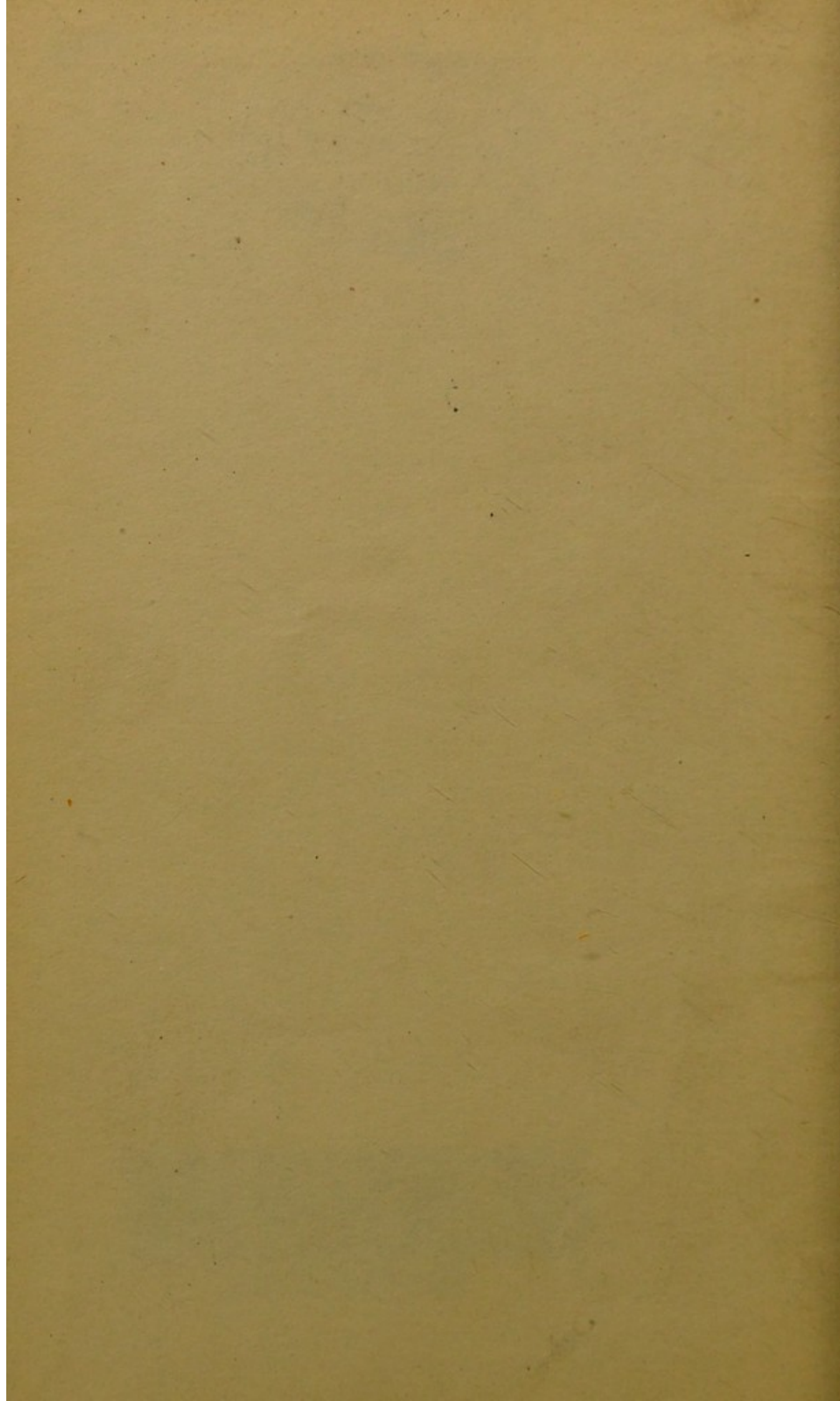
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# MEDICAL NOTES FOR SCHOOL TEACHERS

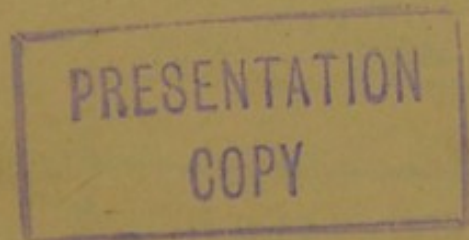
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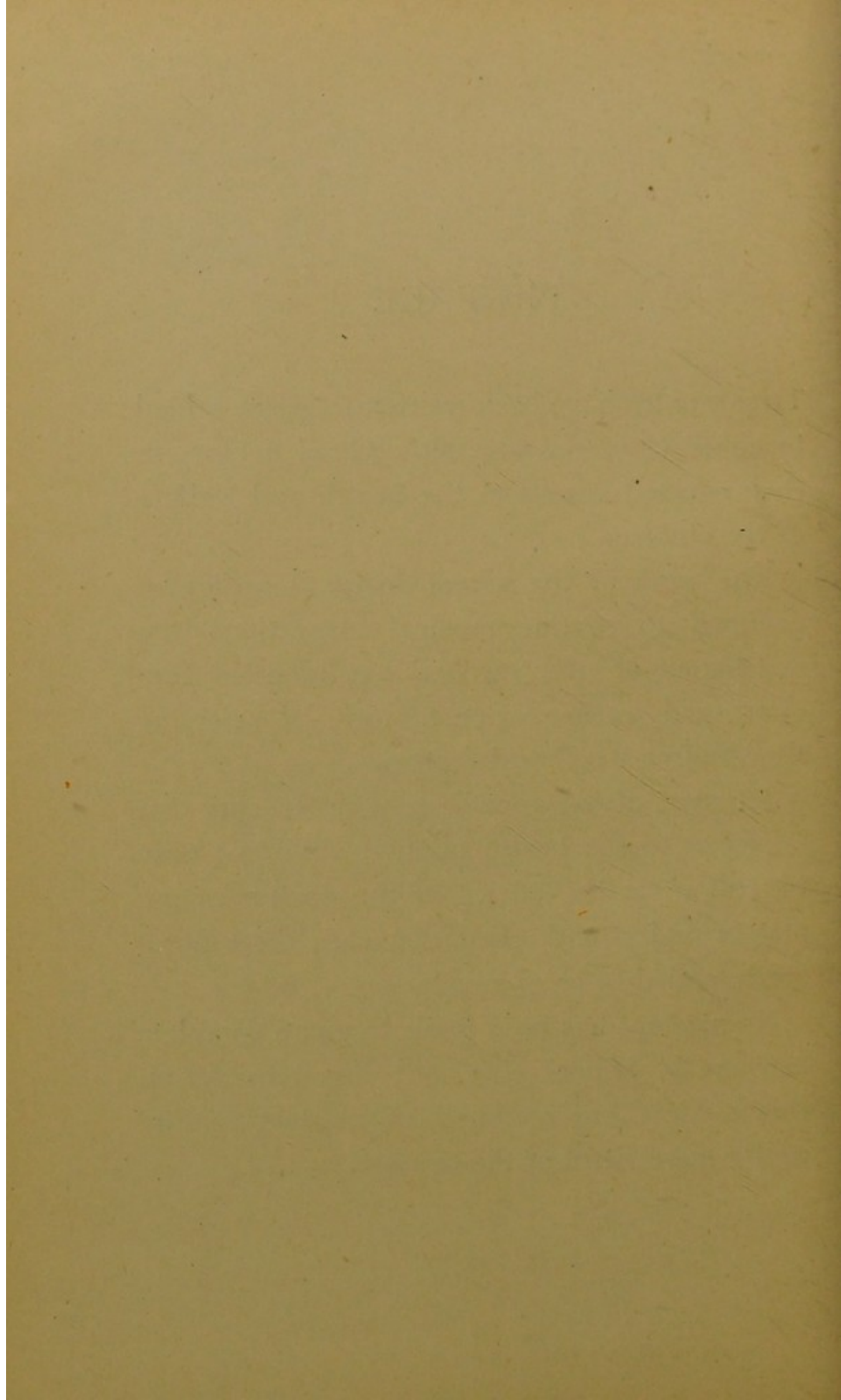
## PREFACE

THESE notes have been written to assist school teachers to co-operate with school doctors in their efforts to promote the health and welfare of the children.

The work of the school doctor is no longer confined to routine medical inspection; the assistance of the teacher has afforded him other and earlier opportunities of selecting the children who are defective.

Parents often appeal to the teacher for advice as to the health of their children; only too often is the advice of the doctor incompletely understood. In either case these notes are intended to be of assistance.

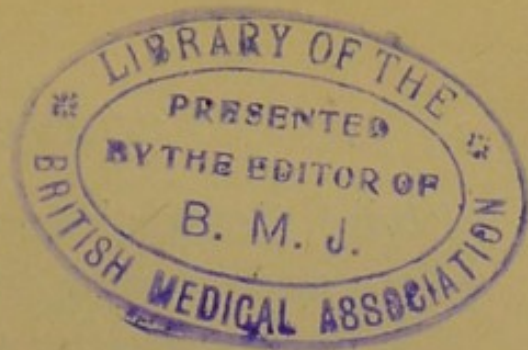
No attempt has been made to give a complete account of School Hygiene: any remarks on this subject are confined to matters mainly under the control of the teacher.



# CONTENTS

CHAPTER		PAGE
I.	COMMON DEFECTS, PHYSICAL AND MENTAL, OF	
	SCHOOL CHILDREN - - - -	I
	DEFECTIVE VISION - - - -	1
	DEFECTIVE HEARING - - - -	12
	DEFECTIVE SPEECH - - - -	16
	MENTAL CONDITION - - - -	19
	DEFECTIVE TEETH - - - -	26
	ENLARGED TONSILS AND ADENOIDS - -	28
	LUNG DISEASES - - - -	30
	HEART AND CIRCULATION - - - -	34
	NERVOUS DISEASES - - - -	37
	DEFORMITIES - - - -	40
	RICKETS - - - -	41
	MALNUTRITION - - - -	43
	VARIOUS NOTES - - - -	46
	IRREGULAR ATTENDANCE - - - -	48
	SWIMMING CLASS - - - -	48
	OPEN-AIR SCHOOLS - - - -	49
	PHYSICALLY DEFECTIVE SCHOOLS - -	50
II.	COMMON AILMENTS OF SCHOOL CHILDREN -	52
	ANÆMIA - - - -	52
	HEADACHE - - - -	53
	DIARRHŒA - - - -	55
	CONSTIPATION - - - -	56
	INTESTINAL WORMS - - - -	57
	CHILBLAINS - - - -	58
	NOSE-BLEEDING - - - -	58

CHAPTER	PAGE
III. CONTAGIOUS DISEASES - - - - -	60
VERMINOUS CONDITIONS - - - - -	60
IMPETIGO - - - - -	65
RINGWORM - - - - -	66
FAVUS - - - - -	70
SCABIES - - - - -	71
IV. INFECTIOUS DISEASES - - - - -	73
SCARLET FEVER - - - - -	73
DIPHTHERIA - - - - -	78
MEASLES - - - - -	83
GERMAN MEASLES - - - - -	85
WHOOPIG-COUGH - - - - -	86
CHICKEN-POX - - - - -	88
MUMPS - - - - -	89
TYPHOID FEVER - - - - -	90
SMALL-POX - - - - -	92
VACCINATION - - - - -	93
CEREBRO-SPINAL FEVER - - - - -	95
INFANTILE PARALYSIS - - - - -	96
EPIDEMIC INFLUENZA - - - - -	97
V. FIRST AID TO SCHOOL CHILDREN - - - - -	100
CUTS - - - - -	100
STINGS - - - - -	101
BURNS AND SCALDS - - - - -	101
SWALLOWING COINS, ETC. - - - - -	102
FAINTING - - - - -	103
HYSTERICAL ATTACKS - - - - -	103
FITS - - - - -	103
DROWNING - - - - -	104
FOREIGN BODIES IN THE EARS, NOSE, ETC. - - - - -	105
VI. THE CHOICE OF EMPLOYMENT FOR DEFECTIVE CHILDREN - - - - -	106
EXPLANATION OF MEDICAL TERMS - - - - -	117
INDEX - - - - -	120



# MEDICAL NOTES FOR SCHOOL TEACHERS

## CHAPTER I

### *COMMON DEFECTS, PHYSICAL AND MENTAL, OF SCHOOL CHILDREN*

#### **Defective Eyesight.**

CHILDREN with defective eyesight may be detected by—

(i.) Failure to read the writing on the black-board from the back row.

(ii.) Inability to tell the time by the clock when at an ordinary distance.

(iii.) Occasionally when reading aloud by their missing out words of two or three letters.

(iv.) Failure to keep to the lines when writing.

(v.) Making coarse, irregular stitches when sewing.

(vi.) Holding books nearer than one foot from the eyes when reading.

(vii.) Complaints of the letters becoming misty and running into one another.

(viii.) Headaches felt over the eyebrows and aching of the eyeballs, especially after reading and sewing.

(ix.) A squint, even if slight and not always present.

In cases of **hypermetropia** (**long sight**), the condition in which the eyeballs are too short from before backwards, the child can often see distant objects well, but has difficulty in reading, sewing, etc., after using the eyes continually for some time. The type becomes blurred, and the letters run together; the eyeballs ache, and headache is felt, usually over the eyebrows.

These symptoms constitute eye-strain, and are chiefly due to overaction of the ciliary muscle, a small muscle situated inside the eyeball; by its action the position and shape of the lens are altered, so as to allow objects at different distances to be focussed on the retina at the back of the eye. This power of altering the focus of the eye is called "accommodation."

In high degrees of hypermetropia the child holds the book close to the eye.

In cases of **myopia** (**short sight**), the condition in which the eyeballs are too long from before backwards, the children cannot see the blackboard when seated at the back of the

class, or tell the time by the clock when placed at the other side of the room ; they hold books near their eyes and stoop over their work ; after working by artificial light the eyes become tired.

In cases of **astigmatism** the eyeball is curved unequally in different directions. Both hypermetropic and myopic astigmatism occur.

With hypermetropic astigmatism, the commoner form, eye-strain is more often associated than with any other abnormality of the shape of the eye.

Children with myopic astigmatism chiefly complain of inability to see distant objects.

**Eyesight Tests.**—Eyesight is usually tested by means of Snellen's test-types ; these consist of black letters of different sizes on a white ground ; the size of the letters are such that with normal vision a child should be able to read the top line at 60 metres, the second at 36 metres, the third at 24 metres, the fourth at 18 metres, the fifth at 12 metres, the sixth at 9 metres, and the seventh at 6 metres (20 feet).

A person who can only read the top line at a distance of 6 metres is said to have  $\frac{6}{60}$  of normal vision.

When testing the eyesight, the child is placed at a distance of 20 feet from the card, which must be placed in the best possible position as

regards light; direct sunlight should, however, be avoided; the whole of the card should be equally illuminated.

Any child who cannot read the whole of the fifth line—*i.e.*, whose vision is not equal to  $\frac{6}{12}$  normal vision—should be referred to the doctor for further examination, when, if necessary, he will measure the shape of the eye. This can only be done properly in the case of children when the eye is completely at rest—*i.e.*, when the ciliary muscle is paralyzed by the action of suitable drugs, such as atropin.

An ointment containing atropin is most commonly used for this purpose. To apply it the lower lids of both eyes should be pulled down and a piece of ointment the size of a small pea put in by means of a clean wooden match-stick, the head of which has been broken off. The eyes should be kept closed for five minutes after each application.

This must be done three times a day for seven days before the doctor's examination of the eye by the shadow test (retinoscopy, keratometry).

The black of the eye will become very large, and the child's sight somewhat dim, if the ointment is applied properly.

During this time, and until the effect of the atropin dies away, the child may attend school,

but should do oral work only ; no near work such as reading, writing, and sewing should be permitted until the black of the eye becomes smaller when the eye is shaded ; this usually occurs from two to three weeks after the use of atropin is discontinued.

In hypermetropia and hypermetropic astigmatism the glasses are used to prevent eye-strain rather than to improve the eyesight, although in most cases after the glasses have been worn for a few months the eyesight becomes more acute.

The lenses require changing at intervals of two years or more.

**What to Do and What to Avoid.**—Persons suffering from myopia should not read in bed or in an unsteady light ; they should not stoop over their work, which should be discontinued when the eyes begin to ache.

Fine work such as back-stitching should be forbidden in all cases of myopia ; its place may be taken by knitting, which the child should learn to do blindfold. When writing, the child should make letters of a large size.

The desk should be so constructed so as to do away with the necessity of stooping over work.

If the myopia be above a certain degree, the children should be taught in a class by special methods, the most important feature of which

is the substitution of free-arm writing on blackboards for the ordinary method of writing. Some of these children require exclusion from violent games.

Children with myopia should be re-examined yearly by the doctor.

Children should be referred to the doctor when their spectacles are broken or bent or have become uncomfortable by reason of pressure on the nose or pulling on the ear; also when the frames are so small that the centre of the pupil is not opposite the centre of the lens.

A spectacle parade should be held at regular intervals—*e.g.*, the first day of the month—to insure that the children are wearing their spectacles and that the glasses are in a satisfactory condition, not bent, broken, or missing. A better arrangement is for the class teachers to see that all spectacles are cleaned before each morning and afternoon session; in this way any omission or defect is detected at once.

When spectacles have been prescribed for a child by a medical man, their use should be continued until further medical advice is obtained; only in exceptional cases should their use be confined to school hours.

**Light Lighting.**—To prevent the eyesight becoming defective the children should work in a good light, which should come from the left-

hand side, so that the shadow cast by the hand when writing does not fall on the child's book.

Artificial light should be sufficient in quantity; the illumination of each desk should not fall below 2-foot candles\* while the child is engaged in ordinary clerical work such as reading and writing, or when doing coarse needlework on white material.

In small classrooms, where no child is more than 20 feet away from the blackboard and white chalk is used, a minimum illumination of 2-foot candles may be sufficient; but when the rooms are larger, or when coloured chalks are used, the illumination of the board should be at least 60 per cent. greater than that prevailing in the rest of the room. Any light should be steady; it should be white in colour. Blackboards should have a dull surface; to insure this they should be repainted at regular intervals. They should be placed on the right-hand side of the children.

The body of the letters or figures written on the board should be of such a size as to fill the space enclosed by a square of an area of 2 square inches.

To avoid glare from the sources of light, no bare flames, incandescent mantles, or filaments

\* *I.e.*, that illumination afforded by two-standard candles at a distance of 1 foot.

of electric lamps should be visible to the eyes of the children or teachers while carrying on their ordinary work; opaque shades should be used to reflect and spread out the brightness of the light over a considerable area.

No source of light should come within the solid angle subtended at the eye by the black-board and a space 2 feet above it, unless it be completely screened from the eye by a shade impervious to light.

**Type of Textbooks.**—In connection with the preservation of eyesight and textbooks, the most important feature is the size of the type.

In the following table are given various requirements in relation to the age of the child. These include the maximum number of consecutive letters in 25 mm. (1 inch); the minimum height of short letters, such as *a*, *c*, *e*; the minimum vertical distance between the bottom of a short letter and the top of a short letter in the next line below—*i.e.*, interlinear space; the maximum number of lines per vertical 100 mm. (4 inches), serving as a check on the two preceding items; and the maximum length of the line of print, the use of lines longer than these giving rise to fatigue.

Age of Reader.		Maximum No. of Consecutive Letters in 25 Mm. (1 Inch).	Minimum Height of Short Letters.	Minimum Interlinear Space.	Maximum No. of Lines per Vertical 100 Mm. (4 Inches).	Maximum Length of Line.
Years.			Mm.	Mm.		Mm.
Under 7	...	6 or 7	3.5	5.0	12	—
7 to 8	...	8 or 9	2.5	3.6	16	100
8 to 9	...	11 or 12	2.0	2.0	20	93
9 to 12	...	13	1.8	2.0	22	93
Over 12	...	13 or 14	1.58 ( $\frac{1}{16}$ inch)	1.8	24	93

The type should be easily legible; it should not be difficult to distinguish between *m*, *nn*, *nu*, *nv*, *w*, *in*.

The general form of the letters should be broad and square rather than elongated vertically: thus the letter *o* should be almost circular in shape.

The paper should be white in colour and unpolished (matt); the use of highly glazed paper should be confined to photographic reproductions in textbooks for older children.

The print or illustrations on one side must not show through from the other.

Illustrations should be made from line blocks as far as possible; they should be well separated from the body of the text; the explanatory lettering should not be too small.

Black ink only should be used.

The ordinary text should not be printed in double columns.

The requirements with regard to Bibles and hymn-books are identical with those in the case of textbooks.

The types for mathematical symbols should correspond in size to those given above for type; the smaller symbols should not be too small.

Atlases for children under nine years of age should have no type the short letters of which are less than 1.6 mm. in height; for children over this age the short letters of the type should have a minimum height of 1.2 mm.

**Music.**—For the tonic sol-fa notation the minimum height of the short letters should be 2 mm. for music and 1.5 mm. for words.

In the ordinary notation the stave lines should not be less than 1.75 mm. apart.

**Needlework.**—Needlework should always be a morning lesson from October to March.

The children must hold the needlework at a correct distance from the eyes—*i.e.*, not less than 1 foot away.

They must sit in a correct attitude.

The needles used should have a sufficiently large eye; in the lower standards No. 4 should be used.

The counting of stitches is inadvisable.

Darning should be practised with blue or green cottons or wools on soft, coarse, pervious material; red cotton or wool and white canvas should not be used.

In Standards I. and II. the children should learn coarse stitching (four or more stitches to the inch); large rug needles into which the thread is tied should be used. The children should work on soft, coarse, pervious material.

In Standard III. hemming and oversewing should be taught.

In the higher standards fine work should be taught; the size of the eye of the needle used may be reduced step by step.

**Squint.**—As squinting very often results in the vision of the eye at fault becoming useless for any practical purpose, it is very important that children suffering from this defect should receive adequate medical attention.

In the vast majority of cases the squint develops before the end of the seventh year; teachers in infant departments, therefore, should be on the lookout for children who squint, especially those who only squint occasionally. It is in this stage of the defect that the treatment by means of spectacles is most likely to be successful.

Any child, however, who squints should be

seen by the school doctor ; the wearing of suitable spectacles is of value to the majority of such children.

Defective vision among school children may be caused by defects other than errors of refraction.

In some cases the cornea is opaque due to inflammation of the eyes shortly after birth, or to ulcers, usually the result of an attack of phlyctenular keratitis. Spectacles are of use to some of these children.

Occasionally the lens is at fault, and a form of cataract is present. In some of these cases an operation is necessary, after which the use of spectacles is compulsory.

Disease of the nerve of sight and its ramifications on the back of the inside of the eye is responsible for some of the most serious defects of vision.

### **Defective Hearing, etc.**

The chief causes of deafness among children are—

1. Enlarged tonsils and adenoids.

This form of deafness is usually slight and often improves temporarily, but becomes worse again when the child has a cold.

2. Running ear (ear or aural discharge, middle-ear disease, otorrhea).

The middle portion of the hearing apparatus becomes diseased as a result of sore throats, scarlet fever, measles, diphtheria, or whooping-cough. Enlarged tonsils and adenoids are often present in such cases. If not treated, the deafness becomes worse, and the disease may sooner or later spread to the brain and its coverings or neighbouring veins, causing very dangerous illnesses.

3. An accumulation of wax in the ear.

This requires removal under the supervision of a doctor.

All such children can be treated at a school clinic.

Other less common causes are diseases affecting—

(i.) The innermost portion of the hearing apparatus (the usual cause of children being deaf and dumb);

(ii.) The nerve of hearing;

(iii.) The meninges (coverings of the brain), especially meningitis associated with cerebro-spinal (spotted) fever, scarlet fever, or measles;

(iv.) The brain.

Deafness from this last group of cases is often the result of causes present at the time of birth

or disease very early in life; the power of speech is practically lost unless special tuition is provided.

Children are best tested for deafness by the forced whisper; the doctor or teacher after breathing out as much as possible whispers as loudly as he can.

The child should be placed sideways to the whisperer at a distance of 20 feet; an assistant should close the opposite ear. The child is asked to repeat words or short phrases after the person conducting the test; if necessary, the whisperer approaches the child until the words can be repeated promptly.

Children may be divided as regards hearing into—

1. Satisfactory :

Those who hear the forced whisper at a distance of 20 feet or more with either ear.

2. Slightly hard-of-hearing :

Those able to hear the forced whisper at a distance greater than 6 feet, but less than 20 feet. This degree of deafness rarely affects the child's education.

3. Moderately hard-of-hearing :

Those who cannot hear the forced whisper with at least one ear at a distance of 6 feet. These children should sit near the teacher. Many of these children become backward

as regards their mental condition on account of their deafness. If this occur, the children should be taught in small classes of ten to twelve in number as in the case of the more successful of the semi-deaf children.

4. Semi-deaf :

Those who cannot hear the forced whisper at 3 feet with either ear. These children should be taught in small classes with the unsuccessful moderately hard-of-hearing children ; if they fail in these classes, they should attend a special school to be taught lip-reading. When semi-deafness is associated with poor development of speech, the child should be sent straight to the special school. In either case a day special school is better for the child than a residential special school.

5. Deaf and dumb (deaf-mutes) :

These children should learn lip-reading and speech at a day special school rather than a residential special school. Those who after a fair trial fail to acquire the power of lip-reading, and mentally defective deaf-mutes, require to be taught by means of the deaf-and-dumb alphabet at a residential school.

**Earache** is usually due to inflammation of

the middle part of the ear or to decayed teeth. All children suffering from this complaint should be examined by a doctor.

Habitual inattention, or want of proper interest in surroundings, is due to either deafness or mental deficiency.

### Defective Speech.

Many children, especially those in infants' departments, substitute easy sounds for the more difficult—for example:

*r* and *g* are replaced by *w* or *l*.

*s*, *sh*, *k*, and *th* are replaced by *t* or *d*.

In a few instances the substitution may be carried to such an extent that the speech, though fluent, is unintelligible, and the child has a language of his own. To these cases the term "idioglossia" is applied.

With special attention for a period of about nine months, such children can be taught to speak in an ordinary manner.

Lisping is occasionally due to loss of the front teeth; it is rarely if ever due to the child being tongue-tied. Speech is often affected by the presence of adenoids; the child speaks as if he has a cold in the head.

Thus— *m* is sounded as *b*.

*n* „ „ *d*.

*ng* „ „ *g*.

*s* is often sounded as *th*.

*th* „ „ *d*.

In the worst cases the speech is thick and snuffling.

Occasionally when a child has enlarged tonsils he speaks as if he has a plum in the mouth—a continual *sh-sh* sound is superimposed on words.

Operation at an early age is necessary to produce satisfactory improvement.

**Cleft Palate.**—Rhinolalia, or the speech associated with cleft palate, is an aggravated form of speaking through the nose accompanied by snuffling sounds.

The alteration to speech caused by cleft palate is so marked that every effort should be made to improve the condition. Before anything can be done for the speech the cleft must be closed; this is best effected by means of an operation. As the most expert of surgeons require in some cases to perform several operations to close the cleft, teachers should encourage parents to persevere with the treatment. Where parents absolutely refuse to submit their children to an operation or further operation, the cleft can be closed by means of an obturator—*i.e.*, a special plate prepared by a dentist.

After this, correct articulation can best be taught to such children by arranging for their attendance at a class for deaf or partially deaf children where the oral method is taught.

**Stammering.**—Stammering consists in hesitation in speech, stuttering in the frequent repetition of an initial consonant or syllable. There is, however, no practical advantage in distinguishing between the two conditions, and it is becoming usual to apply the term stammering to either of these conditions.

The fundamental error made by stammerers and stutterers is that they attempt to speak while drawing in the breath (inspiration). In order to be cured they must be broken of this habit, and trained to speak while letting out their breath (expiration).

Although the explanation is simple, it is difficult to break the habit when once formed, and in all but the slightest degrees of the defect tuition by a teacher who makes a speciality of the subject is necessary.

The most efficacious system for the cure of stammering is that devised by the late Professor Berquand, by which orderly speech is synthetically reconstructed from its elements.

Class teachers can help these children by making them stop to take breath at the proper

intervals, and preventing them from saying too much with one inspiration.

**Hoarseness** is due to an affection of the larynx; medical treatment is necessary.

### Mental Condition.

Children may be classified according to their mental condition into—

1. Bright.
2. Fair.
3. Dull.
4. Backward.

(1) Those retarded on account of illness, etc.

(2) Those with mental powers of a low order: this class includes children who are two years or three years behind their age.

5. Mentally deficient (feeble-minded, mentally defective)—generally speaking, those children who are more than three years behind their age.

(1) High grade.

(2) Medium grade.

(3) Low grade.

6. Imbeciles.

7. Idiots.

The classification of school children into bright, fair, and dull should present no difficulty; it is intended that the terms should be used in reference to the general ability to the children with regard to the ordinary school work. The mental powers of children belonging to these three classes are such that they can be taught with advantage in the standards or classes appropriate to their age; "bright" children are those who can perform the work with ease; "dull," those who can only perform the work with considerable difficulty; "fair," those children whose mental powers represent the average of those belonging to the "bright" and "dull" classes

In order to remedy the mental condition of dull and backward children, if it be remediable, it is necessary in the first place to ascertain the cause of the condition.

The following tentative classification of causes suggests the remedies to be adopted in remediable cases :

I. Physical deficiency :

- (1) As regards the paths by which instruction is taken in, *e.g.*, defective eyesight or hearing.
- (2) Any condition causing ill-health, but allowing the child to attend school.

- (3) Malnutrition.
- (4) Adenoids.
- 2. Non-attendance or irregular attendance.
  - (1) As the result of ill-health, causing—
    - (a) Frequent absence.
    - (b) Prolonged absence.
    - (c) Lateness in commencing attendance at school.
  - (2) Negligence of parents in regard to insuring school attendance.
- 3. Educational disadvantages.
  - (1) Lateness in commencing attendance at school not owing to illness.
  - (2) Removal from school to school and consequent change of methods.
- 4. Moral deficiency—laziness, etc.
- 5. Faulty home conditions.
  - (1) Insufficient food, poverty, neglect.
  - (2) Insufficient sleep.
  - (3) Work out of school hours.
    - (a) Domestic drudgery.
    - (b) Definite employment.
- 6. Primary mental incapacity for school work without any other contributory cause.

This condition is often due to heredity. The children belonging to this class are often

possessed of considerable general knowledge and are quite capable of holding their own in the playground, streets, and fields.

**Mental Deficiency.**—The feeble-minded are defined by the Mental Deficiency Act, 1913, as “those persons in whose case there exists from birth or from an early age mental defectiveness not amounting to imbecility, yet so pronounced that they require care, supervision, and control for their own protection or for the protection of others; *or, in the case of children, that they, by reason of such defectiveness, appear to be permanently incapable of receiving proper benefit from the instruction in ordinary schools.*”

This definition must be taken in conjunction with that given in the Defective and Epileptic Children (Education) Act, 1899, in which these children are defined as those who, “*not being imbecile, and not being merely dull and backward, are defective—that is to say, by reason of mental (or physical) defect are incapable of receiving proper benefit from the instruction in the ordinary public elementary schools, but are not incapable by reason of such defect of receiving benefit from instruction in such special classes and schools as are in this Act mentioned.*”

The term “feeble-minded” should be restricted to those children whose mental powers are so deficient that it would appear

that they will be incapable of arranging their lives satisfactorily by their own unaided efforts. While they may be able to earn their own living, provided that the occupation is one suited to their capacity, they will require a certain amount of indulgence and oversight beyond the ordinary from their employer.

No child who can be cured is mentally defective.

The high-grade feeble-minded can usually make fair progress in rudimentary school work. Their apparent knowledge, however, is often of the "parrot" order: they do not understand the statements they reproduce relating to simple facts in history, geography, etc. Their literary attainments at the age of fourteen are barely equal to those of a dull child in Standard II.

Their hand-work is often quite satisfactory.

The medium-grade feeble-minded are rarely capable of mental arithmetic. They can only read and write words of one syllable.

Their proficiency in manual work is greater relatively than their literary attainments, but they require more prodding and attention than children of the high-grade type.

The mental capacity of the low-grade feeble-minded approximates to that of imbeciles. Their literary attainments are confined to read-

ing and writing words of one syllable. They are capable of the simplest manual work when under constant supervision.

**Imbeciles** are defined by the Mental Deficiency Act as "*persons in whose case there exists from birth or from an early age mental defectiveness not amounting to idiocy, yet so pronounced that they are incapable of managing themselves or their affairs ; or, in the case of children, of being taught to do so.*" They are more easily recognized by teachers as those children whom it is almost hopeless to try to teach anything, even with individual attention.

They may be able to read and spell simple words of one syllable. Their manual work is almost nil. The more proficient members of the class can run simple errands, or even perform easy tasks without assistance, if told exactly what to do. They can all guard themselves against the common physical dangers threatening life, but are incapable of earning their own living.

**Idiots** are defined by the Act as those persons so deeply defective in mind from birth or from an early age as to be unable to guard themselves against common physical dangers.

Most idiots cannot articulate beyond a few monosyllables ; they cannot wash or dress

themselves, or perform any useful task. It can only very rarely occur that such children are presented for admission to school.

**Moral Imbeciles** are defined by the Act as persons who from an early age display some permanent mental defect, coupled with strong vicious or criminal propensities, on which punishment has had little or no deterrent effect.

Their scholastic attainments are often equal to those of normal children of the same age.

In certain rare conditions, due to defects in certain parts of the brain, the children are usually thought by teachers and others to be abnormal as regards their mental condition. Under this heading are included—

1. Children who are **dumb** without being deaf. The term “aphasic” is often applied to such children. Training in the production of sounds by the phonetic system, as taught at a deaf-and-dumb school, is of value to them.

2. Children who, although they can see perfectly for ordinary purposes, cannot read or recognize printed or written characters. They are suffering from **word-blindness**.

3. Children who can hear, but cannot understand, spoken words. They cannot obey a simple order unless it is betrayed by a gesture. They are suffering from **word-deafness**.

### Dental Conditions.

It is desirable that children with one decayed tooth, even if it belonged to the first temporary set, should have it stopped. But until the general public has been educated up to this standard of perfection it is probably advisable to limit one's efforts to persuading parents to take their children to the dentist when the teeth ache and when decay has affected four or more of the permanent teeth.

The second or permanent teeth first appear at the back of the mouth at the age of six years.

Where a school dentist has been provided the teachers will, of course, support his recommendations.

Gumboils should always receive attention from a dentist.

Prominent teeth occasionally prevent closure of the lips and give rise to mouth-breathing; dentists are often able to remedy this cause of an unsightly and unhygienic condition.

Swellings of the jaw or inability to open the mouth often arise from dental trouble; any children suffering from these complaints should as a rule be seen first by a doctor so that the cause of the malady may be ascertained.

Parents, when recommended to take their

children to a dentist, should be told to make sure that they go to a qualified dentist.

### **Mouth Breathing.**

When air is breathed in through the mouth instead of through the nose, it is no longer filtered, raised in temperature, and moistened: the results are sore throats, bronchitis, and predisposition to infectious diseases and tuberculosis.

In some cases the condition is temporary, and due to blocking of the nose by a "cold"; when the cold is better, the child may continue to breathe through the mouth.

Improvement usually takes place after the systematic performance of deep-breathing exercises for some months; these should be carried out not only in the school but also at home.

The child should always blow the nose before the exercises. Any child with the mouth open should be corrected by the teacher, parent, and doctor.

Much can be done to prevent this condition by teachers insisting on a child bringing a pocket-handkerchief to school and blowing the nose when necessary.

In some of the Brighton public elementary schools the children, immediately after prayers, are made to take out their handkerchiefs and blow the nose; any defaulters are thus auto-

matically detected and can be suitably dealt with. Many children do not know the proper way to blow the nose. They should close one nostril by the pressure of the thumb while blowing down the other nostril; this should be repeated with the second nostril; finally they should blow down both nostrils. In other cases a permanent obstruction to the passage of air through the nose exists; this is usually caused by adenoids or nasal polypi, and requires treatment by operation as a rule.

The part played by prominent teeth in mouth-breathing has been mentioned above.

### **Enlarged Tonsils and Adenoids.**

Adenoids are growths like the tonsil, and are situated in the space behind the nose and above the back of the mouth close to the opening of the passage from the ear to the throat; their position accounts for the symptoms which include—

- (i.) Snoring or noisy breathing during sleep.
- (ii.) Noisy breathing during eating.
- (iii.) Mouth-breathing.
- (iv.) A slight degree of deafness, especially when the child has a cold.
- (v.) Yellowish discharge from the nose.

The child in a typical case has a long narrow face, pinched and narrow nostrils the mouth

is kept open. Deadness or absence of resonance of vocal sounds occurs; the consonants *m* and *n* are converted into *b* and *d*.

The physique is poor; the children are dull and apathetic, backward in their lessons, and lack interest in the games of the playground.

Enlarged tonsils cause much the same symptoms as adenoids, but in a lesser degree; the alteration of the face especially is not so marked.

The following directions are given to the parents of children before an operation for the removal of enlarged tonsils or adenoids is performed by the School Medical Staff at Brighton :

A tablespoonful of castor oil should be given the morning of the day before the day of the operation.

The child should have a light breakfast not later than 7 a.m., consisting of tea and dry toast sopped in tea, and nothing to eat afterwards.\*

The child should be given nothing to eat or drink until six hours after the operation, when he may have milk and soda-water, or cold milk puddings. The next day he should have slops—on the third day ordinary food.

The child in the ordinary way should return to school on the fifth day after the operation.

It is very important in those cases where the child is in the habit of breathing through the

\* The operations are performed between 10 to 12 a.m.

mouth instead of through the nose that they should learn to breathe properly through the nose.

### Diseases of the Lungs.

**Pulmonary Tuberculosis (Consumption Phthisis).**—The chief source of danger of spread of tuberculosis by patients suffering from the early stage of the pulmonary form of the complaint is by means of minute droplets of expectoration sprayed into the air when the patient coughs.

In this stage of the disease children have only a slight cough, and are not sources of infection. In the interests of the child it is often far better for attendance at school to be continued.

When at school the conditions under which such a child is living can be supervised during school hours; these conditions may often be more satisfactory than those obtaining in his own home.

Adequate ventilation and warmth should be attainable in every school; only when in attendance at school can a child be given free meals out of funds provided by the Education Authority; it is certain that the child when at school is not employed in domestic drudgery.

Although such children are most suitably educated at an open-air school, attendance at an ordinary school, especially in a playground-class with a modified curriculum, may be of distinct advantage to the child.

It is advisable that these children should be seen by the school doctor at regular intervals, the length of which depends to some extent as to whether they are receiving treatment from another medical man.

Examinations by the school doctor are necessary after any such children have had attacks of bronchitis, influenza, or any disease which may have some connection with, or influence on, the tuberculous complaint.

The diagnosis of pulmonary tuberculosis in children is often a matter of great difficulty to doctors with considerable experience of the disease; teachers should however, send or point out to the school doctor any child with progressive loss of flesh, cough of some duration, spitting up of blood, or night sweats.

Children suffering from loss of flesh and cough are often the subject of some digestive disturbance; night sweats are common in children who are not suffering from tuberculosis.

**Cough.**—A cough is a common complaint of children. Unfortunately, most parents of elementary school children look upon it as a

certain sign of serious disease of the lungs, and sufficient reason for the child's remaining away from school.

The causes of cough are numerous. Coughs are often due to the irritation of certain nerve endings, and may result from such varied causes as indigestion, constipation, diarrhœa, thread-worms, decayed teeth, and wax in the ear; such coughs are usually single, and not accompanied by expectoration.

Many coughs arise from some slight affection of the throat, and are associated with enlargement of the tonsils of varying degree and the presence of adenoids; expectoration is present in such cases, but is slight in amount. Enlarged tonsils, adenoids, and mouth-breathing also predispose to bronchitis.

When expectoration is present in considerable amount, the cough is caused by some disease of the lungs.

Bronchitis in a mild form, often termed bronchial catarrh, is probably the commonest cause among elementary school children of a cough due to an affection of the lungs; when following a "cold in the head" the parents often call the complaint a "cold on the chest."

Some children inherit a tendency to a mild form of bronchitis, but this is only the more reason why they should be guarded against those

conditions which give rise to the complaint—viz., foul and stuffy atmospheres, overcrowding in ill-ventilated homes, exposure when imperfectly clad and shod to all sorts of weather.

They should be removed from proximity with a child suffering from a cold in the head or on the chest.

It is often in the best interests of children suffering from a mild form of bronchitis to allow them to attend school. A frequent cough which interferes with the teaching of a class, wheezing of the child, a flushed face, or a hot skin, are reasons for sending the child home.

Any child with bronchitis should be receiving treatment from a doctor.

Children subject to this complaint should have plenty of exercise in the open air when the weather is suitable; the clothing should be sufficient, but at the same time the child should not be swaddled in excessive coverings.

The occurrence of a cough of the early stage of measles and whooping-cough, and the attacks of coughing in the second stage of whooping-cough, should be borne in mind.

### Heart Disease.

The signs which should lead a teacher to suspect that a child has heart disease are the regular appearance of pallor or palpitation, or an extreme degree of breathlessness after such exertion as running, climbing stairs or hills, or during physical exercises.

In many children with disease of the valves of the heart the heart muscle is increased to such a degree that the heart is able to do its work properly; but if underfeeding or ill-health occur, the symptoms mentioned above are liable to make their appearance.

In cases where the heart muscle has increased sufficiently, the child may lead an ordinary life.

Care should be taken to avoid excessive physical strain, such as running or swimming races, very long walks, the lifting of heavy weights, unnecessary running up and down stairs, and digging in heavy or hard soil.

Any exercise causing breathlessness, pallor, or palpitation should be stopped.

Football and hockey will probably be inadvisable, but cricket, rounders (baseball), and basket-ball (stool-ball) may be tried.

The physical exercises of the Syllabus of the Board of Education will in most cases be

suitable for the children; it may be necessary to omit in some cases the trunk movements and jumping and running exercises.

Those children in whose case the increase of heart muscle has been insufficient will not be able to undertake so much physical exercise or exertion.

A rest after the walk to school may be necessary. If the child lives a long way from the school or has to climb hills to reach the school, under certain conditions a change of school or residence may be advisable.

Some of these children should attend for the morning sessions only. If on account of home circumstances attendance at school in the afternoons is necessary, the child should rest or sleep during the afternoon sessions.

Physical exercises are inadvisable for these children; all unnecessary walking up stairs should be avoided.

Some children suffer from heart disease from birth; they are usually cyanosed (blue in the face), and get out of breath after slight exertion. They are very liable to attacks of bronchitis, especially in the winter. Such children, when fit to attend school, should be required to undertake the minimum of physical exertion.

No child with heart disease of any sort should do manual work out of school hours.

**Acute Rheumatism (Rheumatic Fever).** — Much of the heart disease occurring among school children is due to acute rheumatism, which may take the form of acute swelling of the joints, inflammation of the valves or wall of the heart, or St. Vitus's dance (chorea).

The disease often occurs in an insidious form. Growing-pains and sore throats occurring in a child may be signs of acute rheumatism.

Prolonged rest under medical care is essential. The disease is one which is very liable to recur; when this happens, even if only in a mild form, the child should be placed under the care of a doctor. When necessary, the children should be recommended for free meals; efforts should be made to provide suitable clothing and boots.

All children who have suffered from any form of the disease should be kept as much as possible away from damp surroundings, and especial precautions taken lest their clothes and boots become wet; when this occurs, the conditions should be remedied as far as it lays in the power of the teacher.

**St. Vitus's Dance (Chorea)** is especially important because of the heart disease often associated with the complaint. A child with the disease becomes fidgety; twitching of the face (almost grimacing) and jerky movements of the head, arms, legs, and whole body, may occur.

A sudden limp may develop.

The handwriting becomes jerky; articles are dropped.

Every child with chorea should be excluded from school; treatment for some months by a doctor is essential.

### Nervous Diseases.

**Epilepsy.**—In most epileptic fits the child falls; the senses are lost, the body and limbs become rigid, the face becomes blue in colour; in a very short time twitchings of the face and jerking movements of the head, limbs, and whole body take place; finally, the movements cease, and the child falls into a heavy sleep.

The clothing about the neck should be loosened, and the jaws held apart by a cork, pencil, or penholder introduced between the back teeth of the upper and lower jaw; when the movements cease, the child should be moved to a quiet place and allowed to finish its sleep.

Such children should be under the care of a doctor for at least two years after the last fit.

Another form of epilepsy called "petit mal" is equally important. In this form the patient usually suffers from the disease for several years before fits make their appearance. A loss of

consciousness occurs, so brief that it may often pass undetected ; either pallor of the face, apparent hesitation or stopping in the middle of reading or writing, or a purposeless action, such as fumbling with the hands, may occur ; in a very short time recovery takes place, and the occupation is resumed.

Epileptic children of school age fall into three classes :

1. Those in whom the attacks are slight and infrequent. These constitute the large majority of cases, and are usually able to attend the ordinary public elementary school.

2. Those in whom the attacks are severe and frequent, but whose mental condition, except for slight changes at or about the time of the attack, is unaltered. These children are suitable for residential schools or epileptic colonies.

3. Those in whom epilepsy is associated with mental deficiency. These children should be taught in a school for mentally defectives.

4. Those in whom epilepsy has caused severe mental deterioration. These children are unsuitable for school life.

The following classes of children should *not* be "*pressed*" :

Epileptic children.

"Nervous" children.

Those who cry out in their sleep or wake up at night in a terrified condition.

Those who talk or walk in their sleep.

Those who have recently recovered from chorea (St. Vitus's dance).

It is well known that arithmetic presents special difficulties to many children; care should be taken not to worry any children belonging to the above classes about the subject.

The work required from such children should be well within their powers. When promotion to a higher standard or class is being considered, this point should be borne in mind. Punishment should be avoided as much as possible.

**Enuresis (Bladder Weakness).**—This is especially common among children attending the infants' departments. More commonly the children wet the bed at night, but often the weakness occurs during the day as well, and the child's clothing, if not changed frequently enough, becomes very offensive.

Such children should empty their bladders immediately before and after school hours and during the morning intervals; when necessary, the children should also be sent to the urinal or water-closet for this purpose midway between the hours mentioned above.

They should be under the care of a doctor until the defect is remedied.

**Weakness of the Back Passage.**—Occasionally a similar weakness of the back passage occurs. If not due to mental deficiency, such children require medical treatment.

The parents should be requested to change the clothing of such children as often as is necessary.

### Deformities.

**Scoliosis (Lateral Curvature of the Spine).**—This condition should be suspected in children who stand with one shoulder higher than the other when “at attention.”

One shoulder-blade projects much more than the other; one of the shoulders or hips may “grow out”—*i.e.*, project too much forward.

To prevent scoliosis, the children should sit and stand in suitable postures so that the weight of the body is borne equally on both legs and not mainly on one leg.

The desks should be of such a size as to allow the children to place both feet on the ground when the whole of the thigh is resting on the seat. The height of the desk should be such that the children need not stoop over their work; the top of the desk should be opposite

the bend of the elbows of the children when sitting down.

The desks should be provided with supports for the back.

**Kyphosis (Round Shoulders).**—Any child with a tendency to stooping of the shoulders should be examined to see if the eyesight is defective.

Special attention should be paid to such children during physical exercises to ensure that they carry out the exercises properly.

Girls should wear their hair fastened in two plaits, so that any tendency to round shoulders is not concealed by loosely flowing hair.

**Torticollis (Wry Neck).**—In many cases the affection has existed since birth. An operation is necessary.

Temporary wry neck occurs at times when it is usually due to inflammation of the glands of the neck.

**Flat Foot.**—The arch seen on the inner side of the foot becomes flattened; the children have great difficulty in tiptoeing.

Special exercises under the supervision of a doctor are required in the earlier stages to prevent the foot becoming fixed in this position.

**Rickets.**—Rickets is a disease which attacks children during the first two or three years of

life; it gives rise to bony deformities, such as knock-knee and bow-legs.

The slighter cases of knock-knee and bow-leg can be cured by the use of splints; severe cases require operation.

It is only in the slighter cases that growth causes any improvement in the deformity. No teacher should be contented with a parent who says "he will grow out of it, it is not worth while bothering to see the doctor."

**A special boot or instrument** is often necessary for children suffering from tuberculous disease of the hip, congenital disease of the hip, and club-foot. A few children who have suffered from tuberculous disease of the knee require a special boot.

#### **The Care of Leg-Instruments and Boots.—**

To insure the instrument allowing only the correct movements to take place, the straps should be properly fastened, not too tightly, but tightly enough to keep the instrument in its place.

To prevent rust all the joints of the instrument should be oiled regularly, if possible once a day.

The heels are the most important part of the boot in this connection. If they become "worn" at all, the correct action of the instrument is impeded; if this be allowed to continue, the springs break.

Crutches should not be too short. As the patient's weight is borne on his hands, the length between the pad for the armpit and the handle should correspond with the length of the arm; the total length of the crutch should be such as to allow of the boot and instrument easily clearing the ground.

### **Malnutrition.**

Malnutrition is produced by a disturbance of the process by which food is taken into the body and built up into the various tissues.

In this process all the various organs of the body take a part.

Actual disease of the organs need not be present; it is sufficient if the various parts of the body are placed under unsatisfactory conditions for carrying out their work.

The chief signs of malnutrition comprise the presence of anæmia, absence of fat under the skin, lack of development and firmness of the muscles, and the absence of alertness and keenness.

Of the various measurements used, the simplest and best is the ratio of the weight of the child to his height. If this be less than that of the average child, the nutrition is unsatisfactory.

The following table gives the average weight of the school children in Brighton of a certain height :

Height in Cm.	BOYS.		GIRLS.	
	No. Examined.	Average Weight in Kilos.	No. Examined.	Average Weight in Kilos.
80	14	11.8	37	11.8
85	149	13.0	177	12.5
90	671	13.8	637	14.0
95	1,367	14.7	1,371	14.9
100	2,255	16.0	2,072	16.1
105	2,680	17.4	2,638	17.4
110	2,801	18.8	2,801	18.5
115	2,476	19.9	2,474	21.0
120	2,390	22.2	2,105	24.0
125	2,364	24.6	2,259	24.3
130	2,540	26.5	2,358	26.6
135	2,601	28.2	2,146	29.1
140	2,451	33.1	2,081	32.6
145	1,909	33.7	1,894	35.4
150	1,126	36.4	1,313	39.0
155	500	40.1	771	40.9
160	141	43.6	275	45.2
165	58	47.2	50	48.6
	28,493		27,459	

Each height number and the corresponding weight represents the average of the five numbers of which it is the centre—*e.g.*, the totals for 100 are those of 98, 99, 100, 101, 102 centimetres.

The more important causes of malnutrition include—

1. Unsatisfactory food :

(a) Quantity.

Poverty.

Neglect.

(b) Quality.

Poverty.

Ignorance.

Neglect.

2. Disease :

(a) Actually present.

(i.) Of the food passages—

Decayed teeth.

Stomach-ache.

Diarrhœa.

(ii.) Of other parts of the body—

Adenoids.

Bronchitis.

Incipient tuberculosis.

Rheumatism.

Heart disease.

(b) Past disease.

Rickets.

Recent illness, such as measles or whooping-cough.

3. Conditions in operation before birth.

4. Unfavourable conditions for co-ordination of the functions of the various organs :

Disturbed or insufficient sleep.

Overwork, especially work out of school hours.

Lack of fresh air and sunlight.

### Various Notes.

**Abscesses.**—Any child suffering from a swelling or abscess should be seen by a doctor. If matter has formed, pain will be eased and the malady cut short by his opening the abscess with a knife.

**Whitlows.**—The same applies to whitlows (poisoned fingers, septic fingers).

The usual treatment after bleeding has stopped is to apply boracic fomentations. Whenever possible, the part should be steeped in water as hot as can be borne for about half an hour three times or so in the day; the water should be kept hot by the addition of boiling water from time to time.

In the case of a whitlow the hand should be supported in a comfortable position by a sling.

**Enlargement of the Glands** at the front of the neck are usually due to decayed teeth, adenoids, or tuberculosis. At the back of the neck enlargement of the glands is usually due to pediculosis, especially when the condition is accompanied by sores on the head.

Abscesses are liable to form under these circumstances in the glands situated near the nape of the neck.

**Rupture.**—The parents of school children with ruptures are in most cases when seen by doctors advised to submit their children to operation. When the operation has been successful, the child's physical condition is to all intents and purposes normal; he can with advantage take part in any game.

Children suffering from **discharges of a tuberculous nature** should as a rule be excluded from school.

**Hospital Letters.**—The parents of children who are ill should be advised to take them to a doctor—either a private doctor, or a doctor at a hospital or dispensary. If the child attends at an institution for which “letters” (or “recommends”) are necessary, the parent should ask the doctor in good time before the “letter” expires if another “letter” is required; if so, the second “letter” should be obtained before the first has run out, so as to avoid interruption of the treatment.

**Continued Treatment.**—The attendance of children for medical supervision or treatment at an institution should not be discontinued until they are definitely discharged by the doctor.

Parents should not wander from one doctor or institution to another in search of a cure to

be obtained at once without their own intelligent and active assistance. Long ailments want long treatment; patience and perseverance are required by the parent as well as by the doctor.

**Irregular Attendance.** — Wet or foggy weather is often a justifiable excuse for non-attendance of children suffering from—

1. Severe forms of heart disease.
2. Spasmodic asthma.

Children who have suffered from rheumatic fever should also be excused.

Irregular attendance should be condoned in the case of children suffering from—

1. Functional nervous disease, when the child is sleepless and restless at night.
2. Epilepsy or spasmodic asthma, when the parent has reasonable grounds for considering that an attack is about to occur.
3. Certain forms of paralysis in which at certain times the muscles become contracted and give rise to irregular movements.

**Swimming Class.**—Children suffering from the following complaints should not attend the swimming classes:

1. Certain skin diseases, including contagious forms such as impetigo, ring-worm and scabies, and most acute skin diseases.
2. Certain diseases and defects of the eye, including contagious diseases, such as conjunctivitis; acute eye diseases, such as keratitis; a marked degree of myopia.
3. Ear discharge when present. Children who have had an ear discharge, but are cured, should not dive.
4. Heart or lung disease.
5. Kidney disease.
6. Epilepsy, including petit mal.
7. Fainting.

**Open-Air Schools.**—Open-air schools are intended for children who suffer from such ailments as—

Anæmia and malnutrition, due to insufficient or improper food; insufficient sleep; absorption of poisons from decayed teeth, etc.

Delicacy, especially if accompanied by liability to bronchial or intestinal catarrh.

Markedly enlarged glands in the neck.

Slight degrees of adenoids and enlargement of the tonsils.

• Early tuberculosis of the lungs.

Convalescence after illnesses, such as pneumonia, abscess on the lung (empyema).

Convalescence after surgical operations, such as the removal of tonsils and adenoids.

Epilepsy and petit mal (major and minor epilepsy).

Slight degrees of chorea in a convalescent stage when the heart is not affected.

**Schools for Physically Defective Children.—**

Suitable children for attendance at these schools include certain of those suffering from the following maladies :

Tuberculous disease of the spine.

„	„	„	hip-joint.
„	„	„	knee-joint.
„	„	„	other bones and joints.

Various deformities, such as—

Hip affections.

Club-foot.

Joint disease.

Severe cases of rickets.

Lateral curvature of the spine.

Amputations.

Various forms of paralysis, especially infantile paralysis.

Heart disease, especially congenital valvular disease.

Pending the establishment of special classes—

Partial blindness.

Partial deafness.

Pending the establishment of an open-air school, children suffering from maladies given in the previous list might, with advantage to themselves, attend at a school for physically defectives.

## CHAPTER II

### *COMMON AILMENTS OF SCHOOL CHILDREN*

#### **Anæmia.**

ANÆMIA is relatively common among elementary school children, especially the poorest.

The commonest cause is defective nutrition, usually the result of a combination of factors, which may include insufficient or improper food, absorption of poison from foul mouths consequent on decayed teeth, the breathing of vitiated air, insufficient sleep and manual work out of school hours.

In a few instances anæmia may be a sign of serious disease, such as tuberculosis or heart disease.

When due to defective nutrition, it will be found advisable in most instances for the children to continue to attend school.

They should be taught in playground classes if an open-air school is not available. Recommendation of these children for free meals should be considered by the teacher. Defective teeth should receive attention. If practicable, the school dentist should deal with all such

children, provided the parents cannot afford to take them to their own dentist, or the children cannot receive attention at a dental hospital.

### Headache.

The commonest cause of headache among school children is indigestion. On inquiry it will often be found that the child also suffers from pains in the stomach ; a feeling of sickness or the actual bringing up of food is a less common accompaniment.

Constipation is often accompanied by headache. Anæmia, underfeeding, and exhaustion are causes often associated.

Overtiredness in healthy children gives rise to headache.

The vitiated air of hot and unventilated rooms is a frequent cause of headache.

A rise in the body temperature due to any cause is usually accompanied by headache.

**Migraine** (megrim, sick headache, nervous headache) generally occurs in older children, especially girls of twelve years of age and over.

The headache occurs after more or less regular intervals, during which the patient feels perfectly well ; the attack is accompanied by nausea and vomiting. It is held that even slight errors of refraction predispose to migraine ; the eyesight

of these children should therefore be carefully examined.

Headache occurs in connection with defective eyesight apart from migraine; hypermetropic astigmatism and hypermetropia especially give rise to this complaint.

This form of headache is worse on rising in the morning, improves slightly during the day, but gradually becomes worse again towards the evening.

When suffering from an hysterical headache the patient usually complains of pains of a shooting or boring character; these come on when the spirits are depressed or any unpleasant duty is required.

Headache is occasionally a sign of disease of various structures in the head. A dull, continuous headache over the forehead following catarrh in the region of the nasal passages may be due to similar inflammation of the lining of a hollow in the bone.

Disease of the middle ear may give rise to headache. Tumours of the brain give rise to persistent headache. Inflammation of the membrane covering the brain causes headache in addition to other symptoms.

### Diarrhœa.

Acute diarrhœa among children is usually due to some indiscretion in diet.

There are few boys who will not require to learn by experience that unripe apples cause colic and diarrhœa, but children are more likely to take heed of warnings against eating the rotten fruit thrown away from fruiterers' stalls in markets, etc.

Chronic diarrhœa is a common complaint among elementary school children. One form especially found in younger children (infants, Standards I. and II.) is due to chronic catarrh of the intestines, and is caused by unsuitable food, especially excess of starchy food, and the way some parents have of allowing their children to be always eating between meals, with the result that the stomach has not sufficient rest.

Such children have capricious appetites, and lose flesh ; they grind their teeth, are restless at night, and are subject to night terrors and headaches ; they are also very liable to catch cold.

Constipation may alternate with diarrhœa in this complaint.

These children should be under the care of a doctor till cured. They should eat no article of diet not passed by the doctor. In severer forms of the disease starchy food should be avoided.

The stomach should be allowed complete rest between meals.

Out-of-door games in the fresh air are desirable.

If possible, woollen garments should be worn next the skin. Care should be taken to prevent the children catching cold.

Another common form of diarrhœa, especially among older children, is known as lenteric diarrhœa. The children are apt to pass a loose stool immediately after eating, or following any excitement, especially fright.

Much improvement usually takes place when they take proper medicine and diet.

Children are subject to a form of diarrhœa immediately after attacks of measles and whooping-cough, and medical treatment is necessary.

### Constipation.

It occurs especially in children who have large appetites and take little exercise; the tendency to the complaint is occasionally hereditary. It may alternate with looseness of the bowels when chronic catarrh of the intestines is present.

Children suffering from the complaint should be under the care of a doctor until cured. As a rule the diet requires regulating; plenty of out-of-door exercise and the proper medicine are necessary.

## Intestinal Worms.

**Thread-Worms** are the commonest form of intestinal worms found in children, and they look like short pieces of thread  $\frac{1}{8}$  to  $\frac{1}{4}$  inch long.

Anæmic children with sluggish bowels are most often affected.

Thread-worms may give rise to itching at the seat, and in girls at the private parts.

Although occasionally found on the bed-clothes, the presence of thread-worms is most readily detected by the examination of the fæces passed into a chamber, especially after a purge has been given.

The cure of the disease is often hindered by the child introducing the eggs of the worm into his mouth when asleep; other children are similarly infected by a sufferer, especially if sleeping in the same bed.

Purgatives and washing the seat after the bowels have been opened will cure many cases; but if thread-worms persist in spite of these simple remedies, a doctor should be consulted.

**Round-Worms** closely resemble ordinary earth-worms; they are usually from 4 to 12 inches long. It is rare for more than three or four to be present in the same child.

Some of the children affected suffer from

indigestion or diarrhœa, but as a rule the passage of a round-worm with a motion is usually the first sign of its presence.

The child should be under the treatment of a doctor until cured.

### Chilblains.

Children whose hands are often blue and cold are especially liable to chilblains, which also occur on the ears and feet.

Such children should wear woollen gloves and thick woollen stockings during the cold weather.

Itching or aching is relieved by painting the chilblains with a mixture of equal parts of tincture of iodine and liniment of aconite. This mixture is poisonous.

When the chilblains are broken, a mixture of zinc and red oxide of mercury ointments should be used.

### Nose-Bleeding (Epistaxis).

This complaint is somewhat common in children about twelve years of age. A copious flow of blood from the nose occurs without any other sign of illness. No definite cause can be ascribed to the complaint. The flow generally stops when the child sits down quietly, grasps the fleshy part of the nose firmly, with the thumb and first finger compressing the nostrils;

the pressure should be applied for at least fifteen minutes.

Bleeding from the nose occurs in children suffering from severe heart disease and those liable to bleed profusely after a trifling injury (bleeders, hæmophilics). Picking the nose and blows on the nose also give rise to bleeding.

In typhoid fever and whooping-cough nose-bleeding may be present.

## CHAPTER III

### CONTAGIOUS DISEASES

#### Verminous Conditions.

THE vermin most commonly found on the skin of school children are lice, fleas, bugs, and the itch-mite. The lice (*Pediculi*) comprise—(1) the head-louse (*Pediculus capitis*), found on the hair of the scalp; (2) the body-louse (*Pediculus corporis*, *Pediculus vestimentorum*), found on the body or clothing; (3) the crab-louse, found on the shorter hairs of the body, including the eyelashes.

Lice are reproduced by means of eggs. These, in the case of the head-louse, are the well-known pear-shaped nits seen near the roots of the hair, to which the narrow ends are fastened by chitinous material; the eggs hatch in about a week.

Body-lice are especially found in the seams of the clothing where it comes in contact with the skin—for example, over the shoulders.

The flea (*Pulex irritans*) lays eggs on the floors of houses, etc.

The bug (*Cimex lectularius*) lives in dark corners and niches of rooms, wooden bedsteads, etc.

The female itch-mite lives in the burrows in the human skin. The eggs hatch in about six days, and give rise to larvæ, which cling to bedclothes, etc.

Similar forms of vermin infest domestic animals, such as dogs and cats. Although these are occasionally found on human beings, they do not develop to the same extent as when infesting their original host.

**Verminous Clothing.** — The vermin are usually found on the inner side of the undergarment next the skin in the region of the neck. To detect their presence, the clothing must be loosened and the undergarment next the skin pulled back. In boys vermin are often seen on the inside of the part of the coat covering the shoulders.

If the children were bathed once a week and their underclothing changed at the same time, much of this trouble would be avoided.

The following directions if carried out should remedy the condition :

1. Wash all underclothing thoroughly.
2. Iron the underclothing, and also the vest and coat with a hot iron, paying special attention to the seams.

3. All vermin should be removed from the bedclothes by washing them, and from the mattresses by thoroughly shaking them.

4. The clothing, bedclothes, and mattresses of all others with this condition should be similarly treated.

**Verminous Heads.**—The following directions should be carried out in the case of children with verminous heads:

The head must be washed and scrubbed daily with paraffin oil, to which an equal quantity of olive oil may be added. If there are scabs, these, when softened, should be removed. Sore places, scabs, and enlarged glands will generally get better on removing all lice and nits. The hair must be combed daily with a fine-tooth comb, so as to remove all lice and nits, until all trace of vermin is absent.

To insure a rapid cure, all hair with nits, and all hair within a quarter of an inch of a sore, must be cut off.

To prevent any nits becoming lice, the hair should be washed with paraffin daily for a week, and every other day for a second week. Do not use paraffin near the fire or near a naked light. If there is any difficulty in removing the nits, the tooth comb should be dipped in equal parts of vinegar and water.

When there is any difficulty in keeping a

child's head clean, the hair should be worn quite short.

To prevent heads becoming verminous, boys, and especially infant boys, should wear their hair short; girls should be encouraged to wear their hair plaited, so as to avoid contact with the hair of another child. The parents of all children attending public elementary schools should examine their children's hair regularly for the presence of nits or lice; a convenient occasion is after the weekly bath. If any vermin are found, treatment should be carried out regularly every night till the last nit is removed from the hair.

The children should have numbered pegs on which to hang their hats, overcoats, etc. The pegs should be separated by a sufficient interval (12 inches) to prevent the clothing of the different children coming in contact. It has been suggested that the clothing of habitually verminous children should be hung together in a separate part of the cloak-room. It should be the duty of a monitress to see that the children use the cloak-room properly. Additional precautions include the separation of the clean children from the habitually verminous in the classroom; this should be done without the knowledge of the children.

A desirable measure is the examination of all

children on entrance at a school for verminous conditions, and refusal to accept them until satisfactorily cleansed.

These measures, although useful, do not suffice. Exclusion from school alone is unsatisfactory, but when exclusion is followed up by prosecution if the children are not cleansed in a reasonable time, the results are much better.

At Brighton children with body-lice are allowed at least two days within which they must become clean; boys with head-lice at least two days, girls with head-lice at least ten days, to get rid of live vermin and the majority of the nits.

The parents are summoned under the Attendance By-laws, it having been held in a court of law that the presentation of a child in a verminous condition is equivalent to non-attendance at school.

Some authorities deal with verminous children under the Children Act. The Local Education Authority must give notice in writing to the parent or guardian or other person liable to maintain the child, requiring him to cleanse properly the person and clothing of the child within twenty-four hours after the receipt of the notice. Written instructions must be sent describing the manner in which the cleansing may best be effected.

On failure to comply with the notice the child may be removed to a cleansing-station to be cleansed.\*

If the child be allowed to get into a similar condition again, the parent, etc., may be fined.

Under this Act any person provided with the authority in writing of the medical officer of a Local Education Authority may examine in any public elementary school provided or maintained by the Authority the person or clothing of any child attending the school.

Those teachers who avail themselves of this permission will, provided other circumstances are equal, have a smaller proportion of verminous children in their schools.

### Impetigo.

The earliest sign of the disease, is a minute red spot on which a vesicle (small bladder) forms; matter very soon appears in the vesicle, which dries up, leaving a honey-yellow scab.

When present on the scalp, impetigo is usually due to the presence of scratches made by the child on account of the irritation caused by head-lice.

Impetigo commencing in the region of the ear may be a consequence of ear discharge.

\* Certain local authorities make arrangements for the cleansing of the parents and homes.

The cracks and matter found at the attachment of the ear to the scalp are due to the same cause as impetigo, and yield to the same treatment.

Impetigo is contagious, the spread being caused by direct contact, and the common use of towels and face-flannels by sufferers and others.

The treatment consists in the constant application of white precipitate ointment after the crusts have been removed, either by washing them off at once, or after a preliminary soaking over-night with olive or sweet oil, applied on linen and kept in place by a bandage.

The ointment is most satisfactorily applied when spread on lint, kept in position by a bandage or adhesive plaster.

When treating the scalp the hair must be cut short all round the sores, and any verminous condition dealt with; in neglected children, when the head is swarming with lice, all the hair must be cut short; boracic fomentations or charcoal poultices are necessary.

The child's hat, towel, brush and comb and face-flannel, must be kept separate; the children must be prevented from picking at the sore.

### Ringworm.

Ringworm is a disease caused by a fungus which invades the hair, skin, and occasionally the nails. Not only children but adults are

attacked; cats, dogs, and colts are affected as well as human beings.

Two distinct forms of fungus exist, a small-spored and large-spored type; both have many varieties, each of which has its favourite host.

**Ringworm of the Scalp.**—A variety (*Microsporon audouini*, not found in animals) of the small-spored form of the fungus is responsible for about 90 per cent. of the cases of ringworm of the scalp occurring among public elementary school children in England. In a certain number of children the disease is caused by other varieties of the small-spored form, which are derived from a cat, dog, or, rarely, a colt.

In the earliest stage, the usual form taken by the disease is a small scaly, more or less circular area, over which a few of the hairs are broken off; rings are occasionally seen, but the whole of the surface of the area enclosed by the circle soon becomes scaly, and both forms soon give rise to a scurfy patch, over which many of the hairs are broken off short, or appear to be absent.

In certain long-standing cases the whole of the head becomes affected; the broken hairs are buried beneath scales, leaving the healthy hairs standing upright. The child is often thought by the parent and others to be merely

suffering from "scurf," which has caused the hair to become thin.

Large-spored ringworm gives rise to numerous small patches scattered over the head; they often consist of only a few diseased hairs, which in girls with long hair may be several inches long. They can easily be distinguished from healthy hairs by their white colour, lack of lustre, and origin—from a small scaly patch. In cases which have been treated, and especially boys, the skin may be smooth and clean, and the diseased hairs break off short, and appear like black dots; this condition is known as "bald ringworm" or "black-dot ringworm."

In either small or large spored ringworm one or more of the patches may become swollen, soft, and boggy; this condition is termed "kerion." The diseased hairs fall out, but although this assists the cure of the ringworm, treatment is necessary to prevent the place becoming permanently bald.

Parents, owing to preconceived notions of what ringworm should look like, often doubt the doctor's diagnosis of ringworm; but the detection of the spores and shreds of the fungus in the hair by the use of the microscope settles the question indubitably.

When selecting a specimen for microscopical examination, care should be taken to pick out

short white stumps or white lustreless hairs shorter than the surrounding hairs. Suspicious hairs from several of the suspected patches should be taken. If necessary, a portion of the scurf should be pinched up, laid on a hard surface, and broken apart by the points of the forceps so as to select suitable portions which appear to contain stumps.

After using forceps, they should be freed from infection by holding the parts near the points for two minutes in the flame of a spirit-lamp, gas-jet, or burning match.

**Spread** is caused by infected children rubbing their heads against others during sleep or play, or by infected articles, such as caps, bed-linen, brushes, combs, scissors, etc.

The most efficacious **treatment** is by X rays, which cause both the healthy and diseased hair to fall out. Until all the hairs infected with ringworm have fallen out (usually seven to eight weeks after exposure to the rays) the child is a potential source of infection. The average duration of treatment by suitable ointments (such as oleate of mercury, 10 grains to the ounce) is seven and half months, the extremes being three months to six years or more. In order that the whole of the diseased area may be detected and treated, the hair must be kept very short.

**Ringworm of the Body** (*Tinea circinata*).— This disease may occur alone or in connection with ringworm of the scalp.

Any child suffering from ringworm of the body should be examined by a competent person to ascertain if the disease is present in the scalp. When occurring on the body alone, the disease may have been contracted from a cat (more rarely a dog), or from ringworm of the beard in the father.

Ringworm of the body usually takes the form of circular patches with well-defined edges, those bred in the centre producing the well-known rings.

This form of ringworm is readily cured by the application of white precipitate ointment spread on lint, which is kept in position by a bandage or adhesive plaster.

### **Favus.**

Favus is a rare disease, caused by a fungus which attacks the scalp, skin, and rarely the nails.

In England it is most commonly seen in the east end of London. The sufferers are almost always immigrants from Russia or Poland, or persons who have contracted the disease directly from these sources.

The characteristic sign of the disease is a sulphur-yellow disc, with a depression in the

centre (favus-cup). It varies in size from that of a pin's head to a split-pea; these favus-cups, however, are not always obvious, or, indeed, present. When the affection has lasted some months, scales and impetiginous crusts may be present; later, bald scarred areas are seen.

When the skin is attacked, the appearances produced are identical with those caused by ringworm, except when a favus-cup is present.

The most efficacious treatment of favus of the scalp is by means of X rays, which are applied exactly as in the case of ringworm. In the absence of an X-ray installation, the crusts and cups must be removed by boric fomentations, and every hair situated on a reddened surface carefully pulled out.

After three months' treatment, the hair should be allowed to grow; but the patient must be seen regularly by a doctor, so that any diseased hairs may be pulled out.

### Scabies.

Attention is usually drawn to the existence of this disease by the child complaining of itching, especially at night. On examination of the skin, especially that part between the roots of the fingers, small wavy lines looking like old pin-scratches are seen. Scratch-marks

made by the nails are commonly present. Matter often forms along their course.

The disease is spread by children sleeping with a sufferer, or in beds the linen of which has been infected ; in some instances the wearing of infected articles, such as gloves or mittens, is responsible. Persons occasionally acquire scabies by handling or washing infected articles, but careful washing of the hands immediately after carrying out these duties in most instances prevents this occurrence.

The manifestations of scabies are often closely imitated by those of lichen urticatus.

The following treatment should be carefully and thoroughly carried out :

1. A hot bath should be taken at night, and the skin well cleansed with soap and flannel.

2. Sulphur ointment should be well rubbed in where the disease is worst.

3. The underclothing of the patient must be changed, if possible ; if not, it must be boiled before being put on again.

4. All sheets, blankets, pillow-cases, etc., should be washed, and mattresses cleaned in order to prevent any relapse of the condition.

5. The treatment should be repeated every night for three nights, and once a week for three weeks.

## CHAPTER IV

### *INFECTIOUS DISEASES*

THE following pages deal with those infectious diseases occurring among school children. Certain diseases such as small-pox and cerebro-spinal fever are rarely seen in this connection. The term "incubation period" denotes the interval which occurs between the occasion of the invasion of the patient by the disease and the first signs of the illness. "Quarantine period" denotes the length of time the patient or a person who has been exposed to infection must be separated from others. It should be clearly understood that the periods necessary for quarantine have not yet been settled beyond all dispute; those given in the text are as a rule those periods enforced in Brighton.

#### **Scarlet Fever (Scarlatina).**

Children are most susceptible to scarlet fever during their fourth year of age, but with this exception, are more liable to develop the disease between the ages of five and nine than at an earlier age. Girls are attacked more than boys.

Adults who have not suffered from scarlet

fever are less likely to contract the disease than children.

Generally speaking, the younger the patient the greater the mortality; the death-rate at ten to fifteen years of age is low.

The **incubation period** is usually three days (seventy-two hours), but varies from a few hours to seven days.

In the usual form of scarlet fever the onset is sudden; headache, vomiting, a shivering fit or chilliness, together with a sore throat, usually mark the beginning of an attack.

The temperature of the patient rises in a few hours to  $101^{\circ}$  to  $104^{\circ}$  Fahr.; the face becomes flushed, and the skin dry and hot.

Usually within twenty-four hours of the onset of the first symptoms of the disease a rash appears on the upper part of the chest and neck; it consists of minute red spots situated on a fainter red background. These spots are absent from the front of the face, and the skin round the mouth and nostrils is bloodless and pale; thus the characteristic circumoral pallor is produced.

The rash lasts from twenty-four hours to ten days.

The tongue is at first covered with a white fur; this gradually peels off in patches, leaving the patient with a raw-looking tongue, on which the papillæ stand out (strawberry tongue).

The lymphatic glands in the neck near the angle of the lower jaw become swollen and tender early in the disease; abscesses may form in them.

The child usually feels unwell for seven to ten days, after which the characteristic peeling occurs; it is usually seen first on the upper part of the chest and neck. The peeling may take three forms :

1. Pin-hole, in which circular rings are seen, the centre of which is the size of a pin-hole.

2. Branny.

3. Large flakes like portions of a glove may become detached from the hands and feet.

Very mild forms of the disease may occur. In one the patient suffers from a sore throat and moderate fever; the rash in this form is not well marked, or may even be absent. In the other form the rash is well marked, but the other accompaniments of the disease are almost entirely absent.

In septic scarlet fever the inflammation in the throat is very severe.

Toxic scarlet fever is a very fatal form; the symptoms are severe from the outset, prostration being especially marked.

**Complications.**—These include abscesses in the neck, rheumatism, kidney disease, heart disease, and aural discharge; the two latter only cause permanent damage.

**Spread.**—The disease is most commonly spread by contact with other persons suffering from the disease. The virus is contained in the mucus in the throat and nose, and in the discharge from the ears. Children in whom an ear discharge commences shortly after resuming school attendance after an attack of scarlet fever should be reported to the medical officer. Owing to the mildness of the initial symptoms or negligence of the parents children are often sent to school while suffering from scarlet fever, until the onset of peeling or the occurrence of blood in the urine arouses suspicion.

After about the fourth week the scales from the skin are not infectious.

Infected garments, toys, etc., put away at the time of the illness and not thoroughly disinfected are responsible in some cases.

The milk-supply may be responsible.

In some cases no connection, direct or indirect, with a person suffering from the disease can be ascertained. It is possible that the germ or germs causing the disease may be present in the throat and not be able to cause any ill-effects until the resistance of the patient to disease is reduced—as, for instance, by an operation for the removal of tonsils and adenoids.

**Quarantine.**—As a general rule, a patient

should be considered infectious until the elapse of six weeks from the onset of the illness.

When treated at home, it is necessary to insure that the patient's person, clothing, and rooms have been efficiently disinfected; this duty is usually carried out by the Health Department. In either case infection may continue to lurk in parts of the throat or inside of the nose. Spread is liable to occur if nasal discharge sets in, if breaking out about the nostrils occurs, or if the patient develops a "stuffy" nose. The patient should be isolated again at once.

After being provisionally declared free from infection, a patient should not sleep in the same bed with another person until at least three weeks afterwards. Separate handkerchiefs and towels should be provided during this period.

The patient should not be kissed on the lips, and for at least three weeks should not mix with children. Warm clothing is requisite. The patient should be protected against cold.

**Contacts.**—If the patient has been removed to the Infectious Diseases Hospital, all children living in the same house should be kept away from school and apart from other children for seven days after the disinfection of the house. When the patient is treated at home, no children

should be allowed to attend school until seven days have elapsed from the day on which the house was disinfected.

### **Diphtheria (Membranous Croup).**

Diphtheria is the disease caused by the diphtheria bacillus, the activity of which results in the formation of membrane and poisons.

Children under the age of ten are especially attacked. Those under five years of age are as liable to the disease as those of school age. Girls are attacked in slightly greater numbers than boys.

The younger the child, the more fatal is the disease.

The **incubation period** is usually from two to four days, but varies from one to seven days.

The throat is the commonest part of the body to be affected.

In this form of the disease (faucial diphtheria) the child feels unwell, is pallid and feverish ; in most cases, but not always, a complaint is made of the throat feeling sore.

The lymphatic glands of the neck near the jaw generally become swollen and tender.

The severity of the disease is very variable. The patient may only feel slightly unwell, or feel ill for three to four weeks, or even longer.

The larynx is usually affected by an extension of the disease from the throat, but may be attacked first.

The earliest symptom is a frequent brassy cough. The patient soon can only speak in a whisper. The membrane formed obstructs the passage of air to the lungs, and a noise is made each time the breath is drawn in and given out (stridor). The doctor must be sent for at once ; any delay may be fatal.

Often a passage must be made to allow air to enter the lungs by making a hole in the wind-pipe and fixing a tube in it. This operation is called tracheotomy.

This form of diphtheria is sometimes called croup, or membranous croup. It must not be confused with spasmodic croup, in which the difficulty of breathing is confined to short attacks, lasting only a few minutes, between which the child appears to be quite well. Many parents term "croup" any illness with a cough.

When the nose is the seat of the disease, membrane may occasionally be detected in the discharge, but as a rule there is very little, if anything, to distinguish diphtheria in this situation, except by a bacteriological examination, from an ordinary running nose, with sores about the nostrils.

Other parts affected are wounds and abrasions of the skin, the conjunctiva, and the private parts especially in females.

**Complications.**—The importance of the disease lies in the fact that any attack, however mild, may be followed by heart trouble.

For this reason it is essential that the patient should be kept in bed for at least a fortnight, and longer if necessary. While convalescent, only the slightest physical exertion is permissible.

Paralysis is an important complication; the soft palate is most commonly affected, adding a nasal tone to the voice. Fluids come back through the nose when the patient drinks.

The ciliary muscles of the eyes (see p. 2) are at times the first to be affected. The patient is unable to read a book held at 12 inches from the eyes.

Squinting may also develop.

Of the other parts of the body the lower limbs are most often affected; the earliest sign of this occurrence is unsteadiness of gait.

Diphtheria may occur in such a mild form that the onset of heart trouble or paralysis may be the first sign that a person is suffering from this malady.

**Diagnosis.**—To make the diagnosis of diphtheria it is desirable that the presence of the

diphtheria bacillus should be demonstrated. For this purpose a "throat-swab" is used. It consists of a piece of cotton-wool wound round the end of a stout wire placed in a test-tube and kept in position by the end being fastened in a cork or wrapped round by a piece of cotton-wool; the tube and its contents are freed from germs (sterilized) by the action of heat.

The cotton-wool on the swab is carefully rubbed against the suspected place and replaced in the tube for transmission to the laboratory, where the swab is gently rubbed along the surface of a solid substance prepared from blood. After the germs have been allowed to grow in a warmed incubator for eighteen hours, they are ready for examination by means of the microscope.

No disinfectant should have been applied to the place from which the swab is taken during the preceding twenty-four hours.

**Spread.**—The disease is spread by—

1. Contact with patients and "carriers."

The germs in the mouth and throat are passed on to other persons by coughing or breathing in their face, spraying them with saliva during conversation or examination of the throat.

Persons can carry diphtheria bacilli in their throat for some months and not suffer

from diphtheria, although they may ultimately contract the disease. Such persons are called "carriers," and are capable of passing on the disease to others.

2. Infected articles—

Spoons, drinking-cups, etc., used by patients or "carriers."

3. Infected milk-supply.

4. Cats especially, dogs, and possibly horses.

The disease in these animals is usually derived from a human being.

Defective drainage gives rise to sore throats, and persons in this condition are more liable to attacks of diphtheria (and scarlet fever); but beyond this there is no especial association between diphtheria and defective drainage.

**Quarantine.**—The patient should be considered infectious until three bacteriological examinations on successive days show the absence of diphtheria bacilli on each occasion.

The return of the child to school should, in view of the debility left by the illness, be delayed till the expiration of a further period of four weeks.

If treated at home, the rooms occupied by the patient must be disinfected as soon as the child is free from infection.

**Contacts.**—When the patient has been removed to hospital, all children living in the

same house should be kept away from school and from other children for twenty-eight days.

If the patient is treated at home, the contacts should be kept away from school for twenty-eight days after the patient has been declared free from infection.

When an outbreak occurs in a school, it is desirable that bacteriological examinations should be made in the case of all the children attending the school. In the event of this being impracticable on account of the large attendance, bacteriological examinations should be made of all children with sore throats, suspicious running of the nose, as well as those who complain of feeling unwell, or have been in especial contact with cases of diphtheria.

**Treatment.**—One of the most striking improvements effected in the treatment of disease is the introduction of diphtheria antitoxin. The injection of this substance has saved many lives.

To be of much service it must be used in the first three days of the illness ; the earlier its use the greater its effect.

### Measles (Morbilli).

Measles especially attacks children from two to seven years of age ; few children escape the disease. Girls are attacked in slightly larger numbers than boys.

Adults not protected by a previous attack are liable to contract the disease.

Second attacks occur, but are uncommon.

The **incubation period** ranges from seven to twenty-one days, but is commonly ten to fourteen days.

The earliest symptoms are those of a severe "cold," sneezing, coughing, running at the eyes and nose. These may all subside the next day, but on the fourth or fifth day (commonly the fourth) a red blotchy rash appears, most frequently commencing on the face; the whole of the body is soon covered by the rash.

Before the rash comes out, measles can be diagnosed by the presence of Koplik's spots. These are small irregular spots of a bright red colour, situated on the inside of the cheek about the middle. In the centre of each spot a bluish white speck is usually seen.

Bronchitis is usually present. The larynx is often affected early, causing the disease sometimes to be mistaken for laryngeal diphtheria.

Measles may occur in a very severe form, death taking place in the first two or three days of the illness.

**Complications.**—The most dangerous complication is pneumonia. Ciliary blepharitis and aural discharge often follow an attack. Inflam-

mation of the cornea occurs, often resulting in the formation of opacities.

**Spread.**—The disease is spread chiefly by contact with sufferers. The secretions from the nose, throat, and air-passages contain the virus. The cough in the early stage of the illness is especially responsible for the spread.

Infected articles are responsible in some cases. The infection has been carried to others by persons who remain unaffected.

**Quarantine.**—The patient should be isolated for three weeks from the appearance of the rash.

**Contacts.**—All those who attend an infants' department should be excluded. Of those attending senior departments, only those who have not had the disease should be excluded. The period of exclusion is three weeks from the date of onset of the illness of the last child to be attacked in the house.

**German Measles (Rubella, Rubeola, Rötheln, Epidemic Roseola, Epidemic Rose-Rash).**

This disease occurs more frequently after the age of fourteen than before.

The **incubation period** is commonly from fifteen to eighteen days; the extremes are ten and twenty-one days.

The rose-red rash on the face is usually the first sign of the presence of the disease. Enlargement and tenderness of glands at the back of the neck may precede the rash. The patient usually experiences a feeling of discomfort in the throat and a slight headache; slight nasal catarrh and redness of the conjunctiva are often present.

The feeling of illness rarely lasts more than three days. The disease is only very rarely fatal.

**Complications** are also very rare.

**Spread** occurs only among those brought into close contact with the patient.

**Quarantine.**—The patient should be excluded for three weeks from the beginning of the illness.

**Contacts** should be excluded for the same time after the onset of the illness in the last person in the house to be attacked.

### **Whooping-Cough (Pertussis).**

Whooping-cough especially attacks children under seven years of age, although adults are occasionally affected, especially those who have passed the prime of life. Girls are affected more than boys.

The **incubation period** varies from five to fourteen days. As a rule, for the first ten days or so of the illness, the child is thought to be suffering

from a cold or ordinary cough. At the end of a week the cough begins to occur more in attacks, and finally the characteristic whoop caused by the child pausing to take breath is heard. The child goes blue in the face; vomiting of food or of rosy, often blood-stained, mucus frequently occurs.

Mild forms of the disease occur. In another form the preliminary "cold" is absent, while in a third form the whooping may not occur.

The most important **complications** are disease of the lungs, especially pneumonia. The chest wall is liable to become deformed.

**Spread.**—In almost every case spread is due to contact with another patient.

In a few instances disease has been spread by infected articles or been carried from a patient by a healthy person to a third.

**Quarantine.**—The patient should be isolated for at least six weeks from the beginning of the illness.

**Contacts.**—In some areas children attending infants' departments only are excluded. In London, in addition, those contacts attending the senior departments who have not had the disease are excluded for two weeks.

The children should be kept in a warm, well-ventilated room. They should be fed after a bout of coughing.

### Chicken-Pox (Varicella).

Chicken-pox attacks especially children under ten years of age. During their fourth year of age they are most vulnerable to the disease. Boys are attacked more than girls. Adults occasionally contract the disease.

The **incubation period** varies from twelve to twenty-three days. The first sign of the disease is usually the rash, but the child may be fretful, out of sorts, and feverish the previous day. The rash is usually first seen on the trunk; it consists of red spots, which quickly develop into vesicles (small bladders); these dry up in the course of twelve to twenty-four hours, leaving thin brownish-yellow scabs.

Several crops of spots occur, so that vesicles and scabs are seen at the same time on the body.

The rash spreads to the face and limbs, but is more abundant on the body than the extremities. Death occasionally, but only very rarely, occurs from chicken-pox. Impetigo may follow an attack.

The **spread** is chiefly by contact with sufferers, but the disease may be conveyed by infected articles or by a healthy person to a third.

**Quarantine.**—The patient is infectious from the beginning of the attack till the scabs fall off.

This usually occurs within three weeks of the onset.

**Contacts** are not invariably excluded from school. In London all those attending the infants' department are excluded for two weeks. Of those attending the senior departments, all children who have not had the disease are excluded for two weeks.

### **Mumps (Epidemic Parotitis).**

Mumps is most commonly met with in children between five and fifteen years of age, but occasionally adults are affected. Boys are more liable to be attacked than girls.

The **incubation period** varies from fourteen to twenty-five days. It is commonly seventeen to nineteen days.

The illness usually commences with pain and tenderness in the parotid gland, but occasionally this is preceded by headache, slight sore throat, vomiting, and fever for one or two days.

The parotid gland soon becomes swollen; the swelling fills out the hollow behind the angle of the jaw and below the ear. When marked swelling occurs, the pain is increased by movements of the jaw such as occur during eating.

The salivary glands situated beneath the jaw

usually become affected, as well as the corresponding glands on the opposite side of the face.

The swelling usually commences to subside after five to seven days. The attack lasts from nine days to four weeks.

**Complications.**—Inflammation of the private parts may occur in males. Occasionally the most internal parts of the organ of hearing become affected, giving rise to deafness, which may be permanent.

**Spread.**—Close contact, especially catching the breath of a sufferer, is the commonest mode of spread.

**Quarantine.**—The patient should be isolated for three weeks from the onset of the swelling.

**Contacts** in London are excluded for three weeks. In many areas, however, they are allowed to attend school.

**Treatment.**—Medical advice should be obtained for sufferers. The patient should be kept in bed for at least nine days.

### **Typhoid Fever (Enteric or Continued Fever).**

This disease is more common in children over ten years of age than younger children. An appreciable number of children from five to fifteen years of age suffer from the disease.

Boys are slightly more liable to typhoid fever than girls.

The fatality of the disease is at its lowest in the case of patients from five to fifteen years of age.

The **incubation period** is commonly ten to fifteen days, but may be from five to twenty-three days.

The **onset** is gradual; a complaint of headache is made; the child feels cold; at night "rambling" usually occurs; pain in the abdomen and diarrhœa may be present. Mild forms of typhoid fever occur in which the children do not appear to be more than "out of sorts."

The **diagnosis** is facilitated by an examination of the action of the blood of the patient on the bacilli causing the disease.

The fact that other persons suffering from typhoid fever are living in the same house is of considerable weight when a child is suffering from an illness of doubtful nature.

The **spread** of the disease is most often due to the contamination of some articles of food by a person who is attending to a patient suffering from the complaint. The bacillus responsible for the disease is present in the motions and urine of the patient. Seeing that the duties of nursing would in the ordinary course of events be added to the usual duties of the mother, the

importance of the patient being removed as early as possible to an institution is obvious. The contamination of the food sometimes takes place through the agency of a person who, although he may have recovered from the disease for a considerable number of years, still gives forth the bacilli from time to time.

**Quarantine.**—The average period of absence from school of a sufferer is probably about four months.

**Contacts** as a rule are not excluded.

### Small-Pox (Variola).

Small-pox attacks persons of all ages. In this country, where at present the majority of the children are vaccinated, the disease is seen more frequently among adults. This is explained by the fact that the protection afforded by vaccination becomes gradually less after the procedure.

The **incubation period** is almost always twelve days; the extremes are five and twenty-one days. The first signs of the disease are headache, backache, and a shivering fit, or repeated attacks of chilliness.

At times the onset of the disease with a sore throat, accompanied by hoarseness, sneezing, and running at the eyes, may cause the parents and others to think that the patient has measles.

Various rashes may occur on the first, second, or third day, but the rash typical of the disease is seen on the third day. On the forehead and wrists small red spots appear, which can soon be felt as firm round bodies like shots in the skin. These spread over the whole surface of the skin, but the ends of the body and limbs are usually more affected than the more central parts.

In the ordinary forms of the disease each pock develops into a bladder, which finally dries up, leaving a scab.

“Modified small-pox,” or “varioid,” is the term given to the milder form of the disease, which occurs in persons who have been vaccinated; the common modification is that in which the pocks are scanty and do not develop in the same regular manner as in the ordinary form of the disease, **rendering the distinction from chicken-pox more difficult.**

In most cases the disease is contracted by personal contact with sufferers, but infected articles and healthy contacts are often responsible for the spread.

**Vaccination (Vaccinia).**—Successful vaccination absolutely protects a person who is not already infected with the disease from catching small-pox for a certain number of years, probably seven; after the elapse of this period a certain amount of protection persists, and if the

vaccinated person becomes attacked, the disease is more likely to be of a milder character than if the patient were unvaccinated.

The importance of the introduction of sufficient vaccine into the human body must not be overlooked. The minimum area of the marks after vaccination should be  $\frac{1}{2}$  square inch.

The most striking fact in favour of vaccination is that during outbreaks of small-pox the proportion of the unvaccinated attacked is much greater than in the case of the vaccinated.

Provided that vaccination is carried out properly, there is no danger of erysipelas or blood-poisoning. Now that everyone is vaccinated with lymph obtained from healthy calves, and not from the vesicles on another person undergoing vaccination, there is no danger of the spread of tuberculosis and constitutional disease by this means.

Although compulsory vaccination is contrary to the ideal of the complete liberty of the subject, the inconvenience caused by it is much less than that resulting from the compulsory isolation and supervision of the unvaccinated necessary when such persons have come in contact with persons suffering from small-pox.

If vaccination is mentioned by parents of unvaccinated children to teachers, it is as well to ascertain if either of the parents is a conscien-

tious objector. If the child has merely escaped vaccination because he was delicate when a baby, or on account of removal from one district to another, the teacher should suggest that the child should be vaccinated by the family doctor or public vaccinator.

Compulsory revaccination at the age of twelve years should be universally adopted; this procedure has almost abolished small-pox in Germany, whereas hardly a year escapes but that the disease is present in England.

### Cerebro-Spinal Fever (Spotted Fever, Cerebro-Spinal Meningitis).

Cerebro-spinal fever (epidemic cerebro-spinal meningitis, spotted fever) occurs most frequently in children and young adults.

The illness usually commences with a shivering attack, severe headache or giddiness, or both, and persistent vomiting; pain and stiffness occurs usually at the back of the neck; small spots of blood in the skin may be seen. The illness is as a rule very severe, but mild attacks may occur.

The disease is caused by a definite germ, the meningococcus, which attacks the nose and throat. The disease is spread by carriers and mild, unrecognized cases.

Sufferers should be isolated and treated by injections of antimeningococcic serum.

No child from an infected family or house should be allowed to attend school until declared free from infection by the medical officer.

### **Infantile Paralysis (Acute or Epidemic Poliomyelitis).**

This disease occurs chiefly in children under six years of age. The illness commences with feverishness and a cold ; the child is fretful and objects to being moved.

In the mildest form muscular weakness lasting for a short time only occurs, but paralysis usually sets in ; this may soon pass off, or may remain permanently. Small groups of muscles only may be affected, or the disease may cause one or more limbs to be useless.

This disease is caused by a minute germ, which attacks the nose and throat ; healthy "carriers" occur and pass on the disease.

Children suffering from the complaint should be isolated ; among the poorer classes they should be removed to hospital.

The throats and nasal passages of contacts should be sprayed with suitable solutions.

All contacts should be excluded from school until further notice from the medical officer.

### Epidemic Influenza.

During an epidemic of this disease children are attacked as well as older persons.

The **incubation period** varies from a few hours to five days; it is usually two to four days. When the disease attacks younger children the leading feature is usually fever of varying duration, unaccompanied by signs of disease of definite parts of the body; bronchitis and pneumonia occasionally occur; uncontrollable vomiting may be a prominent symptom.

In older children the attack often resembles scarlet fever; a red rash may be present.

Earache and cough are common symptoms.

An ear discharge may follow an attack of influenza.

**Spread** occurs as the result of personal contact with patients suffering from the disease.

**Quarantine.**—The patient should be excluded from school for three weeks from the commencement of the illness; all **contacts** should be excluded for one week.

## SUMMARY

Disease.	Incubation Period in Days.			Initial Symptoms.	Symptoms to be watched for when the Disease is Common.
	Usual.	Min.	Max.		
Chicken-pox	12-21	12	23	Fretfulness; rash	Any signs of child not feeling well
Diphtheria	2-4	1	7	Pallor; sore throat	Complaint of tenderness in the neck, caused by swollen glands; sore throat; running nose; inability to drink fluids
Epidemic influenza	2-4	Few hours	5	Feverishness; "cold"	Headache; sore throat; cold
German measles	15-18	10	21	Headache; sore throat; rash on face; tenderness of glands at back of neck	Rash on face; sore throat; "cold" tenderness of lumps chiefly at back of neck
Measles	10-14	7	21	Running at eyes and nose; sneezing; coughing	Cough; sneezing
Mumps	17-19	14	25	Pain below ear	Swelling below ear
Scarlet fever	3	Few hours	7	Headache; sore throat	Sore throat; tenderness of lump under jaw; peeling; blood in urine
Small-pox	12	5	21	Headache; feverishness; backache	Backache
Typhoid fever	10-15	5	23	Headache	Abdominal pain diarrhoea
Whooping-cough	5-14	5	14	Feverish cold; cough	Cough; whoop

# INFECTIOUS FEVERS.

Standards, etc., usually chiefly affected.	Period of Exclusion of Children suffering from the Disease.	Period of Exclusion of Children living in the Same House as the Patient.
I Infants; Standards I. and II.	Three weeks, or until the scabs have fallen off	No exclusion
I Infants; Standards I. and II.	Until four weeks after discharge from hospital; or, if treated by a private doctor, until four weeks after no diphtheria bacilli can be found in the throat or nose	Four weeks after removal of the patient to hospital; if diphtheria bacilli proved to be absent from nose and throat, one week. If the patient is treated at home, similar periods after the patient is proved to be free from infection
Any	Three weeks from the onset of the illness	One week from the commencement of the illness of the last person in the house to be attacked
Higher standards	Three weeks from the onset of the illness	Three weeks from the onset of the illness
Infants	Three weeks from the appearance of the rash	Three weeks from the date of onset of the illness of the last person in the house to be attacked. All Infants excluded; only those of Senior Departments who have not had the disease
Any	Three weeks from the onset of the swelling	No exclusion
I Infants; Standard I.	Six weeks from the onset of the illness; but in any case three weeks must elapse after discharge from hospital before return to school	Seven days after disinfection of the house— <i>i.e.</i> , about a week after the removal of the patient to hospital; or, if the patient is treated at home, about seven weeks from the onset of the illness
Any	Inquiry should be made, if necessary, of the Medical Officer of Health	Inquiry should be made, if necessary, of the Medical Officer of Health
Any	Period of absence usually about four months	As a rule no exclusion
I Infants	Six weeks from the onset of the illness	All Infants should be excluded for eight weeks; same period for those of Senior Department who have not had the disease

## CHAPTER V

### *FIRST AID TO SCHOOL CHILDREN*

THE following remarks are not intended to cover the whole ground of "first aid," but are written to help the teacher to render the necessary assistance to a child before the services of the doctor are available.

The commoner injuries from which public elementary school children suffer are cuts, stings, burns, sprains, and occasionally broken bones; fainting and fits are common ailments requiring immediate attention.

#### Cuts.

In the case of the ordinary small cut with a pen-knife, tool, etc., the part affected should be washed with ordinary soap and water, using a piece of clean cotton-wool or clean rag. If at hand, gauze should be applied, covered with a thin layer of cotton-wool, and the whole bandaged; clean rag or lint are useful substitutes.

Bleeding can be stopped in most cases by firmly bandaging a pad of gauze lint or rag large enough to cover the wound completely over the cut.

When the edges of the cut are widely separated, stitches are usually inserted by the doctor. Pain felt in the part affected on the day after a cut is often a sign that the place is poisoned; all such children should be seen by the doctor as soon as possible.

### Stings, etc., of Insects.

The sting should be removed. At times to effect this it is necessary to exert pressure over the spot by means of the barrel of a key. Liquid ammonia, or strong solutions of washing-soda or sodium bicarbonate, should be applied; these are also useful in case of gnat-bites.

### Burns and Scalds.

A small burn or scald should be covered with lint or clean rag spread with boracic ointment and the part bandaged; useful substitutes for ointment are vaseline, carron oil, margarine, butter, olive, salad, or linseed oil.

Fortunately, it is a rare occurrence for the clothes of a child to catch on fire in school. If this happens, the child should at once be laid flat with the flaming surface uppermost, and the flames smothered by the first suitable article at hand. Rugs, table-cloths, coats are useful for this purpose. No attempt should be

made to remove the clothing. The child should at once be wrapped in a blanket, coat, or rug, placed near a fire, and given hot milk, coffee, or brandy and water to drink. The child should not be removed until recovery from the shock has taken place. In urban districts he should be conveyed in an ambulance or cab to the nearest hospital; in rural districts, after the child had been taken home, unless a doctor is within easy reach, it would be advisable to take further steps pending his arrival. After cutting—not pulling—off as much of the clothing as possible, the child should be placed in a warm bath, kept as hot as can be borne by the bare elbow by means of the addition of boiling water; any clothing sticking to the burn will float off in the bath. The burn will require dressing by the doctor.

### Swallowing Coins, etc.

When a child swallows an inedible article, such as a coin or marble, it may pass directly into the stomach, and give rise to no trouble. All such children should be seen by a doctor.

It may, especially if angular in shape, stick in the gullet or air-passages. When arrested in the gullet, pain, retching, and vomiting occur as a rule. If it lodges over the entrance to the

windpipe, or gets into the larynx, the child usually goes black in the face. The teacher should at once open the mouth, pass the finger to the back of the throat, and try to hook up the offending body; if this fails, the children should be held up by the legs and the back thumped. No time should be lost before sending for a doctor.

### **Fainting.**

Fainting in school children is rarely due to severe disease of the heart; a more common cause is some disorder of the stomach when, however, giddiness occurs more often than actual loss of consciousness.

**Treatment.**—The child should be laid on the ground with the head low and the clothes about the neck and chest loosened; recovery soon takes place when the child is removed from the classroom, and placed in a room with windows and door widely open.

Such children should be seen by a doctor, in order to see if they are suffering from heart disease or some digestive disturbance.

### **Hysterical Attacks.**

Hysterical attacks are seen occasionally in school children, especially in girls from twelve to fourteen years of age; they are often mistaken

for epileptic fits. As the result of some incident causing mental excitement the child loses control of her feelings and actions; she performs various movements, such as throwing herself about and kicking; crying and laughing occur; there is no loss of consciousness, even of a momentary nature.

The child should be taken out of the classroom and spoken to firmly.

For the treatment of epileptic fits, see p. 37.

### Drowning.

**Treatment.**—After water and froth have been removed from the entrance to the air-passages by passing the forefinger to the back of the throat and allowing the contents of the mouth to run out, artificial respiration must be carried out. Of the various methods of carrying out artificial respiration, Schäfer's is the simplest.

To carry out this method the patient must be turned face downwards with his forearm under the forehead; a pad is placed under the chest. Kneeling with one knee on either side of the child's body and facing the child's head, the teacher's hands are placed one on each side of the back over the lower ribs; after pressing down for three seconds and gradually throwing the weight of his body over the child in order

to produce firm pressure downwards on the chest, the teacher raises his body freely, removing all pressure on the child; the hands are kept in position all the time, while the swaying movement is repeated about fifteen times a minute. Artificial respiration should be continued steadily for at least forty-five minutes; meanwhile blankets and dry clothing should be obtained and a doctor summoned. If the accident has occurred at the baths, and the baths attendant has had experience of resuscitating the drowned, the teacher would be well advised to allow him to superintend any treatment carried out, even although other measures than those suggested above are employed.

### **Foreign Bodies in the Ears, Nose, etc.**

Children occasionally put beads, pieces of crayon, etc., in their ears or up their noses.

No attempt should be made by the teacher to remove these bodies; the parents should be informed at once and the child taken to the doctor.

## CHAPTER VI

### *THE CHOICE OF EMPLOYMENT FOR DEFECTIVE CHILDREN*

IN the past, and probably for some time to come, the head teachers of public elementary schools have been, and will be, consulted by parents as to suitable occupations for their children. The Juvenile Employment Bureau may, in the larger towns, be available to a considerable extent for such advice, but in any case the assistance and co-operation of the head teacher will be necessary.

Probably the chief determining factor up to the present has been the mental fitness of a child to undertake a particular employment. Now that the services of a School Medical Staff are available, the choice of employment should be considered from the physical aspect also.

If this course be pursued, it is possible that a child may be prevented from following an occupation unsuitable for him by reason of the presence of some particular physical defect or liability to injury to health, the result of his constitution. The existence of a certain physical defect may debar him from taking up an

occupation to which the parents had decided to put him.

The matter is one which up to the present has not received much attention from medical men working in co-operation with those who are responsible either for teaching suitable trades to the physically defective and afflicted, or those who are responsible for the placing of these children in suitable situations. Of the work that has already been done in this direction most has been performed in connection with children who are severely afflicted. Very little attention has been devoted to the relation of the disability caused by minor defects, such as a minor degree of defective vision, deafness, etc. A few notes on this branch of the subject are given below, followed by lists, accompanied by notes, showing various occupations that have been found suitable for the blind, cripples, deaf, deaf-and-dumb, and those who have suffered from pulmonary tuberculosis, etc.

### Defects in Relation to Employment.

1. **Eyesight.**—For the Mercantile Marine, a boy must be able to read three letters of the 6/12 line—*i.e.*, the fifth line from the top on Snellen's Test Types—and must be able to distinguish colours. For the Civil Service a

moderate degree of ordinary short-sightedness, presumably the same as that just mentioned, is allowed. Candidates for the Customs Outside Service must not be short-sighted. Requirements of a similar character are issued by various railway companies who require a somewhat different minimum of eyesight for various classes and grades of employment, the differentiation being generally between indoor and outdoor service ; in the case of the latter a higher standard of eyesight is required.

As an example of railway clerkship regulations we may take the following, which applies to the North-Eastern Railway: "Clerkships. Age of candidates, thirteen to seventeen. If the Company's medical inspector reports that the candidate is colour-blind, his vision in either eye is worse than 6/12 Snellen, he will not be accepted. If his vision is below normal 6/6 in either eye, but not worse than 6/12 in either eye, and he can obtain glasses which will give normal vision, the General Manager will consider whether the circumstances justify his being accepted. Accepted candidates with eyesight below 6/6 Snellen will not be eligible for promotion to such posts as station-master, inspector, or other grade where normal vision is necessary."

Children with myopia of a certain degree

(more than 4 dioptries), aged thirteen, and progressing in each eye, should not take up an occupation involving long study or close work, dressmaking, etc.

2. **Hearing.**—For all quasi-official appointments the person must have practically normal hearing. It is especially dangerous for a deaf person to work in a factory in the vicinity of machinery.

3. **Speech.**—The most important defect is rhinolalia, the condition met with in connection with cleft palate. Such a defect militates against employment in situations in which it is necessary either to converse with customers, such as shop assistant, or to give orders to subordinates, as in the case of foremen. Marked degrees of stammering and stuttering go against the sufferer in similar occupations, and it is very doubtful whether they would be accepted in the Army or Royal Navy. This affliction is a great bar to employment in a clerical capacity.

4. **Very Backward Children.**—Children from the “intermediate” classes appear to take up ordinary employment. For instance, boys have taken up skilled trades as engineering, tailoring, the manufacture of perfumery, and printing. The girls, however, mostly go out as day-girls, either for ordinary domestic service or to mind babies.

5. **Mentally Defective Children.**—As regards the children from mentally defective schools, it is comparatively rare for the children to take up skilled occupations; but boys with special aptitude are occasionally able to earn their own living by such pursuits as woodcarving. Some of the boys can help to maintain themselves by boot-repairing.

6. **Other Defects.**—As regards others defects, speaking generally, it is the rule that as regards official and quasi-official appointments the persons must be free from any organic complaint or deformity. In the Army and Royal Navy it was formerly customary for no person to be accepted who had a rupture. This disqualification has been removed in some measure, and men with a rupture (provided it can be kept in position by a truss) are accepted in any branch of the Service except the Artillery.

In the case of varicocele, in the Army and Navy the authorities insist on an operation being performed before the boy can be accepted.

In the Navy League Sea Training Home at Liscard, Cheshire, bladder weakness at night disqualifies a candidate from entrance, and the authorities require defective teeth, adenoids, or enlarged tonsils, to be treated before the boy can be accepted. They also inquire if the boy stutters.

## Notes regarding Particular Employments.

1. **Factory Work.**—As regards employment in factories, the course at present pursued is for the child to apply for employment, and if he is accepted at any age under sixteen, the employer must give notice to the factory surgeon who visits the place of employment and makes an examination of the child with a view to determining his suitability for the employment. No very definite instructions are issued to the factory surgeon by the Board of Trade, but the examination is directed particularly towards the eyesight and the possibility of injury to the child by lifting too great a weight for his strength. In many works, such as iron puddling and wire drawing, the foremen have the selection of the men applying for employment. Men wearing spectacles are almost inevitably refused.

2. **School Teachers.**—Children suffering from the following complaints should not aspire to become school teachers :

Any defect of speech or voice likely to interfere with his work as a teacher.

Epileptic fits, unless occurring at very long intervals.

Subjects of very striking physical defects, deformities, or disfigurements.

Neurasthenia.

Persons who are very anæmic or suffer from Graves' disease (exophthalmic goitre) should not enter a training college unless the affection has been successfully treated.

Deafness of more than a slight degree.

Those with very defective vision. A candidate must be able to teach a class sufficiently with the aid of glasses, and must not be in danger of losing his sight.

Squint (unless very slight), ptosis (dropped eye-lids), artificial eye.

Persistent laryngeal affection.

Aortic regurgitation (a particular form of chronic valvular disease of the heart).

Chronic Bright's (kidney) disease.

Diabetes.

Glycosuria.

3. **Telephone Girls.**—The work of telephone girls appears to be very exhausting to the nervous system. It is advisable that girls exhibiting any lack of resistance to nervous strain should not take up this occupation.

#### OCCUPATIONS SUITABLE FOR DEFECTIVE CHILDREN.

<i>Boys.</i>	BLIND.	<i>Girls.</i>
Basket making.		Book folding.
Mat making.		Ironing factory.
Knitting.		Typewriting.
Sewing.		Artificial flower making.
Chair caning.		Knitting.

BLIND—*continued.**Boys.*

Pianoforte tuning.  
 Boot and shoe making and  
 repairing.  
 Massage.  
 Typewriting.  
 French polishing.  
 Gardening.

*Girls.*

Sewing.

## PARTIALLY BLIND.

Porter.  
 Farm labouring.  
 Peddling.  
 House and garden boy.

Domestic service.

## CRIPPLES.

Boot making.  
 Tailoring (proper, not  
 pressing or cutting).  
 Ticket and show card  
 writing.  
 Sign and glass writers.  
 Printer.  
 Litho designing.  
 Map drawing.  
 Brush drawing.  
 \*Relief stamping.  
 Engraving and metal  
 engraving.  
 Metal chasing.  
 Photographic engraving.  
 Bookbinding.  
 Silversmith. [ing.  
 Watchmaking and repair-  
 Jewel-case making.  
 Chasing.  
 Stamping.  
 Photographer.  
 Leather bag maker.  
 Leather work and fancy  
 leather work.

Fine needlework.  
 Embroidery.  
 Lace making and mending.  
 Dress making.  
 Blouse making and mantle  
 finishing.  
 Ladies' tailoring.  
 Smocking.  
 Buttonholing.  
 Millinery.  
 Baby millinery.  
 Ostrich and fancy feather  
 making.  
 Feather curling.  
 Artificial flower making  
 and mounting.  
 Book hand folding.  
 Folding at stationers.  
 Bookbinding.  
 Clothes sorter.  
 Packer in laundry.  
 Colour printers.  
 Toy making.  
 Machine-made boot tack-  
 ing and fitting.

CRIPPLES—*continued.**Boys.*

Whip making.  
 \*Saddlery and harness making.  
 Football sewing.  
 Wood carver.  
 Carpentry.  
 Tapestry weaving.  
 Brush preparing and panning.  
 French polishing.  
 Basket making.  
 Chair caning.  
 Stick mounting.  
 Stick making.  
 Cricket-ball making.  
 Pipe making.  
 Toy making.  
 Nursery gardening.  
 Poultry farming.  
 Office boy.

*Girls.*

Machining with power machines.  
 Metal piercing and bur-nishing.  
 Jewellery polishing.  
 Silk hat crown sewing and trimming.  
 Envelope hand-folding and cementing.  
 Corset making.  
 Service.  
 Box making (cardboard).  
 Cork sorting.  
 Lampshade making.  
 Skirt making.  
 Straw hat making.  
 Tie and scarf making.  
 Typewriting.  
 Wig making.

## FOR THE GENERALLY DEFECTIVE.

All the foregoing except those marked \*.

Hair dressing.

Some poultry farm work.

Colour mixing and shading  
 (artificial florists).

Some nursery gardening.

Straw hat making.

Paper bag making (small).

## FOR THE ONE-ARMED.

Messengers.

Assurance agents.

Travellers.

Corn samplers.

Office boys.

Errand girls (in rare cases).

Office girls and clerks.

Canvassers for machines,  
 etc.

Embroidery.

Simple machine feeding.

With regard to cripple children, it is very necessary that they should meet with much patience and kindness from employers, and willingness to make allowance for the physical shortcomings of the children.

## DEAF AND DUMB.

*Boys.*

Boot making.  
Carpentry.  
Printing.  
Tailoring.

*Girls.*

Dress making.  
Housewifery.  
Laundry.

## DEAF.

Tailor.  
Boot maker.  
Cabinet maker.  
Brushmaker.  
French polishing.  
Baker.  
Pianoforte maker.  
Ivory turning.  
Confectioner.  
Builder and shopfitter.  
Wire worker.  
Revolving shutter maker.  
Glass worker.  
Woodcarver.  
Glass letter writing.  
Cooper.

Corset maker.  
Dress maker.  
Blouse maker.  
Collar finishing.  
Box making.

## PULMONARY TUBERCULOSIS (CONSUMPTION).

Errand boys. Unless well  
Van boys. enough to  
Messenger be appren-  
boys. ticed to a  
Golf caddies. healthy  
Newsboys. trade.  
Light porters.  
Insurance and commission  
Gamekeeper. [agent.  
Exhibition attendant.  
Fisherman (line fishing  
only).  
Chauffeurs (motor buses,  
taxis, private).  
Motor cleaning.  
Bus and tram conductors.  
Ticket collectors.  
Painters and decorators.  
Basket making.

Dress making.  
Needlework and embroi-  
dery.  
Millinery.  
Waistcoat making.  
Buttonhole making.  
Lace making.  
Ironing, folding, and  
mending (in laundry).  
Basket making.  
Net making and repairing.  
Umbrella making.  
Leather work.  
Jewel-case making.  
Cork sorting.  
Pea picking.  
Hop picking.  
Flower, market, or French  
gardening.

PULMONARY TUBERCULOSIS (CONSUMPTION)—*continued.**Boys.*

Station bookstall attendant  
(in open air).  
Farm labourers.  
General labourers (not very  
dusty jobs).  
Market and flower gar-  
deners).  
Carpenters and joiners.  
Wood carver.  
Wood road layer.  
Window cleaning.

*Girls.*

Flower selling.  
Poultry farming.  
Farm work (not in dairy).  
Message girls.  
Shop assistants and  
cashiers (if in hygienic  
surroundings).

Children who have suffered from enlarged tuberculous glands in the neck which have been removed by operation in all probability should preferably follow outdoor occupations, but the probability of harm resulting from taking up ordinary occupations is much less than when the lungs have been affected.

For children who have suffered from tuberculous peritonitis, only the most healthy outdoor occupations should be advised.

Joints that have been the seat of tuberculous disease must not be overused. Manual work should not be advised in such cases.

It would seem that railway clerks are particularly liable to pulmonary tuberculosis; it would be advisable that any child showing a predisposition to this disease should not take up this occupation.

**Epileptics.**—These should not be employed in factories or workshops in the vicinity of machinery, near fires or molten material, or in any occupation, such as bricklayer's labourer, involving climbing of ladders.

**Heart Disease.**—Children with chronic valvular disease of the heart of such a degree that failure of compensation (as shown by breathlessness on walking on level ground or exceptional distress when climbing hills) is imminent require light occupations of a comparatively sedentary nature, if they be fit for any work at all. Speaking generally, children with chronic valvular disease of the heart should not take up manual employment, especially those occupations involving the lifting of heavy weights.

## EXPLANATION OF MEDICAL TERMS.

**Angular conjunctivitis**, a contagious disease in which the margins of the lids at the outer corner of the eyes are red, slightly thickened, and moist. The condition persists indefinitely if not treated.

**Alopecia areata**, a disease of the scalp characterized by bald patches ; often mistaken for ringworm.

**Aortic stenosis**, form of chronic disease of the valves of the heart.

**Bacillus**, germ.

**Cerumen**, often used to indicate an accumulation of wax in the ear passage.

**Ciliary blepharitis**, inflammation of the margin of the eyelids.

**Conjunctiva**, the membrane lining the inner side of the eyelids and covering the whites of the eye.

**Conjunctivitis**, inflammation of the conjunctiva.

**Cornea**, the transparent part of the front of the eye.

**Congenital hip-disease**, a condition in which the head of the thigh-bone and its socket are not properly developed, and do not fit correctly into one another. If one-sided, the child limps ; if both sides are affected, the child has a peculiar waddling gait.

**Congenital morbus cordis**, disease of the heart occurring before birth, or incomplete development of the heart.

## 118 EXPLANATION OF MEDICAL TERMS

**Deflected nasal septum.** The vertical plate of bone separating the two sides of the nose is not placed symmetrically, but narrows the passage on one side.

**External auditory meatus,** ear passage.

**Furunculosis,** presence of boils.

**Genu valgum,** knock-knee.

**Genu varum,** bow-legs.

**Goitre,** enlargement of a gland in the neck situated in the middle line just below the Adam's apple. When it is accompanied by apparent protrusion of the eyeballs, the condition is known as exophthalmic goitre.

**Hæmophilia,** a condition in which alteration of the blood or bloodvessels is present, causing the patient to bleed excessively from a trifling injury.

**Hypertrophic rhinitis,** swelling of the covering of the bones in the nose, causing obstruction to the passage of air. When marked, it gives rise to mouth-breathing.

**Incontinence of fæces,** weakness of the back passage.

**Incontinence of urine,** weakness of the bladder.

**Keratitis,** inflammation of the cornea.

**Larynx,** the structure in which the voice is produced. It causes the projection in the throat known as the Adam's apple.

**Lordosis,** excessive forward curvature of the spine near the small of the back, causing undue prominence of the abdomen.

**Marginal blepharitis,** ciliary blepharitis.

**Mentally defective** { synonymous terms, under which are  
**Mentally deficient** { included feeble-minded, imbecile  
and idiot children.

**Mitral regurgitation** } forms of chronic disease of the  
**Mitral stenosis** } valves of the heart.

**Morbus cordis**, disease of the heart.

**Muco-purulent conjunctivitis**=blight, a contagious disease in which the eyes become red and matter forms. The sufferer feels as if grit were in his eyes. It usually lasts ten to fourteen days.

**Pityriasis alba**, scaly patches on the face, different from ringworm. They are of slight importance only.

**Phlyctenular conjunctivitis and keratitis**, inflammation of the conjunctiva and cornea accompanied by minute lumps, which at times give rise to corneal ulcers. These may eventually cause opacities, resulting occasionally in marked defect of vision.

**Seborrhœa capitis**, scurf.

**Seborrhœa corporis**, a skin disease of similar origin, affecting the body.

**Strabismus**, squint.

**Talipes**, club-foot.

**Tuberculous peritonitis**, tuberculous inflammation of the lining of the abdomen.

**Tinea capitis**, ringworm of the scalp.

**Tinea circinata**, ringworm of the skin.

**Tinea tonsurans**, ringworm of the scalp.

**Varicocele**, a collection of veins in the private parts in males.

# INDEX

- ABSCESS, 46  
 Adenoids, 3, 28  
 Anæmia, 52  
 Antitoxin, 83  
 Aphasic, 25  
 Artificial respiration, 104  
 Astigmatism, 3  
 Attendance, irregular, 48  
  
 Back passage, weakness of, 40  
 Backward children and employment, 109  
 Bed-wetting, 39  
 Blind, occupation for, 112  
 Boots, surgical, 42  
 Bronchitis, 32  
 Burns, 101  
  
 Carriers, 82  
 Cerebro-spinal fever, 95  
 Chicken-pox, 88  
 Chilblains, 58  
 Cleft palate, 17  
 Constipation, 56  
 Consumptives, occupations for, 115  
 Cough, 31  
 Cripples, occupations for, 113  
 Croup, 79  
 Crutches, 43  
 Curvature of spine, 40  
 Cuts, 100  
  
 Deaf, occupations for, 115  
 Deaf and dumb, 15  
     occupations for, 115  
  
 Diarrhœa, 55  
     lienteric, 56  
 Diphtheria, 78  
 Drainage, defective, 82  
 Drowning, 104  
 Dyspepsia. See Indigestion  
  
 Ear discharge, 13  
     foreign bodies in, 105  
 Earache, 15  
 Enteric fever. See Typhoid fever  
 Enuresis. See Bladder weakness  
 Epilepsy, 37  
 Epileptics and occupations, 116  
 Epistaxis. See Nose-bleeding.  
 Eyesight, defective, 1  
     testing of, 3  
     and employment, 107  
  
 Fainting, 103  
 Favus, 70  
 Fits, 37  
 Flat-foot, 41  
  
 German measles, 85  
 Glands, enlarged, 46  
  
 Headache, 53  
 Hearing, testing of, 14  
     and employment, 109  
 Heart disease, 34  
     and occupations, 116  
 Hoarseness, 18

- Hypermetropia. See Long-sight  
 Hysterical attacks, 103
- Idiot, 24  
 Imbecile, 24  
 Impetigo, 65  
 Incubation period, 73  
 Indigestion, 53  
 Infantile paralysis, 96  
 Infectious diseases, table regarding, 98, 99  
 Influenza, 97  
 Intestinal worms, 57  
 Intestines, chronic catarrh of, 55, 56  
 Itch. See Scabies  
 Itch mite, 61
- Keratitis, 68  
 Kyphosis. See Round shoulders
- Lateral curvature of spine, 40  
 Leg instruments, 42  
 Lice, 60  
 Lighting of classrooms, 6  
 Long sight, 2
- Malnutrition, 43  
 Measles, 83  
 Measurements of children, 44  
 Megrim. See Migraine  
 Membranous croup. See Diphtheria  
 Meningitis, cerebro-spinal, 95  
 Mental condition, 19  
     defective, and employment, 110  
     deficiency, 22  
 Migraine, 52  
 Moral imbeciles, 25  
 Morbilli. See Measles, 83  
 Mouth-breathing, 27  
 Mumps, 89
- Music, type for, 10  
 Myopia. See Short sight
- Needlework, 10  
 Nervous diseases, 37  
 Nose, foreign bodies in,  
 Nose-bleeding, 58
- One-armed, occupations for, 114  
 Open-air schools, 49  
 Otorrhea. See Ear discharge
- Paralysis, infantile, 96  
 Parotitis. See Mumps.  
 Partially blind, occupations for, 113  
 Partially deaf, occupations for, 113  
 Pertussis. See Whooping-cough  
 "Petit mal," 37  
 Phthisis. See Pulmonary tuberculosis  
 Physical exercises, restriction of, 34, 35  
 Physically defective, schools for, 50  
 Polio-myelitis. See Infantile paralysis  
 Pulmonary tuberculosis, 30  
     and occupation, 115
- Quarantine period, 73
- Rheumatic fever, 36  
 Rhinolalia, 17, 109  
 Rickets, 41  
 Ringworm, of body, 70  
     of scalp, 67  
 Round shoulders, 41  
     worms, 57
- Roseola  
 Rose-rash  
 Rötheln  
 Rubella
- } See German measles

- St. Vitus's dance, 36  
 Scabies, 71  
 Scalds, 101  
 Scarlet fever, 73  
 Schäfer's method of artificial respiration, 104  
 Schools, artificial lighting of, 6  
 Semi-deaf, 15  
 Short sight, 2, 5  
 Sight, testing of, 3  
 Small-pox, 92  
 Spectacle parade, 6  
 Speech, defective, 16  
     and employment, 109  
 Spine, tuberculous disease of, 50  
 Spotted fever. See Cerebro-spinal fever  
 Squint, 11  
 Stammering, 18  
 Stings, 101  
 Stuttering, 18  
 Surgical boots, 42  
 Swallowing coins, 102  
 Swimming class, 48  
 Thread-worms, 57  
 Tonsils, enlarged, 28  
 Tuberculosis, pulmonary, 30  
 Type for textbooks, 8  
 Typhoid fever, 90  
 Vaccination, 93  
 Varicella. See Chicken-pox  
 Variola. See Small-pox  
 Vermin, body, 60  
 Verminous clothing, 61  
     heads, 62  
 Vision, defective, 1  
 Whitlow, 46  
 Whooping-cough, 86  
 Word-blindness, 25  
 Word-deafness, 25  
 Worms, round-, 57  
     thread-, 57  
 Wry neck, 41  
 X-ray treatment of ring-worm, 69





