



QB 17 653

SCHOOL CLINICS

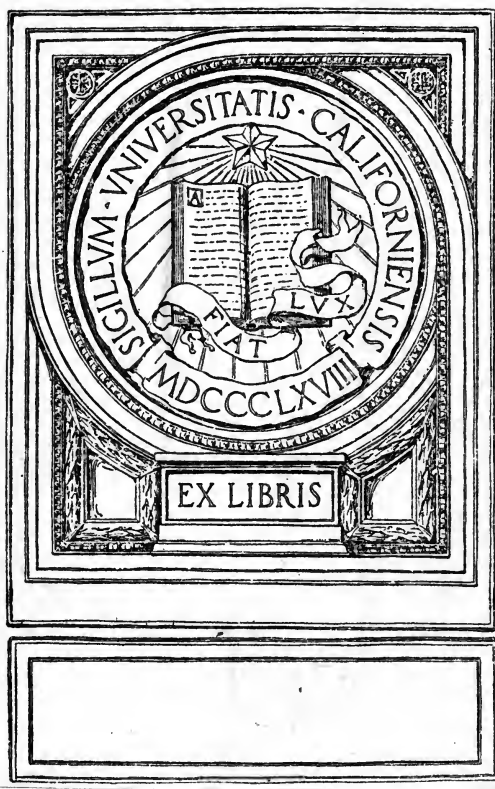
AT HOME AND ABROAD

BY

LEWIS D. CRUICKSHANK, M.D., D.P.H.

INTRODUCTION BY

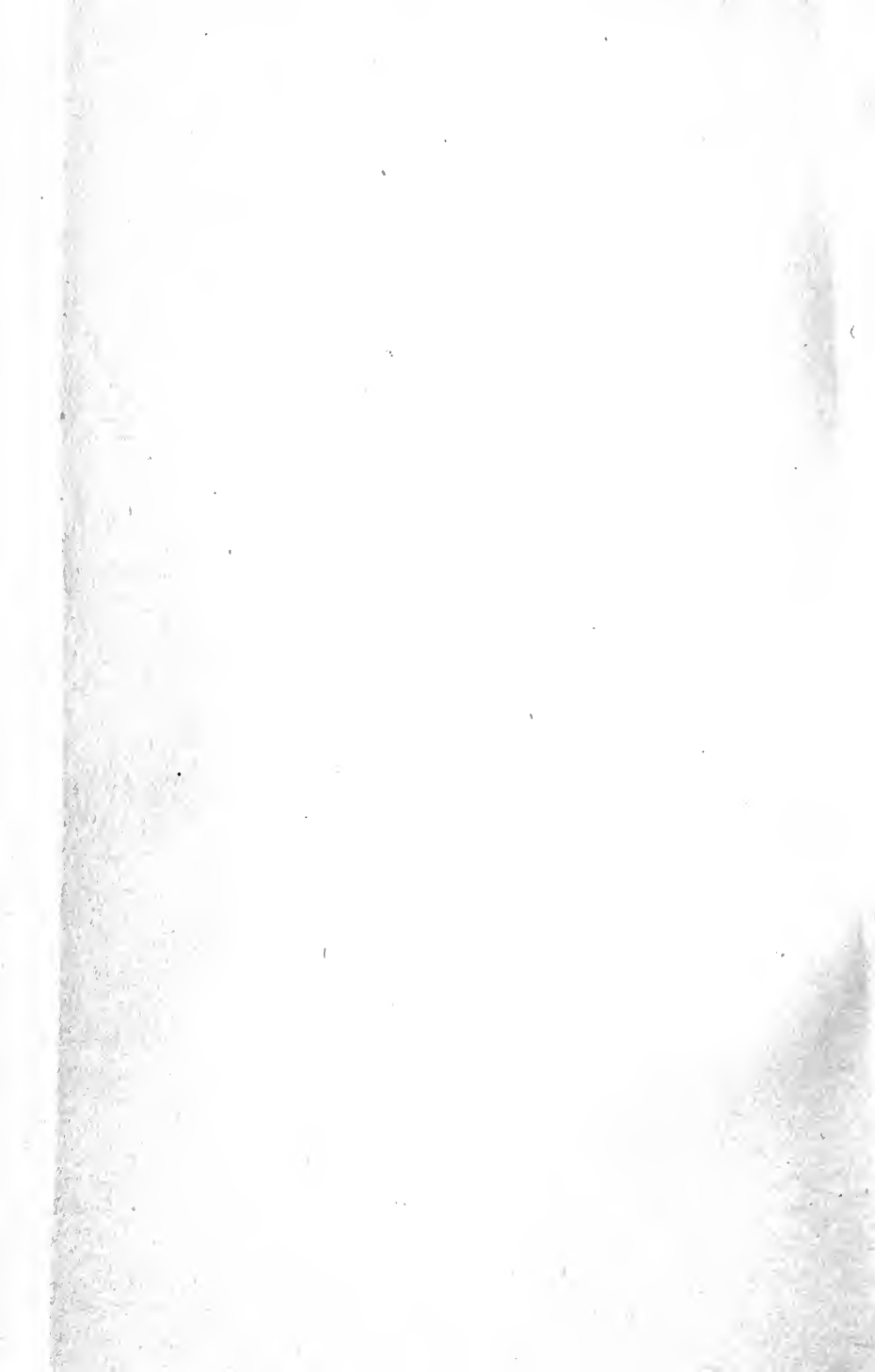
W. LESLIE MACKENZIE, M.D., LL.D.





Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

SCHOOL CLINICS



CALIFORNIA



[Frontispiece]

STRASSBURG DENTAL CLINIC—OPERATING-ROOM.

SCHOOL CLINICS

AT HOME AND ABROAD

BY

LEWIS D. CRUICKSHANK, M.D., D.P.H.

MEDICAL OFFICER AND INSPECTOR OF PHYSICAL EDUCATION, SCOTCH EDUCATION
DEPARTMENT; LATE PRINCIPAL OF THE DUNFERMLINE COLLEGE OF HYGIENE AND
PHYSICAL TRAINING

WITH GENERAL INTRODUCTION BY

W. LESLIE MACKENZIE, M.A., M.D., LL.D., F.R.C.P. Ed.

MEDICAL MEMBER OF THE LOCAL GOVERNMENT BOARD FOR SCOTLAND

WITH 21 ILLUSTRATIONS

LONDON

THE NATIONAL LEAGUE FOR PHYSICAL
EDUCATION AND IMPROVEMENT

4, TAVISTOCK SQUARE, W.C.

1913

LB3413
G7C7

PRINTED BY
HAZELL, WATSON AND VINEY, LD.,
LONDON AND AYLESBURY.

THE
LONDON
AND AYLESBURY

Dedicated

TO

SIR LAUDER BRUNTON, BART.,

M.D., D.Sc., LL.D., F.R.C.P. Lond., F.R.S.

WHO HAS SPENT HIS LONG AND LEISURELESS LIFE

IN

APPLYING SCIENTIFIC IDEAS TO THE PRACTICE OF MEDICINE

AND IN

WINNING THE WORLD TO A BELIEF IN THE

ETHICAL VALUE OF HEALTH AND STRENGTH.

P R E F A C E

By the kindness of Herr Doctor Jessen, of Strassburg, a European pioneer in the dental clinic movement, we are able to reproduce photographs of his latest developments. It is not too much to say that Dr. Jessen, by his generosity and active advocacy of dental clinics, has done more than any other man in the world of school hygiene to show the full range and immense importance of the school dental clinic.

To the School Dentists' Society, which is affiliated with the Child-Study Society and the National League for Physical Education and Improvement, we are indebted for many details taken from its latest publication—"School Dentists' Society, Objects and Aims" (1913). This little volume is already in its second edition—a fact that proves its usefulness.

To Dr. Storrow Shennan we are greatly obliged for permission to use so freely the materials collected in his "A Short History of School Dental Clinics."

To the Dunfermline Carnegie Trust we owe thanks for the use of blocks showing the practical working of the gymnastic clinic and other departments of the College.

To the Edinburgh School Board we also owe thanks for the illustrations of their newly established school clinics, the skin school at Lauriston, the Duncan Street open-air school, and the residential recovery

school at Humbie. In this matter the Edinburgh School Board has shown great enterprise.

The British Institute of Social Service and the National Committee for the Prevention of Destitution have helped us considerably by freely placing their information on this subject at our disposal.

The illustrations, as a whole, show the many lines of activity open to the health committees of education authorities.

Many other acknowledgments are made in the text, but a general expression of thanks is due to the many school medical officers and authorities that, by reports or returns, have contributed much valuable material.

The data regarding school clinics in Britain are based on returns obtained to June 1912. Many minor alterations may have taken place since then, but an effort has been made by comparison with later reports to bring the facts up to date.

W. L. M.

July 1913.

CONTENTS

	PAGE
PREFACE	7
GENERAL INTRODUCTION	17

PART I

GENERAL SURVEY OF THE PROBLEM OF THE TREATMENT OF SCHOOL CHILDREN WITH SPECIAL REFERENCE TO SCHOOL CLINICS

CHAPTER

I. THE GENERAL CASE FOR MEDICAL TREATMENT OF SCHOOL CHILDREN	23
II. LEGAL ASPECTS OF THE TREATMENT PROBLEM .	28
A. Statutory Powers applicable to England and Wales	28
B. Statutory Powers applicable to Scotland .	31
C. Statutory Powers applicable to England and Scotland	32
D. Special Treatment Grants	33
1. England	33
2. Scotland	36
3. Ireland	37
III. AVAILABLE MEANS OF TREATMENT	38
A. Private Practitioners	38
B. Charitable Hospitals and Dispensaries .	39
1. The Attitude of the Hospitals	39
2. The place of the Hospital in a Treat- ment Scheme	43

CHAPTER	PAGE
III.	3. Nature of Diseases requiring Treatment 44
(continued)	(a) Ear, Nose and Throat Hospitals 44
	(b) Eye Hospitals . . . 46
	(c) Dental Hospitals . . . 47
	(d) Skin Hospitals . . . 47
	(e) Orthopædic Hospitals . . . 48
	(f) General Hospitals and Hospitals for Children . . . 49
	4. Advantages of Hospital Treatment . 50
	5. Disadvantages of Hospital Treatment 51
	C. Children's Clubs . . . 54
	D. National Health Insurance . . . 54
	E. Treatment under Poor Law . . . 55
IV.	SCHOOL CLINICS—THEIR ADVANTAGES AND DIS- ADVANTAGES . . . 58
	A. Advantages of School Clinics . . . 58
	1. Facilities for Treatment . . . 58
	2. Simplicity of Organisation and Ad- ministration . . . 60
	3. Social Advantages . . . 61
	4. Educative Influences . . . 62
	5. Further possible Advantages . . . 64
	B. Disadvantages of School Clinics . . . 64
	1. Clinics applicable only to more or less Populous Districts . . . 65
	2. Clinics apt to lessen Parental Respon- sibility . . . 65
V.	THE ORGANISATION, FUNCTIONS AND MANAGE- MENT OF A SCHOOL CLINIC . . . 66
	A. Organisation . . . 66
	B. Functions . . . 67
	1. The Inspection Clinic . . . 67
	2. The Treatment Clinic . . . 69

CONTENTS

II

CHAPTER	PAGE
V. C. Management	69
(continued) 1. Effective Supervision of Treatment .	69
2. Effective Control of Attendance .	70
3. Accurate Registration of Cases . .	71
 VI. THE SCHOOL CLINIC—ITS DEPARTMENTS AND WORK	 75
A. General Medical Department	80
1. Treatment of Minor Ailments	80
2. Cleansing Schemes	82
3. X-Ray Treatment of Ringworm	83
B. Ophthalmic Department	85
1. Treatment of Inflammatory Diseases of the Eye	86
2. Correction of Visual Errors	87
3. Equipment of Ophthalmic Department	88
4. Supply of Spectacles	89
5. Rural Eye Clinics	90
C. Dental Department	91
1. Dental Inspection	92
2. Dental Treatment	93
3. Equipment of Dental Clinic	95
4. Dental Treatment in Counties	96
D. Orthopædic Department	97
1. Dunfermline Orthopædic Clinic	98
2. Deptford Orthopædic Clinic	100
3. Gymnastic Treatment	101
4. Accommodation for Gymnastic Treat- ment	102
5. Equipment for Gymnastic Treatment	102
6. Collective Gymnastic Treatment	102
E. Operative Work	104

*PART II*GENERAL REVIEW OF TREATMENT SCHEMES AND
SCHOOL CLINICS NOW IN OPERATION IN
BRITAIN

CHAPTER	PAGE
VII. TREATMENT SCHEMES AND SCHOOL CLINICS IN OPERATION	105
A. Tables of Centres	105
B. Who provides the Clinics ?	111
C. How and why the Clinics were formed	114
D. Dates of Establishment	115
E. Sanction of Board of Education	115
F. Number of Schools and Scholars affected . . .	116
G. Branches of Work Undertaken	116
1. Dentistry	116
2. Eye—Correction of Visual Defects	117
3. Skin Diseases	118
4. Tonsils and Adenoids	119
5. Remedial Exercises	119
6. Stammering, etc.	119
7. Minor Ailments	119
H. When the Clinics are Open	120
VIII. ATTITUDE OF DOCTORS AND PARENTS	121
A. Attitude of Doctors	121
B. Attitude of Parents	122
IX. THE STAFF OF THE SCHOOL CLINIC	123
A. Whole-time or Part-time Staff ?	123
B. Staff already employed	125
C. Voluntary Workers	128

CONTENTS

13

CHAPTER	PAGE
X. ACCOMMODATION AND EQUIPMENT . . .	130
A. Accommodation	130
B. Equipment	132
XI. FINANCE	134
A. Cost of Installation	134
B. Salaries and Wages	134
C. Rent, Lighting, Heating, etc.	135
D. Drugs and other Material	135
E. Miscellaneous Expenditure	135
F. Increase in the Rates	136
XII. PAYMENTS FROM PARENTS, etc.	137
A. General Payments	137
B. Payments for Dentistry and Spectacles	138
C. Payment according to Income	139

PART III

SCHOOL CLINICS ABROAD

XIII. SCHOOL CLINICS ABROAD	142
A. Australia	142
B. Austria	143
C. Belgium	145
D. Canada	145
E. Denmark	146
F. Finland	146
G. France	147

CHAPTER	PAGE
XIII. H. Germany	149
(continued) I. Italy	155
J. New Zealand	156
K. Norway	156
L. Russia	156
M. Spain	158
N. Sweden	158
O. Switzerland	160
P. United States of America	162
CONCLUSION	164

APPENDIX

DUNFERMLINE SCHOOL DENTAL CLINIC	166
GEOGRAPHICAL INDEX	169

LIST OF ILLUSTRATIONS

STRASSBURG DENTAL CLINIC—OPERATING-ROOM	<i>Frontispiece</i>
	FACING PAGE
DUNFERMLINE COLLEGE OF HYGIENE AND SCHOOL CLINICS	
—GROUND FLOOR PLAN (NEW BUILDINGS)	66
DUNFERMLINE COLLEGE OF HYGIENE AND SCHOOL CLINICS—FIRST FLOOR PLAN (NEW BUILDINGS)	68
DUNFERMLINE GENERAL SCHOOL CLINIC—TEMPORARY PREMISES	76
EDINBURGH—LAURISTON PLACE SCHOOL FOR SKIN DISEASES (PLAYGROUND)	80
EDINBURGH—LAURISTON PLACE SCHOOL FOR SKIN DISEASES (TREATMENT-ROOM)	82
DUNFERMLINE EYE CLINIC	86
EDINBURGH EYE CLINIC	88
EDINBURGH DENTAL CLINIC	92
DUNFERMLINE ORTHOPÆDIC CLINIC	98
DUNFERMLINE ORTHOPÆDIC CLINIC (TREATMENT OF SPINAL CURVATURES)	100
DUNFERMLINE ORTHOPÆDIC CLINIC (RESPIRATORY EXERCISES, ETC.)	102
CORNER OF DUNFERMLINE ORTHOPÆDIC CLINIC	104
EDINBURGH—DUNCAN STREET SPECIAL SCHOOL	116

	FACING PAGE
EDINBURGH—WILLOWBRAE SPECIAL SCHOOL ("OPEN-AIR" CLASS-ROOM)	124
CHILDREN'S VILLAGE, HUMBIE, BELONGING TO EDINBURGH CHILDREN'S HOLIDAY FUND	130
SCHOOL AT CHILDREN'S VILLAGE, HUMBIE, EDINBURGH	132
STRASSBURG MUNICIPAL DENTAL CLINIC—EXTERIOR OF BUILDINGS	148
PLAN OF STRASSBURG DENTAL CLINIC	152
STRASSBURG DENTAL CLINIC—DR. JESSEN AT WORK	154
STRASSBURG DENTAL CLINIC—RINSING-ROOM	156

GENERAL INTRODUCTION

SIR GEORGE NEWMAN'S admirable reports have made the educational public of Great Britain familiar with the aim and scope of school clinics, which have sprung up rapidly under his fostering direction at the Board of Education. Indeed, the ripening of opinion on the whole question of the treatment of school children is mainly due to the masses of concrete fact set forth year by year in those well-crowded Blue Books.

The present volume has been prepared for the active citizen. It has grown out of an investigation conducted by the National League for Physical Education and Improvement. Up to June, 1912, schedules were issued to those in charge of school clinics in Britain. The returns were collated by Miss Halford, Secretary of the League, who has carefully condensed the large masses of detail into an easy narrative. Miss Halford has also collected and prepared the material for the sections on school clinics abroad. The main body of the volume has been prepared by Dr. Lewis Cruickshank, who has drawn from his experience as Principal of the College of Hygiene and Physical Training at Dunfermline many suggestions for the expansion and organising of clinics as an integral part of the system of physical education. That the functions of the school clinic may stand out more definitely, he has sketched the legal powers of

treatment and the nature of the institutions available for making those powers a reality. From many administrative sources he has brought together general opinions on policy and descriptions of actual institutions.

Of the many objects of the League one is to make known as widely as possible the best results of official and voluntary institutions for the improvement of health and physical education. This volume is one of a series designed to put before the general citizen information of a kind that will enable him not merely to appreciate the official books and reports, but to spread their influence among the homes of the nation. From time immemorial the treatment of the sick has relied, not unsuccessfully, on the organising power of human sympathy. Nothing in our modern civilisation is more impressive than the splendid growth and specialisation of hospitals, convalescent homes, sanatoria, dispensaries, clinics, and other organisations for the application of scientific ideas to the cure of disease.

The generative impulses of philanthropy are neither less numerous nor less powerful to-day than in any past generation. But, as civilisation advances, the intensive study of disease demands more and more organisation. The multitudes of minor ailments revealed in the inspection of children tend to outrun the resources even of the great voluntary services. The children's hospitals are as busy as ever; the voluntary clinics are everywhere crowded; there are children's homes, open-air schools, schools and homes for cripples and mentally defective, day nurseries, nursery schools, and other varieties of institution specialised to the nurture of children. Yet immense fields of treatment are still unoccupied. The accelerated development obvious everywhere has

undoubtedly come as the direct result of the medical inspection of school children. The nation has awakened to the hygienic needs of the infant citizen. Ten years ago, as the result partly of the African war and partly of the special investigations stimulated by it, the demand for the medical inspection of school children became so strong that, almost without a dissentient voice, Parliament established the system now operative all over the country. Hundreds of thousands of children have been examined by trained medical men and women. Multitudes of defects and ailments have made fresh developments in organisation imperative. To-day the demand for treatment is as powerful as the demand for inspection was ten years ago. To this demand the school clinic is a response. The purpose of inspection and treatment is to secure that the younger generation shall grow up as fit physically and mentally as the applied science of the day makes possible. But the healthy growth of a child is a function of many variables. If we are to make men out of children, we now know that, in the infinitely complex conditions of modern life, we cannot do so by letting the children take care of themselves.

Medical treatment and supervision, it is true, cannot solve all the problems centred in the school child; yet this it can secure—that he shall come to school clean; that he shall have his vision tested and corrected if it is defective; that he shall have his ears treated if he cannot hear; that he shall have his skin diseases cured or kept harmless; that he shall have his heart, his lungs, his bones, his joints examined before he is required to undergo physical education; that he shall have his hours of work adapted to his individual capacity; that he shall have sufficient healthy play to preserve his elasticity and to promote his growth;

that, in a word, he shall have, at every stage of his growth, his maximum chance of attaining to physiological fitness.

In the fulfilment even of this limited purpose there is a long road to travel, and it will be many years before the general results can be tested. But every parent has many individual tests ready to his hand. Is the child better fitted physically to do the mental work required of him? This is a question that every parent can, in some degree, answer for himself. He needs no elaborate methods of research; he needs no special knowledge; he needs only the minimum of common sense. Does my child see properly? Does he hear properly? Is he happy and spontaneous in his activities? Does he sleep well, eat well, run well and look well? Does he enjoy life at the school, or is he exhausted by it? Is he nervous, ill-tempered, easily wearied, morose, silent, dull? Does he have pain? Is he lame of limb, clear of voice, active in attention? Is he restlessly curious? Can he play? Can he shout at the top of his voice with all his heart? These are a few of the questions that every parent can ask. Is it much to expect that every parent should ask them and try to answer them? How far the school clinic may assist the parent to answer his own questions lies with the future. In the volume now offered him for his guidance, he will find some indication of the range of possible treatment and of the ways of organising it.

The object of the League is not so much to discuss scientific ideas as to promote their application in practice. This is why the present volume combines a minimum of theory with a maximum of practical detail. Precept is good; example is better. Here examples predominate. The volume should prove of service to every person engaged in educational admin-

istration—members and officers of education authorities, of public health authorities, of school boards, of private schools, of training colleges, of care committees, and other organisations for the promotion of education in health. The details of expense and management should economise the time both of authorities and of their officers. The references and quotations should make further inquiries easy. It is, therefore, the hope of the League that the volume may assist in the organisation and development of the national movement towards the health of the school child.

But it is always well to recollect that the purpose of medical inspection and treatment is not itself a merely medical purpose. The purpose is to aid in the producing of as high a type of human being as the inherited capacity of the individual entitles him to be. And the feeblest human being is at least a self-conscious personality, acting and re-acting in the rich and varied world of civilised life. To guide the growth of personality is the problem of education. The doctor, the teacher of health, can do something to assist the teacher of ideas. "If to some of you," says William James, "the things I have said seem obvious or trivial, it is possible that they may appear less so when, in the course of a year or two, you find yourselves noticing and apperceiving events in the school-room a little differently, in consequence of some of the conceptions I have tried to make clear. I cannot but think that to apperceive your pupil as a little sensitive, impulsive, associative, and re-active organism, partly fated and partly free, will lead to a better intelligence of all his ways. Understand him, then, as such a subtle little piece of machinery. And if, in addition, you can also see him *sub specie boni*, and love him as well, you will

be in the best possible position for becoming perfect teachers." ¹

It is this high conception that consecrates these many details in the ritual of life. The health of the child is wealth to the nation.

W. LESLIE MACKENZIE.

¹ "Talks to Teachers," p. 196.

PART I

GENERAL SURVEY OF THE PROBLEM OF THE TREATMENT OF SCHOOL CHILDREN WITH SPECIAL REFERENCE TO SCHOOL CLINICS

CHAPTER I

THE GENERAL CASE FOR MEDICAL TREATMENT OF SCHOOL CHILDREN

1. TEN years have now passed since the "Report of the Royal Commission on Physical Training (Scotland), 1903," directed the attention of Parliament to the need for systematic medical inspection of school children. Many years previously medical inspection of school children had become an established part of educational administration in several European countries.

For this country, however, the publication of the Commissioner's Report was epoch-making in the history of medical inspection. Public opinion responded with remarkable rapidity to the suggestion of medical inspection, and, in an incredibly short period for so great a departure, legislation requiring systematic medical inspection of all children attending State-aided and voluntary schools was, with the general assent of every class in the community, placed upon the Statute Book.

2. In 1907 the Education (Administrative Provisions) Act made medical inspection of schools and scholars compulsory in England and Wales. In the following year the Education (Scotland) Act, 1908, gave to school boards powers to institute medical inspection, and to the Education Department compulsory powers to deal with such school boards as failed to avail themselves of the powers conferred on them by the Act.

3. The organisation of medical inspection throughout the country needed time, if only to secure that the machinery should be made to run smoothly and that parents should come to appreciate the new phase of State interest in the growth and education of their children. But the country has already "settled down" in its attitude towards the great new movement, and we may now say that medical inspection of school children is generally regarded with favour, and that few objections are raised by parents or other guardians to the examination of children. It is, indeed, a tribute to the sense of the community that a movement of such magnitude and loaded with such possibilities for the well-being of our future citizens should have been initiated and developed to such a high degree of efficiency in so short a time and with so little opposition.

4. The potentialities of this new organisation for raising and maintaining at a high level the general physical well-being of the people are scarcely to be realised at present. The point of immediate interest is the benefit accruing to those children that come under the scrutiny of the school medical officer. This is, however, not the *only* point of interest.

The placing of the medical officer on the educational staff at once suggests the possible establishment of new and important lines of research into many problems of medico-educational importance. Like every other science, the science of school hygiene will develop its own methods and its own lines of research. There is, for example, the problem of food in relation to brain work, the significance of fatigue, and many other fascinating and difficult problems. On these it would be interesting to speculate. But they lie beyond the scope of the present volume, which must occupy itself with the pressing problems of disease.

5. With perhaps one exception, viz., Zetland, every town and county in England, Wales and Scotland has now in operation a complete system of school medical inspection. In England the scheme has been in operation for four years; in Scotland, for three years. The facts revealed during this comparatively short time

have produced a profound impression upon the country. Already the question of treatment, the natural corollary to inspection, has forced itself upon the attention of the State. The number of cases requiring treatment has been found to be so great that the demand for treatment has far exceeded the means of supply.

6. Let us briefly retrace the stages through which the school hygiene movement has passed to its present state of development. The Royal Commission on Physical Training (Scotland), 1903, was appointed :

To inquire into the opportunities for physical training now available in the State-aided schools and other educational institutions of Scotland ; and to suggest means by which such training may be made to conduce to the welfare of the pupils ; and further how such opportunities may be increased by continuation classes and otherwise, so as to develop in their practical application to the requirements of life the faculties of those who have left the day schools, and thus to contribute towards the sources of national strength.

The Commission found, as a result of its investigations, that before any good effect of a rational system of physical education could be expected, it would be necessary to carry through an individual medical inspection, to ensure that every child was fit to profit by the physical training proposed. This medical examination, though primarily intended to determine the capacity of the child for physical work, led incidentally to the discovery of many diseases that required treatment. But when the need for medical inspection was thus fully demonstrated and the obligation to carry it out was laid upon education authorities, it was probably believed that any necessary treatment could be undertaken by the ordinary means then available—viz. by private practitioners, hospitals, dispensaries, other charitable agencies and Poor Law. It is probable, therefore, that, in suggesting medical inspection, those immediately interested did not contemplate schemes that should involve treatment as part of the State's obligation to childhood—at least, not on the scale now seen to be inevitable. But the State has accepted the responsibility, and has already made large grants for the treatment of necessitous

children. It may be accepted that the assumption of this responsibility by the State is the result of a proved necessity. It is still contended in some populous centres that the present available means of treatment are quite adequate to the needs of the children within those centres, and that all requiring treatment are able to obtain it. This may, to some extent, be true; for, undoubtedly, populous centres vary greatly in their means of supply, more especially in the specialist forms of treatment frequently necessary. It is possible, therefore, that in some localities the majority of children can receive advice, and, in many cases, adequate treatment, from private practitioners, hospitals and other institutions. But even in those centres it is doubtful whether the treatment available is either efficient or economical, since many of the diseases from which school children suffer are of such a nature as to require daily, painstaking, skilled attention in order to effect an early and satisfactory cure.

The experiment of utilising voluntary agencies for treatment of the diseases of school children has been fully tested in most of the large educational centres. Those agencies have accomplished a great deal of excellent work; but they have proved themselves unable to cope with the great numbers of children requiring attention.

7. It, therefore, becomes necessary to establish a new institution, the special function of which shall be to undertake the treatment of those diseases for which the existing organisations are inadequate. Clearly this new institution will be "special" in its aims, adapting itself to the particular groups of diseases with which it must deal. It will grow naturally out of the school organisations. It has indeed already found its name—the School Clinic. Etymologically, the term is perhaps difficult to defend; but every "clinic" has at least one couch (or *clinē*) or one dental chair! But if the pedant chooses to limit the term "clinic" to a place with beds, he will find usage too strong for him. And after all etymology is only ancient usage.

That the school clinic is one of the most satisfactory methods of efficiently and economically overtaking

the great amount of treatment necessary on behalf of school children, is rapidly becoming apparent to everybody.

8. But even already the school clinic, primarily instituted as a centre for treatment, is becoming the centre of many other branches of work. There is evidence that it will become the correlating centre for all the measures that educational authorities are making, in ever-widening range, for the physical well-being of the children under their care.

9. Briefly, it may be said that the primary investigations of the Royal Commission established the need for medical inspection, and medical inspection has now established the need for organised treatment on an extended basis. The provision of treatment in its turn is rapidly leading to a more intimate conception of the possibilities of prevention through improved environment and early medical care of the individual child.

10. Thus, by a somewhat circuitous route, the objects for which the Royal Commission was issued are likely to be attained, and attained on a higher plane than was at first conceived—viz., by the application of physical training not as itself the principal factor in combating physical inefficiency, but as an integral part of an organised system of educational hygiene.

CHAPTER II

LEGAL ASPECTS OF THE TREATMENT PROBLEM

11. IN our consideration of the legal aspects of the treatment question, we are not concerned with those comprehensive statutory powers that enable sanitary authorities to deal with the notification, isolation and treatment of infectious diseases, nor with the powers of preventing the spread of disease by infected persons, clothing, dwellings, etc. These powers were extensively employed by public health authorities before the establishment of medical inspection of schools and school children. And although the establishment of school medical inspection may have stimulated, in some degree, indifferent authorities to fulfil their obligations under the statutes, these powers do not to any considerable extent cover the treatment of those conditions of school children with which we are here concerned.

Apart, however, from the public health statutes, there are others, which touch more closely the general question of disease and physical unfitness among school children.

A. STATUTORY POWERS APPLICABLE TO ENGLAND AND WALES

12. Of those statutory powers the following are applicable to England and Wales :

1. The Elementary Education (Blind and Deaf Children) Act, 1893, provides for the education of blind and deaf children.

Although this Act does not make provision for any medical treatment in the strict sense of the word, it nevertheless ensures that education shall be conducted with a view to preventing the infliction of further injury upon sense organs that are already

physiologically functionless. Thus many children may have their vision so seriously defective as to be unable, without risk of further damage to an already weakened organ, to pass through the ordinary school curriculum. These children are, in truth, "educationally" blind, and a rational means of education is to them, in a sense, a means of treatment.

2. The Elementary Education (Defective and Epileptic Children) Act, 1899, provides for those children that may be physically defective, mentally defective or epileptic.

The term "physically defective" is capable of a wide interpretation, and may be made to include cripples, children suffering from tuberculous disease or any other physical condition that may render them unfit to attend the ordinary school. This Act, although it does not specifically sanction treatment, enables the education authority to provide special schools. Such schools, if constructed on open-air principles, provide of themselves a form of treatment that is at least ameliorative, if not in every case curative. It is difficult, of course, except in large educational centres, to provide special schools, and so we find that, to a large number of ailing children, open-air education is not available.

3. The Education (Provision of Meals) Act, 1906, makes provision for the feeding of children that are suffering from the effects of under-nourishment.

4. The Education (Administrative Provisions) Act, 1907.

This Act, in addition to imposing upon education authorities the duty of medical inspection, gives to those authorities :

The power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of children educated in the public elementary schools: provided that in any exercise of powers under this section the local authority may encourage and assist the establishment or continuance of voluntary agencies and associate with itself representatives of voluntary associations for the purpose. [Sec. 13 (1) (b).]

It is clear that this part of the section of the Act gives very comprehensive powers for the provision of treatment by local education authorities. But it is equally clear that a restraining hand may

be laid upon the authorities by the Board of Education. No treatment scheme, maintained out of the rates, can be established by local education authorities without the sanction of the Board of Education.

13. The Board of Education as the central authority, in possession of valuable information with reference to the lines of action that would offer the best chance of efficient and economical treatment, issued a circular (Circular 596, 1908) indicating to the local education authorities the order in which, in the Board's opinion, the work of amelioration should be undertaken by those authorities exercising their powers under the Act.

The following quotations from the circular indicate the scope of the legal powers :

(d) *Advice or Direction to Parents.*—Where medical inspection reveals any defect or malady in a particular child, the first step will naturally be to notify the parents, and, unless the ailment is a minor one which can be removed by home treatment or treatment (under the direction of the school medical officer) by the school nurse, to urge upon the parent the desirability of obtaining treatment by an ordinary medical practitioner. In extreme cases of insanitary homes or conditions, the attention of the sanitary authority will, of course, be called to the matter.

(e) *The School Nurse.*—A school nurse is capable of performing very useful and important functions, both in assisting in the work of medical inspection and (under medical instructions) in applying, or showing the parents how to apply, remedies for minor ailments. Such matters as the antiseptic treatment of discharging ears, the treatment of sores and minor skin diseases, or minor diseases of the eye, such as blepharitis and conjunctivitis, the treatment of slight injuries resulting from accident, will fall within the scope of the work of the school nurse. So far as the school nurse can be regarded as assisting in the work of medical inspection, the sanction of the Board to her employment is not required. So far, however, as she is engaged in treating the minor ailments, or in visiting the children's homes for purposes of advice, her employment would require sanction as an "arrangement" for attending to the health and physical condition of the children. The Board would usually have no difficulty in sanctioning any well-considered scheme for this purpose.

(f) *Provision of Spectacles, etc.*—In cases where medical inspection shows that the provision of spectacles is necessary for the treatment of defective eyesight, the Board will be prepared to consider proposals from a local education authority to provide suitable and inexpensive spectacles free of charge. They will, however, only sanction such an "arrangement" if they are satisfied that every endeavour will first be made to obtain the provision of the spectacles

by the child's parents or by any voluntary associations which exist for the purpose. The Board will, of course, require that due precautions should be taken to secure accurate examination and appropriate prescription by qualified medical men of suitable experience.

(g) *Contributions to Hospitals, Infirmaries, Dispensaries, etc.*—Special attention should be paid to the powers referred to in the proviso to Section 13 (1) of the Act, and the Board consider that before the direct treatment of ailments is undertaken by the local education authority, whether by means of a school clinic or by themselves supplying and paying for medical treatment, full advantage should be taken of the benefits of such institutions. The Board will be prepared to entertain proposals for contributing to the funds of hospitals, dispensaries and nursing associations on terms of adequate advantage. Such contributions are specially desirable in the case of eye hospitals and cottage hospitals which are prepared to undertake minor surgical operations. It is permissible to include among the conditions of contribution a provision allocating a reasonable remuneration to the medical men working for such institutions. Among the associations to which contributions might properly be made are "children's care associations," who, by means of local sub-committees or local representatives, arrange for the individual treatment of poor school children by voluntary agencies or otherwise.

(h) *School Clinics.* . . . The establishment of school clinics for the purposes of *treatment* of defects revealed by inspection gives rise on the other hand to questions of considerable difficulty, and, before sanctioning the establishment of a school clinic as an "arrangement" under Section 13 (1) (b) of the Act, the Board will require to be furnished with detailed information as to the methods and scope of the work which it is proposed to do. They will, in particular, require to be informed :

1. What precautions the local education authority will take to secure that only those children shall be treated in a school clinic for whose treatment adequate provision cannot otherwise be made, whether by the parents or by voluntary associations or institutions, such as hospitals, or through the agency of the Poor Law.

2. What precise diseases and defects will be treated.

3. By whom and on what terms and conditions the treatment will be carried out and what will be its extent.

4. What is the estimated cost of the clinic in respect of buildings and equipment, maintenance and administration, and treatment, and how it is proposed to meet this cost, out of the rates or otherwise.

B. STATUTORY POWERS APPLICABLE TO SCOTLAND

14. The following statutory powers are applicable to Scotland :

1. Education of Blind and Deaf Mute Children (Scotland) Act, 1890.

This Act makes provision for blind and deaf mute children similar to that made by the Elementary Education (Blind and Deaf Children) Act, England.

2. The Education of Defective Children (Scotland) Act, 1906, makes provision for the education and, if need be, for special accommodation for physically defective, mentally defective and epileptic children, on the same lines as the English Act. This Act provides also for the medical inspection of those children, but does not specifically sanction medical treatment.

C. STATUTORY POWERS APPLICABLE TO ENGLAND AND SCOTLAND

15. Provisions common to England, Wales and Scotland are :

1. The Children Act, 1908.

Section 122 of this Act gives comprehensive powers to local education authorities for the inspection and cleansing of verminous children.

2. Both the English and Scotch codes of regulations for the management of day schools require that physical exercises shall form part of the regular school curriculum.

Where this subject is under the charge of an efficiently trained teacher, physical training may have a decidedly ameliorative influence on many defective or diseased conditions.

16. It will be seen that, as far as Scotland is concerned, there are no statutory powers enabling school boards to institute treatment-schemes supported by the Education Rate. It was thought that under Section 6 of the Education (Scotland) Act, 1908, it might have been legal for school boards to apply the school rates for the purpose of treatment. A test case to the Court of Session was submitted by the Glasgow School Board. In January of the present year the Court issued its decision that the cost of treatment could not legally be defrayed out of the school rates.

As regards the provision of treatment English education authorities have thus a clear advantage over the Scottish school boards, and at the moment of collecting the information that forms the basis of

the present volume, Scotland was in the unfortunate position of possessing only one school clinic—viz., that provided by the Carnegie Trust at Dunfermline.

D. SPECIAL TREATMENT GRANTS

17. It has already become evident that the amount of treatment necessary in order that necessitous children may receive the attention they require is greater than may be reasonably expected of hospitals, dispensaries and other charitable institutions. Indeed, in order to secure efficient treatment, it has become necessary to give grants in aid to local education authorities, partly to stimulate them to greater activity and partly to relieve the Education Rate (England). The Treasury has made large grants to the Board of Education and to the Scotch Education Department to be distributed to the local education authorities and school boards.

I. ENGLAND

For the year ending March 31, 1913, the grant made to the Board of Education was £60,000.

18. The conditions under which the grant is distributed are fully set forth in the circular (Circular 792) issued by the Board of Education.

“On fixing the grant for children attending public elementary schools, the Board will take into consideration the following points :

For the purpose of assessing grants in respect of the work of the school medical service which is ancillary to, or associated with, medical treatment, the Board will be prepared to take into account ameliorative undertakings falling under any of the following heads, if carried out by the school medical officer or his staff, or under his direction or supervision :

(a) The re-examination, after a suitable interval, of children found to be defective at the routine inspection, with a view to ascertaining whether appropriate treatment has been obtained, and the results of any treatment ;

(b) The further examination (including the examination of defective eyesight for errors of refraction) at inspection clinics or elsewhere of children who have been found to be defective at the routine inspection ;

(c) The examination at inspection clinics or elsewhere of "special" cases referred by school attendance officers, care committees, teachers, parents and others ;

(d) The "following-up" of cases of defect by school nurses or health visitors by means of visits to the schools or the homes of the children in order to ascertain whether the parents have obtained and are following medical advice, or with a view to advising, instructing or aiding parents in regard to obtaining treatment of minor ailments, or with a view to arranging for or supervising the cleansing of children who have been found to be in an uncleanly or verminous condition ;

(e) The "following-up" and after-care of cases of defect by children's care committees and other agencies working in co-operation with the school medical officer.

"Similarly, for the purpose of assessing grants in respect of medical treatment proper, the Board will take into account treatment falling under any of the following heads, if carried out by the school medical officer or his staff, or under his direction or supervision :

1. The treatment of minor ailments carried out by school nurses ;
2. The provision of spectacles, surgical or other appliances ;
3. Arrangements for medical or surgical treatment at hospitals, infirmaries, dispensaries, etc., or by private practitioners ;
4. Treatment at school clinics whether at general clinics for the treatment of various kinds of defects, or at special clinics providing for one type of ailment only—*e.g.*, dental caries.

"In assessing grants under the Regulations, the Board will examine closely the authority's arrangements for co-ordinating the work of the school medical service with voluntary or other agencies, in order that the fullest possible use may be made of all available facilities or agencies for treatment already existing in the area. They will also consider carefully the arrangements made and enforced for the control of infectious, contagious and other diseases (including the provision for the exclusion and re-admission of individual children), and for securing co-ordination between the school medical service and the school attendance department. Such inter-relation will ensure that the school medical officer has full knowledge of all children absent from school on medical grounds, and will enable him to satisfy himself that, on the one hand, the children are receiving the necessary treatment to allow of their return to school at the earliest opportunity, and, on the other hand, are not

re-admitted too soon or in a condition likely to prove detrimental to themselves or to other scholars.

"In all cases in which defects are discovered, it is essential that clear and full records should be kept of the steps taken to secure effective medical treatment, the nature of the treatment provided and its results. This is necessary, not only that the local education authority may be in a position to judge of the effectiveness of the work, but also for the purpose of preparing an adequate statement of the results accomplished, which will be available for the consideration of the Board when they proceed to assess the grant under the Regulations.

"The Board desire to direct special attention to Section 163 of the Report for 1910 of their chief Medical Officer. As indicated in that Section, it appears that the disorders and maladies which are most suitable for treatment directly provided by local education authorities under Section 13 of the Education (Administrative Provisions) Act, 1907, are limited in practice to minor ailments, uncleanness, ringworm and other common skin diseases of children, defective eyesight or hearing, some external affections of the eyes and ears, and various temporary conditions of the mouth (including teeth), nose and throat. It is impossible entirely to exclude other conditions of a more general nature which can be dealt with while the child is in attendance at school, but there are affections and ailments which the Board would regard as being outside the ordinary province of the school medical officer, and which they would not deem suitable for inclusion in the authority's scheme of treatment, unless it was shown that adequate treatment at a reasonable cost could not be otherwise obtained."

"Grant will be assessed on the basis of the work done during the year ending on July 31, 1912. In fixing the grant the Board will take into consideration :

- (a) The number of children in attendance at public elementary schools maintained by the authority ;
- (b) The assessable value of the area ;
- (c) The actual expenditure incurred by the authority in respect of their school medical service ;
- (d) The extent to which other agencies for providing treatment in the area are utilised ;

(e) The co-ordination of the arrangements for treatment with the arrangements for medical inspection ;

(f) The completeness of the arrangements made by the authority for the medical supervision of school children and the efficiency of the working of such arrangements as ascertained by the Board from reports made by their medical officer or otherwise."

19. In fixing the grant for children attending special schools, the following points will be considered :

Grants will be made under these Regulations only in respect of the medical treatment and care of children :

1. In residential (open-air) schools for children suffering from tuberculosis, certified by the Board under the Elementary Education (Defective and Epileptic Children) Act, 1899 ;

2. In day (open-air) schools, similarly certified, for children suffering from pulmonary tuberculosis ;

3. In day (open-air) schools, similarly certified, for children suffering from other forms of tuberculosis or from other ailments for which open-air treatment is specially suitable.

2. SCOTLAND

For the year ending March 31, 1913, the grant made to the Scotch Education Department was £7,500.

20. The conditions under which distribution of the grant for Scotland will be made have not yet been published. For the present year ending February 28 the following school boards received grants of £100 and over :

Edinburgh	Govan	Hamilton
Glasgow	Paisley	Kirkcaldy
Dundee	Leith	Perth
Aberdeen	Greenock	Inverness
Rutherglen	Peterhead	Cambuslang

The following received sums varying from £50 to £70 :

Kilmarnock	Old Kilpatrick	Stirling
Ayr	Cambusnethan	Beath
Cathcart	Shettleston	Renfrew
Fraserburgh		

For the present, the Scotch board schools are solely dependent upon the special grant for the carrying out of their schemes of treatment ; except, of course, in so far as treatment is involved in the special schools—

defectives, open-air, etc. But a Bill has been introduced by the Secretary for Scotland to enable school boards to apply the school fund to the medical treatment of necessitous children. The principal section of this Bill, which has passed the Scottish Grand Committee and has been reported to the House, is as follows :

Subject to the conditions and provisions contained in section 6 of the Education (Scotland) Act, 1908, a school board shall have, and shall be deemed since the commencement of the said Act to have had, the same powers and duties with reference to the provision of medical treatment for a child attending school within their district as they have with reference to the provision of sufficient and proper food or clothing or necessary personal attention under and in virtue of the said section.

3. IRELAND

21. The position of school clinics in Ireland is described as follows by the Secretary to the Commissioners of National Education :

In regard to national schools under the jurisdiction of the Commissioners, provision has been made by the Treasury in the votes for the current financial year for a grant to cover a contribution towards the establishment of dental clinics in important centres for the examination and treatment of children attending those schools. The Commissioners have not yet established any dental clinics, but they are at present taking the necessary steps with the object of doing so.

While it is understood that local provision is made for the dental treatment of children in some national schools, the Commissioners have official statistics in one case only—namely, in that of the Lough Cutra National School, Co. Galway, of which the Right Hon. Lord Gough is the manager.

CHAPTER III

AVAILABLE MEANS OF TREATMENT

22. At this point we may indicate the means of treatment normally available, and inquire as to how far those means are capable of meeting the demands created by medical inspection.

The means available are the following :

- A. Private practitioners.
- B. Charitable hospitals and dispensaries.
- C. Children's clubs.
- D. National Health Insurance.
- E. Treatment under Poor Law.

A. PRIVATE PRACTITIONERS

Many of the diseases from which school children suffer are more or less chronic in character, and require prolonged attention. Nothing more is needed to explain the frequent failure of parents to obtain for their children the necessary treatment from the private practitioner. Thus a "running ear" may take many weeks or, it may be, months to cure, and the time taken to effect a cure will depend upon the regularity and efficiency of the treatment. Obviously, the family doctor cannot always undertake the systematic treatment of such a case. He has often to be satisfied simply with prescribing what to do and directing the parent how to do it. But, simple as the treatment may often be, there are few parents that have either the time or the skill to do it efficiently.

What applies to the treatment of "running ears" applies with equal force to a host of other ailments—*e.g.*, to sub-acute and chronic inflammation of the eyelids and eyes (blepharitis, conjunctivitis, corneal inflammation and ulcerations), to many forms of skin disease (ringworm, favus, scabies), to affections of

the nose and throat, to septic sores and to the after-treatment of minor operations, especially those of a tuberculous nature. Many of the last are not followed through to complete recovery, and the result is that, not infrequently, children are found attending school with wounds still discharging, and receiving only such attention as a parent can give.

Further, there are conditions requiring treatment that do not normally fall within the scope of the general practitioner's work—*e.g.*, some diseases of the nose and throat, decayed teeth, etc.

It is clear, therefore, that, although the family doctor may be able in his general practice to deal with a fair number of the cases of the more acute diseases, he must leave untouched chronic cases of many varieties, partly for want of time, partly because parents never think of bringing the cases to him.

The question of cost is, doubtless, also a factor in the failure to employ a family doctor; but the National Health Insurance Act has opened up new possibilities here, and will certainly increase the occasions for bringing child and doctor together. But there will still remain a large margin for the work of the school clinic.

B. CHARITABLE HOSPITALS AND DISPENSARIES

23. In a discussion of the place charitable institutions should have in schemes of treatment several points call for attention.

I. THE ATTITUDE OF THE HOSPITALS

There appears to be a general impression that hospitals are unwilling to undertake the treatment of school children. How far this is the case may be gauged by reference to the experiences of different education authorities. Before the Board of Education approve of the establishment of a school clinic, it requires to be satisfied that an endeavour has been made to take advantage of the benefits of existing institutions. In every case, therefore, where charitable institutions exist, it is incumbent upon the local authority contemplating a treatment scheme to ascer-

tain in the first instance the resources of those institutions.

Sir George Newman, the Chief Medical Officer of the Board of Education, in his Annual Report for 1910 writes :

In many hospitals the governors and the medical staff have willingly come forward to undertake the new work, and have thereby rendered great service to the children. In other cases the hospitals have not seen their way to do this, and in some cases have even closed their doors to school children, with the inevitable result that the authorities have had to consider the establishment of new institutions for the specific purpose of dealing with school children.

The situation in a number of areas is illustrated by the following extract from the report of Dr. T. H. Jones, School Medical Officer for Surrey :

To be really useful treatment must be provided within reasonable reach of the homes of the people needing it. Hitherto the tendency has been to seek treatment for all defects in hospital. It is a sign of the times that the honorary medical staff of the Surrey County Hospital, Guildford, has lately passed a resolution expressing the opinion that the use of the hospital for the treatment of school children found on medical inspection to be defective is detrimental to the interests of the institution and of the whole medical profession, and suggesting that the hospital committee inform the education authority that children attending elementary schools cannot be attended in the ordinary way at the hospital. The opinion is, of course, open to argument ; the fact remains that the medical staff of the hospital has taken up this attitude, and is not alone in doing so. The London hospitals were formerly much resorted to by parents of Surrey school children ; it is now growing difficult to obtain treatment in many of them for country children suffering from defects of any kind, owing to the arrangements made by the London County Council with the hospitals for payment for treatment of London school children.

According to a recent issue of "The Medical Officer" the facilities for treating school children that were available previously at the County Hospital, Guildford, were withdrawn at the end of 1911, and the local authority has found it necessary to adopt some other means of securing treatment.

Dr. Duncan Forbes, Medical Officer, Brighton, in his Report for 1910, commenting upon efforts to arrange with the local hospitals, writes :

The boards of these hospitals have recently been approached by the Education Committee in order that arrangements might be made for the treatment of defective school children.

In his Report for 1911 he records the result :

. . . The hospitals, with one exception, agreed to continue treatment until December 31, 1911. It was stated that after that date the hospitals, with one exception, except in special cases, will decline to treat school children attending the primary schools of the Brighton and Hove education authorities, and found on medical inspection by the medical officers of the said authorities to be suffering from otorrhœa, enlarged tonsils, adenoids, errors of refraction, skin diseases or defective teeth.

Dr. G. C. Barnes, School Medical Officer, Southport, in his Report for 1911 writes :

The local infirmary provides gratuitous treatment for necessitous cases. In this regard a resolution of the British Medical Association may be quoted : "That the Association should oppose the reference of school children, found upon medical inspection to be defective, to public medical charities for treatment, whether or not accompanied by payments or subsidies."

The refusal of hospitals to undertake the necessary treatment is no doubt largely due to the attitude of the honorary medical staff. The medical profession, generally, regard it as unfair that the burden of such treatment should fall upon those who, according to established precedent, give gratuitous service to hospitals.

Sir George Newman, in commenting on this aspect of the problem, writes :

. . . The added burden of work arising from the more complete discovery of cases needing the hospital's service is too great for the limited hospital accommodation at present existing, and particularly for an honorary staff. Under these exceptional circumstances the Board stated from the outset that they would be prepared to sanction, under the Act, the payment of appropriate remuneration by local education authorities to the medical men actually carrying out the work of treatment arising out of the establishment of medical inspection. It seemed to the Board the proper course, in pursuance of the suggestion of the Act of 1907, thus to encourage the use of existing voluntary hospitals at first, adapting their conditions to the necessities of the case, rather than to encourage the establishment of new institutions, possibly redundant and in many cases overlapping and competing. The Board were not in a position, under the Act, as many persons seem to have supposed, either to require local education authorities to carry out treatment of defective children in hospitals or otherwise, or to insist that adequate payment should be made to the medical men carrying out such treatment. Indeed, in many instances, medical men themselves have volunteered their free services. But whenever the Board have been requested by the authority they have sanctioned adequate remuneration to all medical men engaged in the treatment of school children.

It appears, therefore, to be open to local authorities to enter into arrangements with local institutions, and to pay for the work undertaken. According to the latest Report of the Chief Medical Officer of the Board of Education—

Contributions to hospitals and infirmaries towards the treatment of school children were sanctioned during the year ending on July 31, 1912, for thirty-one authorities, some of which subsidised a number of hospitals within their educational area. Upon this figure two remarks must be made. First, contribution to a hospital does not indicate that the local education authority is confining its scheme of treatment to hospital provision. In most cases hospital treatment is but a part of the whole scheme of amelioration carried out by the authority. This is particularly true of the London County area. Secondly, it must not be supposed that this is the number of education authorities who are using hospitals for the treatment of school children. A large number of other authorities are availing themselves of the hospital provision which exists in their own or contiguous areas, and in this way it is no exaggeration to say that tens of thousands of children are receiving treatment.

Dr. P. H. Stirk, in his Report for 1911, to the City and County of the City of Exeter, writes :

Many authorities are now considering the best means of obtaining treatment for their school children. Some have decided to establish so-called school clinics, and some have made arrangements with private practitioners, eye specialists and others ; but none of these authorities have been able to get 80 to 85 per cent. of their defective children satisfactorily treated by the efforts of the parents alone as we have ; otherwise I do not think they would entertain the establishment of a school clinic, or the question of providing other means of treatment.

. . . I doubt if we should obtain much better results for the treatment of the general cases through the aid of a school clinic, or, if so, the increase would be so slight as to fail to justify the expense entailed, as about 10 per cent. of the children either leave school or the district before treatment has been obtained, and we could not compel parents to accept treatment at a clinic if they desired to go elsewhere ; whilst by offering treatment to all children, irrespective of the position of their parents, we should risk losing the sympathy of the medical profession, which has up to now been universally extended to this new work, and without which I am convinced that the best results cannot be attained.

. . . There is no doubt that for a city of its size Exeter is unusually well provided with charitable institutions dealing with the various ailments of those who are unable to pay for treatment. I question whether there is another city of its size in the United Kingdom possessing so large and so well equipped a general hospital in its midst. There are also the West of England Eye Infirmary, the Exeter Dispensary and the Dental Hospital. All these agencies have played a great

part in the treatment of our elementary school children, and I cannot speak too highly of the work they have done, and of the gratuitous services rendered by their respective honorary staffs. But for their work I should be able to record but a small percentage of remedied defects, over 50 per cent. of the defective children having received attention at these institutions ; and without their aid the establishment of a clinic or some other means of treatment would be a necessity, if anything approaching the full benefit was to be obtained from medical inspection.

Dr. Stirk states that the figures quoted do not include dental disease, and that the hospital does not now provide for the treatment of ringworm. It will be noted, however, that Exeter is exceptional in its facilities for hospital treatment.

2. THE PLACE OF THE HOSPITAL IN A TREATMENT SCHEME

24. Exceptionally, hospitals may provide all the necessary treatment. Normally, however, they may be considered as providing appropriate treatment for certain diseases only. In most of the large cities hospitals have not been found to provide for the efficient and economical treatment of some of the more chronic diseases.

Dr. Ralph Williams, Chief Medical Officer, Sheffield, in his Report for 1910, commenting on the hospital arrangements for that city, writes :

The percentage of children treated still remains unsatisfactory, and is likely to remain so until there is a closer union between inspection and treatment. This has been particularly demonstrated in reference to ringworm.

I am strongly of opinion that the treatment of ringworm cases should be adopted by the authority.

What has been said about ringworm applies to a very great extent in certain other diseases, which, owing to their great frequency among school children, have been called "school diseases." I refer to certain skin conditions, such as impetigo (sore head and sore face), scabies (itch), to certain eye conditions (defective vision, sore eyes and sore lids), to discharging ears and to carious teeth. (Treatment with reference to teeth has already engaged the attention of the Committee, and at the time of writing a school dentist is at work.)

According to the Sheffield Report for 1911, the education authority has now made provision for the treatment of defective vision and discharging ears.

3. NATURE OF DISEASES REQUIRING TREATMENT

25. At this point it may be well to review, in some detail, the nature of the diseases for which treatment is required; and to consider, in the light of experience, how far hospitals may be expected to provide for the efficient and economical treatment of those diseases.

For this purpose hospitals may be classified as follows:

- (a) Ear, nose and throat hospitals.
- (b) Eye hospitals.
- (c) Dental hospitals.
- (d) Skin hospitals.
- (e) Orthopædic hospitals.
- (f) General hospitals and hospitals for children.

(a) *Ear, Nose and Throat Hospitals*

Among the conditions commonly provided for at an ear, nose and throat hospital are deafness, middle-ear disease (including discharging ears), enlarged tonsils and adenoids. These conditions are widely prevalent among school children. Deafness, in most cases, is due either to middle-ear disease or to adenoids. Ear, nose and throat diseases, therefore, resolve themselves, for the most part, into two groups:

1. Middle-ear disease (including discharging ears).
2. Tonsils and adenoids.

1. Middle-ear disease is widely prevalent. It commonly takes the form of "discharging ears." Owing to the deep-seated nature of the affection, and the inaccessibility of the inflamed part, the disease readily becomes chronic. The tendency to chronicity is lessened when efficient treatment is undertaken early. Such treatment must be thorough and painstaking; and, in most cases, has to be carried out daily or even twice daily.

Experience has shown that parents have neither the time nor skill for such treatment. It is scarcely to be expected that the medical staff of a hospital should undertake the daily thorough cleansing of large numbers of discharging ears, nor is the ordinary nursing staff of such a hospital likely to be large enough to permit of nurses being set apart for this work.

In general it may be said that, where the numbers are large, the experience of education authorities is, that the hospitals do not provide for the efficient and economical treatment of discharging ears. In consequence, we find that, in most cases where a school clinic has been opened, it undertakes the treatment of discharging ears.

2. With tonsils and adenoids the case is different. There may be difference of opinion as to the absolute numbers suffering from enlargement of these tissues, and still greater difference of opinion as to the degree of growth that requires operation. But it is sufficient to note that there are great numbers of children suffering from genuine enlargement of tonsils and from adenoids (or from both), and that radical treatment by surgical operation is very often necessary or desirable.

Whether the numbers are sufficiently large to justify the establishment of special centres for those conditions alone is another matter. It has apparently been found in some centres that hospitals are unable to cope with the numbers requiring operation, and special centres have been opened, or the work has been incorporated in the general work of the school clinic.

It may perhaps have been necessary, owing to local circumstances, for the education authorities to make special provision for this work; but it cannot be said that the need for such special provision for operative work is at all general. Moreover, it is work that is not free from risk, and operative work of this kind demands the resources and safeguards of a well-equipped hospital.¹ In any case where it is necessary to provide for such work co-operation with the hospital should first be considered.

Dr. Stirr, School Medical Officer, Exeter, makes the following interesting comment on the hospital treatment of enlarged tonsils and adenoids:

It has been said by the advocates of school clinics that hospital treatment for enlarged tonsils and adenoids is unsatisfactory, for this reason—that the operation itself is but the commencement of treatment, and should be followed by systematic breathing exercises, which can be carried on in a clinic, but forms no part of hospital treat-

¹ See "The Lancet," May 17, 1913, p. 1403—"The Dangers of the Operation for Adenoids." The paragraph summarises some recent researches.

ment. There is some justification for this statement. I have myself seen cases in which the trouble has recurred entirely through the failure of this part of the treatment, but this drawback can be removed by co-operation between the hospital and school authorities. All our schools have teachers well qualified for instructing the children in breathing exercises, and a notification from the hospital that the operation had been performed, and that breathing exercises were required, would be followed by extra attention to the breathing exercises of those children specially requiring them. Suggestions to this end were made in my Annual Report of last year, and my remarks on the subject were quoted with approval by Sir George Newman, the Chief Medical Officer to the Board of Education, in his Annual Report. I would again suggest to the Committee the desirability of approaching the hospital to secure this necessary co-operation.

(b) Eye Hospitals

The defects and diseases of the eye that commonly require attention are defective vision (involving correction by glasses), squint, blepharitis (simple, ulcerative), conjunctivitis (simple, acute, phlyctenular, chronic), corneal disease (ulcerative, phlyctenular, interstitial).

The correction of defective vision and squint is among the important branches of work of an eye hospital. In most cases there should be no serious difficulty in such a hospital providing efficient and economical treatment for those conditions. But it is only in cities of considerable size that such special institutions are available. In smaller towns, and in country places generally, no such eye institutions exist.

The number of children with defective vision urgently requiring treatment is about 8 to 10 per cent. of the school population. The result is that, even in the larger cities where eye hospitals exist, the numbers requiring treatment may far exceed the resources of the hospital. There can be no question as to the efficiency of the treatment provided by the special institution; the question is simply whether the hospital can undertake the work.

Experience would appear to show that, in the larger cities, it is more convenient and perhaps equally economical for the education authority to undertake the work themselves. Dr. Williams, of Sheffield (in Sheffield, until lately, treatment was undertaken by voluntary institutions) points out that the correction of defective vision is now undertaken by the School Medical Department.

In regard to the inflammatory diseases of the eye and its appendages, practically the same remarks apply as to discharging ears. Skilled daily treatment is necessary in most cases. In some of the more acute inflammations, such skilled treatment may prevent serious and permanent diminution of sight. The time and care necessary for the delicate and skilled handling of these cases is not usually available in hospitals; and the majority of school clinics make provision for their treatment.

(c) Dental Hospitals

There are few towns in which special dental hospitals exist. Most general hospitals have a dental department, which is usually organised on a relatively small scale, and is incapable of expansion.

So overwhelming are the numbers of children requiring treatment that the question as to whether or not the hospital, dental or general, can undertake any part of the dental treatment scarcely merits consideration.

The course of action for local authorities was here uncomplicated by already existing agencies. Hence we find that "clinics" for dental treatment are more numerous than any other form of clinic.

(d) Skin Hospitals

For our present purpose, diseases of the skin may be classified as follows: Verminousness, itch, ringworm, favus, impetigo and eczema.

1. *Verminousness* is a condition that should be dealt with by the parents, the nurse or the public health authority.

2. *Itch*.—This is a disease for which treatment may be recommended at hospital; but such recommendation is not likely to lead to cure in every case. It is not quite within the scope of the hospital to undertake the efficient treatment of this disease.

3. *Ringworm* and *favus* affecting the scalp are troublesome diseases. Treatment by drugs is most disappointing, the cases lasting frequently for months or years. The only rapidly efficient method of treat-

ment is by X-rays. If the hospital possesses an X-ray installation, it can give efficient treatment. The policy of education authorities has, therefore, been to avail themselves of the use of any X-ray apparatus within their district. The latest Report of the Chief Medical Officer shows that eight authorities have made arrangements with specialists for the treatment of cases by X-rays, twelve have made arrangements with hospitals (seven in London), and nine authorities possess their own installation.

Dr. Williams, of Sheffield, in his Report for 1910, makes the following comments on the treatment of ringworm:

The facilities available for the treatment of ringworm are distinctly unsatisfactory. A very large number of children are now excluded from school owing to the fact that five medical officers and five nurses are at work, and as the number of nurses increases the number of children turned out of school for ringworm will also, no doubt, increase for a time.

The children, at present, are sent by the nurses to the office in Hawley Street, on Friday or Saturday mornings, and they are then recommended to obtain treatment either from their family doctor or through the hospitals. Many parents gladly accept the opportunity of keeping the child at home owing to the fact that the child has ringworm, and make no efforts to obtain treatment. Some go to general practitioners and obtain ointment; others go to the hospitals, and also obtain treatment with ointment or with X-rays; but in many of these cases no regular continuous treatment takes place, this being essential for the cure of such a chronic disease.

4. *Impetigo, eczema, etc.*—The remarks already made in regard to minor sub-acute and chronic diseases are to a great extent true of the common skin diseases. Probably, the hospital staff will prescribe treatment; but the application of the method will be left to the unskilled parent or guardian, with disappointing results. Skilled dressing of skin diseases constitutes an essential part of their treatment. Such work has not, normally, been considered the duty of the hospital staff, and it is seldom that they have the time to do it.

(e) *Orthopædic Hospitals*

Orthopædic hospitals undertake the treatment of deformed children. Such a hospital is to be found only in large cities. Orthopædic work is frequently undertaken by general hospitals.

The conditions requiring treatment are spinal deformities (lateral curvature, round shoulders), knock-knee, club foot, flat foot, infantile paralysis, etc.

Pronounced cases of deformity generally find their way to hospital without the intervention of the school medical officer. The cases present no difficulty in point of number.

But there are numerous cases of minor deformities for which the hospital does not provide, and for which no treatment has been available up to the present. Interest is now being taken in such cases at several centres. Particular reference to this branch of treatment will be found under Orthopædic Department on p. 97.

(f) General Hospitals and Hospitals for Children

General hospitals and hospitals for children usually combine the work of the several special hospitals with general medical and surgical departments. The special departments, when such exist, are usually organised on a relatively small scale, sufficient to cope with such special cases as are incidental to the work of a general institution. It is upon these special departments that the extra demands have been made for the treatment of school children; hence the difficulties considered in connection with the several special hospitals will tend to concentrate themselves in the general hospital.

26. When we survey the position of the hospitals in relation to treatment generally, a suggestive light is thrown upon the problem by the increasing number of education authorities that are establishing school clinics for the treatment of certain diseases. This may be due, in part, to the failure or refusal of hospitals to undertake the work, to inadequate or uneconomical treatment, or to difficulties of organisation and administration.

In smaller towns there would not appear to be great difficulty as regards organisation. At the same time, the number of children that receive treatment in small centres depending solely on voluntary agencies is frequently disappointingly small.

Nevertheless, hospitals have contributed handsomely

to the treatment of school children. They offer certain forms of treatment that are better supplied by the hospital than by the other organisations available; and in comprehensive schemes of treatment hospitals will continue to hold an important place.

Certain districts—*e.g.*, Aberdeen, Exeter, Isle of Ely, etc.,—find that with the exception of dental treatment, the hospitals are able to meet their needs. In other districts the hospitals may be able to provide for surgical treatment and the correction of visual defects, while the minor ailments are dealt with by the education authority. In yet other districts no hospitals exist, and the education authority may find it necessary to open a school clinic. Abertillery is an example. Dr. A. E. Remmett Weaver, Medical Officer, Abertillery Urban District Council, in his Annual Report for 1910 says that in his district with a population of over 35,000—

There is no hospital, dispensary or nursing association; the nearest hospital is at Newport, $17\frac{1}{4}$ miles away; there is difficulty in obtaining tickets for any special hospitals at a distance; and the Poor Law Medical Service does not lend itself to the provision of the necessary medical treatment.

In such circumstances, if the education authority desire to institute a scheme of treatment, it appears that the most natural course to follow is to open a school clinic.

4. ADVANTAGES OF HOSPITAL TREATMENT

27. (a) One of the main advantages of hospital treatment is that it utilises an agency already in existence. The hospital is, as a rule, a charitable institution, providing for the skilled medical and surgical treatment of the sick poor. To prevent undue multiplication of agencies for such treatment should prove both efficient and economical.

(b) Again, the hospital already possesses both the accommodation and equipment necessary for treatment, and considerable initial expense might be avoided if the hospital scheme were adapted to the needs of the locality.

(c) The staff of a hospital is usually composed of

specialists. This should offer considerable advantages, more especially since many of the diseases to be treated require "specialist" knowledge.

(d) For special diseases requiring surgical operation the hospital is normally in a better position to undertake such work than a school clinic.

5. DISADVANTAGES OF HOSPITAL TREATMENT

28. There are certain disadvantages, more or less general, attaching to the use of hospitals on an extended scale. Apart from the inability to provide appropriate treatment for some of the more chronic diseases of the ears, eyes and skin, the disadvantages are mainly those of organisation and administration.

(a) *Inappropriate Treatment of Certain Diseases*

We have seen that the hospital treatment of discharging ears, of inflammation of the eyes and eyelids, and of some skin diseases is not always the most appropriate. The fault is not due to the hospital, which may not be organised for this work. Efficient treatment of these diseases would mean a re-organisation of its methods. This could perhaps be done where hospital accommodation is used by the local authority and a special staff employed.

(b) *Infrequency of Treatment*

Dr. Williams, of Sheffield, in his Report for 1910 says :

Daily treatment is often required, and this is quite impossible for the hospitals to provide, even if it were possible for the mothers to give up the time in order to accompany the children.

(c) *Difficulty in Securing Attendance*

Where a scheme of treatment is not directly under the management of the school medical officer, leakage between inspection and treatment occurs. Although a hospital scheme may be, normally, under the control and supervision of the school medical officer, the control cannot be absolute, or the supervision always

effective. Generally, it may be said that, where the scheme of treatment is predominately "hospital," leakage will be greater than where the scheme is more directly under the control of the school medical officer.

(d) Difficulty in Securing Regularity of Attendance

To secure regularity of attendance an effective system of "following-up" is necessary. Hospitals are not accustomed to observe closely the attendances of their patients. Special arrangements might be made, however, for the medical officer or school nurse to receive a daily list of delinquents; but any such arrangement would require very careful management. Irregularity of attendance is rather encouraged by the prolonged waiting common at hospital.

(e) Prolonged Waiting at Hospital

Numerous complaints have been made about prolonged waiting. The following extract from the Report of the Woolwich Invalid Care Committee illustrates this :

To visit an hospital means, for an ailing child in the borough of Woolwich, a tedious and fatiguing journey for himself and his mother, or some other adult, of anything between one and two hours ; usually a long period of waiting ; very frequently the discovery of some mistake or difficulty, so that no treatment is given ; then the journey back again. If frequent visits are necessary, the expense becomes considerable. In all cases, whatever benefit is gained in the end by hospital treatment, is severely discounted by the conditions under which the treatment is obtained.

(f) Inaccessibility of Hospitals

This is a serious disadvantage in large cities and in country districts. It frequently entails considerable expense to the parents.

Dr. J. Middleton Martin, School Medical Officer, Gloucestershire, in his Annual Report for 1911 writes :

. . . The reason defects of the special sense organs—possibly the more important—have not been remedied in greater measure is deficiency in opportunity for securing proper treatment. As mentioned in previous reports the work is undertaken generally only in

the larger centres, such as Bristol, Cheltenham, Gloucester and Stroud, and to reach these places may entail not only the expense of the fares, but also loss of time and wages for one or more days.

(g) Disadvantages of the " Note " System

Dr. George A. Auden, Chief Medical Officer, Birmingham, says :

Although difficulties would undoubtedly be met with in the abolition of the note system which is at present in vogue, there is little to be said in its favour. It is often exceedingly difficult to obtain the number of notes required for a deserving case, and the search often entails much tramping about and delay, and frequently leads to the abandonment of the attempt to secure treatment. It moreover directly encourages a form of begging with a corresponding loss of self-respect.

(h) Ineffective Co-ordination with the Scheme of Inspection

A hospital scheme will always remain more or less detached from the school medical service. It is impossible to co-ordinate thoroughly the work of a voluntary institution, covering a wide field of general work, with an official organisation devoting itself to a defined sphere of which hospital treatment forms but a small part. Such ineffective co-ordination will mean loss to suffering children. The same care or supervision cannot be exercised during convalescent stages ; there will be less opportunity to modify the home or the educational environment ; there will be less chance of the child being kept under close supervision and of being subjected to early treatment or threatening recurrence of disease. In short, hospital treatment may cause a breach of continuity at an important point in the chain of agencies that educational hygiene is now forging around the child for his protection throughout school life.

29. At this stage we cannot do better than quote from Sir George Newman's Report for 1910. He states with particular reference to the hospital treatment in London :

Reviewing, then, the whole question of hospital treatment of school children in London, especially in the light of an additional year's experience of the working of the County Council's scheme, and as the result of considerable inquiry and inspection, there can, I think, be

no doubt that the hospitals fill, and must continue to fill, an important place in any comprehensive scheme for the medical and surgical treatment of school children. But that place should be in the main a subsidiary one. No permanent scheme should be based primarily on the utilisation of general hospitals (voluntary or other). Schemes for treatment should arise, as indicated last year, and as shown more particularly in the present report, necessarily and inevitably out of the arrangements for medical inspection. In view of the wide conception of treatment which it is necessary to take, the general control of all arrangements for treatment should remain in the hands of the local education authority, and in so far as they are not themselves directly responsible for the carrying out of such treatment it will be necessary for them to make arrangements which will ensure that the advantages of conducting the work directly at a school clinic will be as far as possible reproduced. I am satisfied, therefore, that whether a centre termed a "school clinic" be or be not used in any scheme of treatment the method and spirit of the school clinic should be adopted.

The general principles and judgments here laid down cannot but impress local authorities throughout the country as well grounded in concrete experience.

C. CHILDREN'S CLUBS

30. Where children's clubs are already in operation, they may be found to give facilities for some of the treatment required. They cannot be expected, however, to give facilities for the adequate treatment of the more chronic ailments, for the removal of adenoids and enlarged tonsils, or for dental extractions and fillings.

Efforts have been made in a number of places to establish children's provident clubs. But these efforts appear to become more or less intimately blended with schemes of treatment under the education authority, and the contributions go towards the general expenses of maintenance of those schemes. It will be unnecessary, therefore, to enter more fully into the matter at the present stage. Particulars of contributory schemes will be found in the chapter dealing with "Payments from Parents" (see p. 137).

D. NATIONAL HEALTH INSURANCE

31. The National Health Insurance Act will, doubtless, affect medical institutions in many ways that cannot as yet be foreseen. But the provisions for the

administration of sanatorium benefit and the grants associated with it directly affect the treatment of school children. Apart from the fact that sanatorium benefit may be extended to dependents, the comprehensive scheme now being organised by the local authorities will include, in most cases, if not in all, some provision for children. In the Interim Report of the Departmental Committee on Tuberculosis (the Astor Committee) the following occurs :

Children of school age in attendance at elementary schools are under the supervision of the local education authority. They are subject to a periodical medical examination as part of the routine of their school life. It is obvious, therefore, that local education authorities have the opportunity of playing a very important and, indeed, essential part in the detection, prevention and treatment of tuberculosis. In order to link up the local education authority with the scheme already indicated, it is desirable that the school medical officer should be closely in touch with the tuberculosis dispensary. The dispensary should provide, as far as possible, the same services for children as for adults.

In many places the school clinic will be a special dispensary for school children ; in others, it may be more convenient to refer cases to a general tuberculosis dispensary ; but in all places, whether a dispensary exists or not, the new schemes will make it easier to deal with tuberculous children of every variety.

E. TREATMENT UNDER POOR LAW

32. The powers possessed by boards of guardians for the treatment of disease are fully set forth by the Local Government Board in their circular issued in March 1911 :

Relief from public funds may only be given within the limits prescribed by the law, and the law, as it at present stands, limits such relief to cases of destitution. The guardians are entrusted with the task of deciding upon the evidence before them whether a particular person whose case is under consideration is or is not destitute ; and in determining this question they have to remember that a person may be destitute in respect of the want of some particular necessity of life without being destitute in all respects ; as, for instance, a person who is not destitute in the sense that he is entirely devoid of the means of subsistence, may yet be destitute in that he is unable to provide for himself the particular form of medical attendance or treatment of which he is in urgent need.

Throughout the country occasional attempts have been made to get guardians to undertake the systematic treatment of necessitous school children. The response, so far, has been rather discouraging. The numbers that have received treatment under the Poor Law are very small indeed. This may be due partly to the refusal of parents to avail themselves of Poor Law treatment. The receipt of medical treatment through the Poor Law is still regarded as carrying with it the stigma of pauperism. In many cases the guardians have undertaken only a limited amount of treatment; in other cases they have refused to undertake any treatment of necessitous school children.

Dr. Fremantle, Medical Officer of Health for Hertfordshire, in his Report for 1911 says, "Pressure is being made on the Guardians to get them to undertake more work than they have hitherto done."

In a recent issue of "The Medical Officer" the following account is given of Dr. Lyster's efforts in Hampshire:

Dr. R. A. Lyster, C.M.O., recently addressed letters to the boards of guardians in the county of Hampshire reminding them of these powers, and requesting them to consider the advisability of making arrangements for the children to receive medical treatment. He has since reported to his education committee that several of the boards of guardians have responded to his suggestions. The Alton Board decided to instruct their relieving officers to give orders for medical attendance in such cases, and have expressed their willingness to make special payments for operations or specialised attention. The Basingstoke Board have arranged with the district medical officers for the necessary operations on tonsils and adenoids at a fee of 5s. for parents earning an average wage of less than 30s. per week. Parents unable to pay the 5s. fee are invited to apply personally to the relieving officer for a medical order. Details of this scheme have been sent by the clerk to the guardians to the correspondent of every school in the district. Arrangements have also been made by the Whitchurch Board of Guardians for their medical officers to undertake the treatment of elementary school children whose parents are unable to pay for the same, upon the following terms—viz., enlarged tonsils, 10s. 6d.; suppurating ears, 10s. 6d.; adenoids (with the administration of an anæsthetic when necessary), £1. 1s. In the Overton and St. Marybourne districts the fee for the removal of adenoids is £2. 2s. In addition to the above, several boards of guardians have given their relieving officer instructions to pay for spectacles prescribed for children whose parents cannot afford the necessary amount, and large numbers of spectacles have been supplied in that way.

There are some boards in the country that have taken no action in the matter, although it has been decided by the Local Government

Board that it is the duty of guardians to provide treatment for all cases where the parents are unable to provide it. In practice very few of the parents are able to provide specialised attention of any kind, and Dr. Lyster urges that steps should be taken to persuade all guardians, in the interests of the general public health of their district, to give effect to the decision of the Local Government Board by providing the necessary treatment. The only alternative is some scheme for providing treatment at the expense of the county council. The after-care committees now established in connection with most of the schools in Hampshire are doing excellent work, but they are handicapped unfairly if the local guardians and also the county education authority both decline to provide any treatment. Dr. Lyster believes that if all the guardians in the county would follow the instructions of the Local Government Board and provide treatment, there would be little necessity for the county education authority to undertake general treatment.

CHAPTER IV

SCHOOL CLINICS—THEIR ADVANTAGES AND DISADVANTAGES

33. IN reviewing the returns of those who have kindly supplied the League with information regarding their school clinics, one is struck by the remarkable unanimity of opinion on the advantages of the school clinic as a treatment centre. Indeed, out of over eighty replies to the queries sent out only two disadvantages have been mentioned.

It would be difficult to attribute the advantages expressed to any one locality, for most localities seem to experience what may be termed the "obvious and general" advantages of the clinic system.

A. ADVANTAGES OF SCHOOL CLINICS

34. The advantages of the school clinic may be grouped under the following heads :

1. Facilities for treatment.
2. Simplicity of organisation and administration.
3. Social advantages.
4. Educative influences.
5. Further possible advantages.

I. FACILITIES FOR TREATMENT

(a) *The clinic provides appropriate methods of treatment not otherwise normally adequate to the demands.*

This applies more particularly to "running ears," chronic inflammation of the eyes, ringworm, favus, scabies and dental disease. We have already noted that hospital methods are not altogether appropriate for the treatment of those diseases.

(b) *The clinic provides treatment for cases that would otherwise never be treated.*

The majority of medical officers in charge of clinics are emphatic on this point. The explanation is due

to the clinic being under the control and direction of the school medical officer. It is a simple matter for him to note when any given case appears at the clinic for treatment. If the child does not appear, an attendance officer, nurse or voluntary worker may visit the home and persuade the parent to allow the child to attend the clinic. There are, thus, fewer opportunities for the child to escape treatment than if his parent simply received a formal note to send him to hospital.

(c) The clinic provides more continuous treatment and gives greater individual attention.

It is the exception to find children attending hospital daily as out-patients, unless in cases of accident or minor operation. On the other hand, the child may be in attendance at a clinic daily, and not infrequently twice daily, for the necessary treatment. Such increased facilities for treatment cannot fail to expedite a cure. One of the aims of the clinic is to obtain an early cure, so that the child may return to school at the earliest possible moment. The interest of the clinic is thus centred more in the child than in his disease.

(d) The clinic may provide for the dental treatment of all children.

Special arrangements are necessary for dental treatment of necessitous children. But the children of non-necessitous parents may also be offered treatment at a clinic, at reduced charges. If this is not done, it is unlikely that those children will receive any attention, the usual dentist's fees being prohibitive.

(e) The clinic provides the best means for re-inspection of treated cases.

For example, a child six years of age receives dental treatment for his first permanent teeth. He may leave the clinic with his teeth in good condition. But, in order that he may reap continuous benefit from the treatment, his teeth should be re-inspected at least annually; and, if necessary, further conservative work should be done to preserve them. Cases of defective vision also require periodical re-inspection, and not a few diseases may threaten to

recur unless careful supervision is exercised. In view of the importance of re-inspection and supervision in maintaining the health of children already treated, it is difficult to conceive of any agency more admirably suited to fulfil those functions than the school clinic.

2. SIMPLICITY OF ORGANISATION AND ADMINISTRATION

(a) The clinic facilitates treatment without delay, without long journeys, and without long waiting.

35. Where a clinic exists children pass naturally from inspection to treatment. Time is saved in obtaining treatment. Parents may not have to accompany the child, and attendances can be regulated to prevent undue waiting and waste of time.

Miss H. E. Grinling, Honorary Secretary to the Woolwich Invalid Children's Aid Committee, states that they have found their school clinic to afford these important advantages; and no doubt similar advantages are experienced by the majority of clinics.

(b) The clinic ensures a minimum of leakage between inspection and treatment.

(c) The clinic facilitates control and regularity of attendance.

Both these advantages will naturally depend upon the system of registration and the efficiency of the methods of "following up."

Dr. Lewis Williams, School Medical Officer, Bradford, has had extensive experience of these advantages in an efficiently conducted clinic. Practically no child can absent himself from the clinic on a single occasion without detection. If necessary, the cause of absence can be investigated and regular attendance re-established.

In connection with hospitals that are not so directly under the control of the school medical officer, leakage between inspection and treatment is frequently found to be excessive. Dr. Williams draws attention to another important advantage, namely,—

(d) Medical inspection without adequate treatment diminishes school attendance; with treatment, it actually increases attendance.

Bradford has had exceptional opportunities for testing the advantages of the school clinic, and the

increase of attendance is an advantage not mentioned by any other school medical officer. It will be interesting to observe whether this experience becomes at all general.

(e) *The clinic secures public control of treatment and the assistance of voluntary workers with full local knowledge.*

Miss Grinling, of the Woolwich Clinic, directs attention to this important advantage. Any arrangement whereby voluntary workers may be attached to the school clinic under public control makes for efficiency and economy; and it possesses further advantages in offering mutual benefits to the institution and those voluntary workers who may assist in house visitation and general supervision.

3. SOCIAL ADVANTAGES

(a) *Establishes a more vital connection on the part of the local authority with the whole movement of educational hygiene.*

36. When the education authorities have under their own control a centre for the treatment of school children, their interest in the treatment and prevention of disease will be stimulated. The school clinic cannot fail to increase general interest on the part of educational bodies in the health movement now making vigorous claims for recognition in the educational arena.

(b) *The clinic serves to build up intimate relations and personal knowledge among parents, teachers, doctors and children.*

The parent, the teacher and the doctor here meet on the one common point of interest—namely, the physical well-being of the child. This increase of intercourse in an entirely new rôle, of persons whose relations are usually determined by other factors, must have very beneficent effects.

(c) *The clinic makes possible the scientific study of the life history of the children and ultimately of the community.*

The school clinic offers advantages in this connection that do not so readily present themselves in simple

medical inspection. It is a line of inquiry that will tend to take more definite shape with increasing experience and with the extension in the usefulness of the school clinic.

(d) The clinic gives less trouble to the parent, while it presents the physical well-being of the child as of interest not only to the child and the parent, but also to the State.

Parents have been accustomed to think of the State as interested only in the mental equipment of their children. The school clinic, even more than medical inspection, will tend to emphasise the national importance of physical efficiency and should teach parents to regard it as of equal importance with mental efficiency.

(e) When a clinic is fully organised and in effective operation, parents will be encouraged to refrain from the indiscriminate use of charity and from the abuse of hospitals.

This is a point of some importance. We cannot hope to see rapid improvement in this direction. But lasting results are more likely to be attained through the agency of the school clinic than through any other organisation for treatment. The Local Education Authorities (Medical Treatment) Act, 1909, enables local education authorities to recover the whole or part of the cost of treatment from the parents. It is thus within the power of the school clinic to educate parents in the discharge of their responsibilities to their children.

4. EDUCATIVE INFLUENCES

The school clinic as part of the machinery of an educational authority may be made to serve an excellent purpose as an educational institution on matters of hygienic living.

37. One may say that, almost without any direct effort by individuals, the school clinic will exercise an educative influence upon the children who attend, and through them upon the parents. Its influence will be specially manifest in impressing—perhaps painfully impressing—the children with the need for taking

care of their teeth; and to educate the growing generation on the importance of dental hygiene is a great matter.

But it would be taking a narrow view of the educative influence of the school clinic to say that it is confined mainly to training in dental hygiene. There are many diseases more or less directly due to dirt and neglect. Before a satisfactory cure can be effected, these causes will require investigation and removal. This will not only affect the child personally, but also the home through systematic visitation by school nurses or other workers attached to the clinic.

The following extract from the third Annual Report of the Deptford School Clinic throws an interesting light upon this aspect of the clinic's work :

In founding the clinic it was your strong desire, as it was likewise that of those taking part in the medical and dental work, that the clinic should be a centre of education for both children and parents (perhaps equally so for the doctors and other officials). The attempt has been made, with what success others must judge, to interest the parents in the measures taken to improve the health of the children. It is not necessary to interest Deptford mothers and fathers in the health of their children ; the majority of parents are equally concerned about the health of their children, whatever their rank in life. In Deptford, just as in more favoured districts, there is a tiny minority of mothers and fathers who have lost this common attribute of parenthood ; this naturally makes so vivid an impression upon observers that they think and write about this tiny portion of wicked parents as if such beings were the rule. Our experience is that parents everywhere are concerned about the health of their children, but that they do not differentiate between the important and the irrelevant factors in the same way that medical men do. The poorer class of parents in Deptford do not trouble very much, for instance, about bad teeth or an ugly skin disease, but often they will be unduly distressed if a child has, for a single day, been off his food. It would require an essay to go into all the bearings of these facts thoroughly. We content ourselves with quoting a remark of Mr. Hilaire Belloc's about Marie Antoinette : "The contrast in external habits between the wealthy, the middle class and the poor—a contrast ultimately produced by differences in the opportunity and leisure which wealth affords—she thought to be fundamental."

Knowing the contrast not to be fundamental, it has been our main endeavour to induce parents to see their children's troubles somewhat from our own medical point of view ; to point out the handicap of eyes that see not, of ears that hear not, and of skins that are ugly to look upon, the source of distress by day and restless nights.

We invite these parents to perceive with their own minds the value of removing defects which to them seem relatively unimportant, while

recognising that it is the right, the duty, of the parent to be the final arbiter in all matters that affect his children alone.

We are all of us fallible human beings, and doubtless the practice has not been always equal to the endeavour. This education is long, and one must not be disappointed if the process seems not a little tedious and the task Sisyphean.

Slowly but surely, therefore, the influence of the school clinic will permeate to the home environment, and lead to a progressive improvement in the conditions of life. Moreover, with extension of function, there will be extension of influence on the child, on the parent, on the home, and, therefore, on the community as a whole.

5. FURTHER POSSIBLE ADVANTAGES

38. While the school clinic remains, strictly, a centre for treatment, its advantages are neither few nor unimportant. But when the school clinic extends its scope, when it assumes other functions in addition to that of treatment, there will be a corresponding extension of its influence. And such extension is but a matter of natural growth and development. No school clinic properly organised and under the control of the school medical officer will remain as a centre for treatment pure and simple. Other branches of work, naturally, and without special effort, will graft themselves on the more fundamental work of treatment. The clinic will become the administrative centre for the whole of the work of the school medical service. If this be so, it will readily be realised that, with the great possibilities of development that lie within the compass of educational hygiene, the possible future influence of the school clinic is well-nigh incalculable.

B. DISADVANTAGES OF SCHOOL CLINICS

39. It is somewhat remarkable that, out of the numerous returns on school clinics, not one indicated any serious disadvantage attached to the school clinic. The advantages are numerous; the disadvantages, practically none. Perhaps one of the most interesting features of the school clinic is, that the

more the experience gained of its working, the more prominently do its advantages appear.

The only disadvantages stated were :

I. CLINICS ARE APPLICABLE ONLY TO MORE OR LESS
POPULOUS DISTRICTS

This is true to a limited extent ; for the school clinic does not contribute materially to the solution of the treatment difficulties in country districts. Yet we find dental clinics becoming fairly numerous in rural areas, and they are likely to become more numerous in the near future.

2. CLINICS ARE APT TO LESSEN PARENTAL
RESPONSIBILITY

Dr. Rennet, School Medical Officer, Chester, says that the school clinic is "apt to remove parental responsibility." On the other hand, Dr. P. H. Stirk, School Medical Officer, Exeter, writes :

It is argued that school clinics tend to lessen the sense of parental responsibility, but in actual practice it has not turned out to be so. On the contrary, by drawing attention to unsuspected, but significant slight defects, parental responsibility has been increased rather than diminished.

40. Although the advantages of the school clinic appear to be many and the disadvantages few, it should be clearly understood that this fact does not, of itself, generate the necessity for instituting a school clinic in preference to other schemes of treatment that may already be in operation. We have studied the limitation of the hospital as a centre for treatment ; but it is well that in the first instance the facilities of the available hospitals should be fully tested before *ad hoc* schemes are instituted.

CHAPTER V

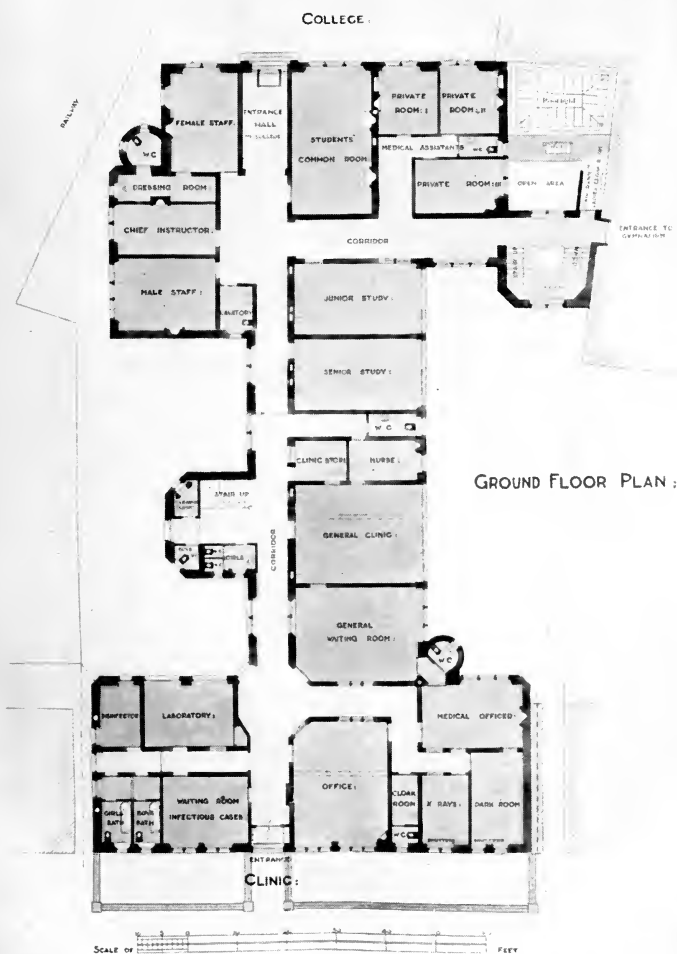
THE ORGANISATION, FUNCTIONS AND MANAGEMENT OF A SCHOOL CLINIC

A. ORGANISATION

41. THERE is one leading principle that should determine the method of procedure for the organisation of a school clinic or treatment scheme. That principle is—that the school clinic or scheme of treatment should be organised as one piece of machinery with the other branches of the school medical service. It will be possible to adhere strictly to this principle only in the case of clinics or treatment schemes maintained entirely out of public funds, and under the control and direction of the local education authority. In the case of clinics supported partly by voluntary contributions and partly by contributions from local education authorities, it may still, however, be possible to obtain an effective measure of control through the school medical officer. But schemes of treatment that are entirely “voluntary” are more difficult to co-ordinate with the school medical service. They may give the necessary facilities for treatment; but their imperfect incorporation with the vital machinery of the school medical service tends to render them less efficient.

As far as possible, then, the school medical service, whether concerned with inspection, treatment or prevention, should be built up into a synthetic whole. Every effort should be made to prevent undue dissociation from the parent scheme of any new agencies it may be found necessary to introduce. Efficiency and economy, both immediate and ultimate, will be more readily obtained by the operation of a single effective organisation than by a number of separate agencies with limited spheres of activity.

COLLEGE OF HYGIENE AND SCHOOL CLINICS DUNFERMLINE :



DUNFERMLINE COLLEGE OF HYGIENE AND SCHOOL CLINICS—GROUND FLOOR
PLAN (NEW BUILDINGS).



B. FUNCTIONS

42. A well-equipped school clinic is generally regarded as fulfilling two main functions—namely, “inspection” and “treatment.” A school clinic may, however, fulfil only one of these functions. Hence we are accustomed to speak of “inspection clinics” and “treatment clinics.”

I. THE INSPECTION CLINIC

An “inspection clinic” is a convenient centre at which the school medical officer conducts examinations of special cases not falling within the scope of “routine” school medical inspection. The following summary of the purposes of an inspection clinic is taken from the Report (1910) of the Chief Medical Officer of the Board of Education:

1. The further and fuller examination of children referred as a result of medical inspection in the school.

2. The examination of children referred in regard to fitness to attend school, or to undertake physical exercises, swimming, school journeys, etc.

3. The examination of candidates for admission to special schools—schools for the deaf, blind, mentally and physically defective, open-air schools, etc.

4. The supervision of children suffering from such conditions as uncleanliness and ringworm.

5. The periodical supervision of all cases of phthisis.

6. The inspection of children who have suffered from infectious and contagious diseases, and of “contacts” prior to their return to school.

It should be clearly understood that such examinations are, in all districts, a normal part of the work of systematic medical inspection. The work is already carried on by every school medical officer, whether at a special centre called an “inspection clinic,” at his own office, or in school. An “inspection clinic” is not, therefore, to be regarded as an institution providing for an entirely new branch of medical work. It does not aim at treatment. Its functions are those of diagnosis and supervision only.

In large centres it is, of course, much more convenient and economical to centralise such special work in an inspection clinic. Here the medical officer will have at his command the necessary facilities and equipment for accurate diagnosis. He will be in

possession of the necessary apparatus for microscopic examination in cases of ringworm; for bacteriological diagnosis in cases of infectious diseases; for the accurate estimation of visual defects; for careful investigation of diseases of the ear, nose and throat, and many other defects requiring the resources of a well-equipped consulting-room.

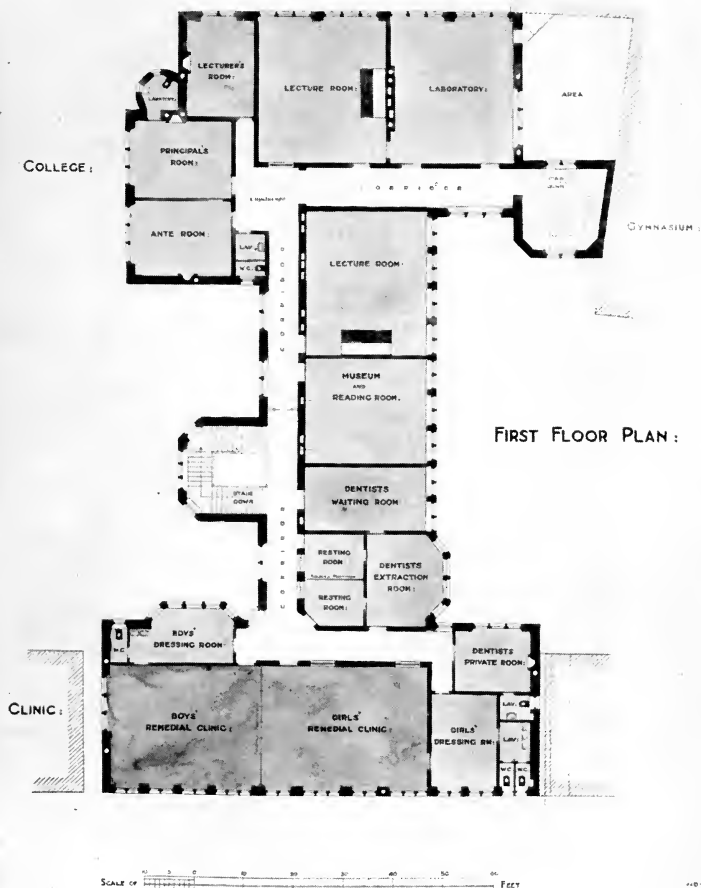
Further, the centralisation of this special work in an inspection clinic has additional advantages. Numerous cases not found on routine inspection will be dealt with at such a clinic. These cases will be referred by nurses, teachers, attendance officers, parents and others. The fact that the work is conducted at a special centre during stated hours becomes generally known. This facilitates the reference of cases more especially by teachers and parents. Where an inspection clinic exists, there is thus less delay in the inspection of special cases; still less is there the risk of their being overlooked altogether.

The inspection clinic thus becomes a sort of central "clearing station" at which special cases are examined and referred according to their conditions. Some will be excluded from school; some will be referred to the school clinic for treatment; some to the hospital; some to the family doctor; some to the special schools, the open-air school, the school for physically defectives, the school for mentally defectives, the skin school, the school for the blind, the school for the deaf and dumb, where these exist.

Dr. Lewis Williams, of Bradford,¹ in his Report for 1911 states that no fewer than 1,710 children passed through the inspection clinic during the year. The attendances numbered 2,125. Of the total number, 99 children were examined with reference to transference to or from special schools; 273 were examined for admission to the open-air school; 93 children were found suffering from tuberculosis. Large numbers were found suffering from chest complaints, anæmia, heart disease, ringworm, adenoids or tonsils, sore throat, etc.

¹ For an excellent sketch of the school clinic in general, and Bradford School Clinic in particular, see "The Hygiene of School Life," by Dr. Ralph H. Crowley, then School Medical Officer for Bradford. This clinic was established in 1908.

COLLEGE OF HYGIENE AND SCHOOL CLINICS DUNFERMLINE :



TO THE
MEMBERS OF THE
COMMISSIONERS OF THE
LAND OFFICE

18

2. THE TREATMENT CLINIC

Where an inspection clinic already exists, and the education authority finds it necessary to establish a treatment clinic, the latter will naturally associate itself with the former. In practice, the necessity for a "treatment clinic" usually arises out of the "inspection clinic"; hence the treatment clinic will naturally incorporate itself with the inspection clinic, and become an integral part of an extended system of educational hygiene. The more closely acquainted we become with the intimate associations of inspection and treatment, the greater are seen to be the advantages of this organic unity.

We shall not, meantime, enter into detail on the treatment clinic. This is reserved for a subsequent chapter.

C. MANAGEMENT

43. Nothing is of greater importance in a school clinic than skilful management. In the efficient management of a school clinic three points require special consideration. These are :

1. Effective supervision of treatment.
2. Effective control of attendance.
3. Accurate registration of cases.

I. EFFECTIVE SUPERVISION OF TREATMENT

It is assumed that the staff will consist of at least one medical attendant and a nurse. In large clinics there may be several doctors, dentists and nurses. Whatever the size of the staff, there should be one responsible head—preferably the chief medical officer. It should be clearly understood that any part-time doctors, dentists, oculists, nurses or voluntary workers that may be attached to the clinic are, while in attendance, under the control of the responsible medical officer. Where there is an imperfect understanding of relations, and where different persons adopt different principles in dealing with the cases, friction results, and the harmony and success of the work suffer. Certain broad principles underlie the problem of the treatment of school children, and for administrative reasons these should be clearly understood and loyally adhered to by the staff of the clinic.

Personal differences in methods of treatment are matters beyond the province of the supervising officer, except in so far as they are inapplicable to the requirements or are clearly beyond the scope of a school clinic.

Again, it should be observed that, although the school clinic claims to provide methods of treatment not normally available for many diseases, its methods may degenerate into a mechanical routine and become largely ineffective. The tendency is all the more marked where large numbers attend for the treatment of precisely similar diseases. To guard against such mechanical routine is one of the most difficult tasks of the supervising medical officer. It takes time to investigate carefully the effects of treatment in certain cases, and there is a tendency, when the work of the clinic is heavy, to repeat mechanically the previous day's treatment when investigation would show that some modification of the method of treatment is called for.

And the danger becomes still more marked when much of the treatment is carried out by nurses. Nurses are competent to discharge, with great efficiency, much of the routine work of treatment, and it is unnecessary to employ medical men where nurses can do the work. At the same time, nurses should be under the supervision of a doctor. All cases treated by nurses should be seen at regular intervals by the doctor, and the date of his examination, and any change in the method of treatment, carefully recorded. Nurses will then be in a position to take a more intelligent interest in their cases, and to direct the attention of the doctor to any case where he may have omitted to make the periodical investigation into the effects of the treatment. Unless some systematic method of supervision is exercised over the treatment of chronic diseases, such as running ears, skin diseases and eye inflammations, much valuable time may be lost, and the ultimate cure of the child delayed. Moreover, loss of confidence on the part of parents in the efficiency of the school clinic may result.

2. EFFECTIVE CONTROL OF ATTENDANCE

It is easier for the school clinic than for the hospital to secure regularity of attendance. But inasmuch as

regularity of attendance, unless compulsory, is always somewhat difficult to obtain, even the school clinic may show weakness at this point—one of its so-called points of strength. The clinic has the advantage, however, if it is open during school hours, that attendance may be regulated to some extent through the school, by the assistance of schoolmasters. But the responsibility for regularity of attendance cannot be thrown entirely upon the school. The school should be regarded as a co-operative agency only, and if judiciously used as such, it may materially assist the “following-up” and supervising arrangements of the clinic.

The success of the clinic, then, as a means of securing effective treatment will depend largely upon its arrangements for “following up.” Effective “follow-up” will secure *the attendance* of children recommended for treatment as the result of medical examination, whether routine or special. On the other hand, *regularity of attendance*—a point of first importance—will depend largely upon the efficiency of the method of registration employed. The method of registration of cases and attendances should be such that, at the close of the day, it should be possible to discover, with a minimum of trouble, cases that should have attended that day, but had absented themselves. The more important cases could be “followed up” immediately, while the less important cases could be notified or got at through the school or the attendance officer.

Whatever details individual medical officers may find it necessary to introduce into their system for the control of attendance, the points indicated may be regarded as the minimum necessary to secure effective work.

3. ACCURATE REGISTRATION OF CASES

Accurate registration of cases and attendances is an essential feature of a well-organised school clinic. It is not only important that these records be kept, but that the method employed should fit into the system in use for regulating the attendances. Simplicity of method, with a minimum amount of clerical work, is what should be aimed at.

It is frequently found to be an advantage to make up the returns at the close of each day. Any great

DATE . .	1	2	4	5	6	7	8	9	11 etc.	TOTAL FOR MONTH
<i>Diseases of Skin :</i>										
Ringworm . .	3	—	3	3	5	4	5	2	4	609
Favus . .	1	2	—	—	—	—	—	—	—	
Alopecia areata . .	3	1	3	3	4	3	3	1	—	
Pediculosis . .	3	—	1	—	1	—	—	2	—	
Warts, etc. . .	9	3	6	9	14	12	14	5	11	
Impetigo . .	11	4	7	8	10	6	9	1	6	
Scabies . .	1	0	—	2	—	1	2	—	1	
Eczema . .	1	1	3	1	2	2	1	2	2	
Psoriasis . .	1	—	—	—	—	—	—	—	1	
Herpes . .	—	—	—	1	1	—	1	3	—	
Mollos. contag. .	—	—	—	—	—	—	—	—	3	
<i>General :</i>										
Burns . .	2	—	1	2	2	2	2	—	2	549
Septic Sores . .	20	7	17	13	19	20	18	9	19	
Wounds . .	3	1	6	7	6	6	4	1	2	
Toothache . .	—	—	—	1	—	—	3	—	—	
Miscellaneous . .	2	1	3	2	1	3	2	1	1	
Daily Total . .	108	33	105	102	116	106	127	52	111	
Monthly Total										1,661

This table shows, among other things, the number of new cases that attend the clinic each day and the channels through which they come; the number of cases referred by the school medical officer to private practitioners; the numbers sent to the clinic by private practitioners; the number of attendances and the diseases treated.

This sheet is made up at the close of each day from the cards in use for the registration of cases. Each child has his own card. This card is kept at the clinic. It contains the name, age, address, the school and the disease from which the child suffers. Each attendance is recorded on the card. Space is also reserved for notes on the periodic examination of the case by the doctor, and for the prescribed treatment. In addition to giving all the necessary information for statistical purposes, this arrangement makes it possible to exercise effective supervision over the cases whose treatment is left in the hands of nurses.

Moreover, it is desirable in the early stages of the development of a new departure that careful records

of work done should be preserved. Much valuable information, gained from experience, will then be available. New light will thus be thrown upon the efficiency, the economy and the results of treatment; and the bearing of medical treatment on the wider problem of general physical efficiency will be seen in its true perspective.

CHAPTER VI

THE SCHOOL CLINIC—ITS DEPARTMENTS AND WORK

44. In this chapter we shall endeavour to give a somewhat detailed sketch of the departments and work of the school clinic. But the description here given is not to be taken as indicating the extent and character of the work to be undertaken by every clinic. Many school clinics organised on a relatively small scale are doing admirable work. Indeed, the majority of the larger school clinics developed from small beginnings, and extended their operations gradually as necessity required.

The following passage from the Report for 1910 of the Chief Medical Officer of the Board of Education gives, in outline, the scope of the work of the school clinic :

The local education authorities which undertake to provide means of treatment for defective or ailing school children under Section 13 of this Act will be well advised to keep in view certain principles. The power conferred by the section is not indiscriminate or promiscuous. In matters of construction it is necessary to consider the whole scope and purport of the Act, or series of Education Acts, in which the section occurs. From such a consideration it is reasonable to suppose that Parliament intended (*a*) that the powers of treatment under this section should be used for children who are in attendance at public elementary schools, and that therefore children whose state of health necessitates absence from school without any hope of returning, or whose state is such that they can only be effectively dealt with in permanent institutions other than schools, should be regarded as outside the scope of this section ; (*b*) that the treatment supplied should be carried out in intimate connection with the system of education and with the school ; (*c*) that the maladies and conditions for which treatment is provided under this section should primarily be either such as are capable of amelioration in connection with school life, or are conditions which are, generally speaking, characteristic of school children. Though the wording of the section is extremely general, it is in the interests of sound administration that these three considerations should be borne in mind. In practice they limit the disorders and maladies for which treatment can suitably

be provided under Section 13 to minor ailments, uncleanness, ring-worm and certain other common skin diseases of children, defective eyesight or hearing, and various temporary conditions of the mouth, nose and throat. It is, however, impossible to exclude other conditions of a more general nature which can be dealt with while the child is in attendance at an ordinary or special school. It is, relatively speaking, immaterial, so far as the Act is concerned, whether the child is actually treated, wholly or partly, on school premises or at a hospital or some other convenient centre. Generally speaking, as will be seen in the present report, local education authorities have not hitherto proposed more extensive undertakings than those suggested. Arrangements have been made for the appointment of school nurses, spectacles have been provided, and treatment of various "school diseases" has been undertaken in hospitals, dispensaries and school clinics.

As regards the diseases suitable for treatment at a clinic the list would appear to be small. But if we consider in some detail the diseases that comprise this list, we shall find that they are not few but many. There are, perhaps, few of the "returns" that give a better indication of the variety of diseases treated than the Report of the Deptford Clinic. The Deptford Clinic, initiated, controlled and directed by Miss Margaret McMillan, has done excellent pioneer work, and may still be regarded as a model of comprehensiveness and efficiency. The tables published in the Report for the year ending July 1912 are so instructive that we quote them in full. The tables show the variety of diseases and their relative frequency.

The following list gives the diseases for which the medical cases of ailing children presented themselves.

TABLE I

Defects of vision	534
Eye diseases	392
Ear	304
Throat	835
Nose	22
Skin	622
Spine	62
Anæmia and debility	95
Acute diseases	92
Injuries	185
Various	365
No treatment required	18
Infants	218
<hr/>	
Operations	3,744
	701



DUNFERMLINE GENERAL SCHOOL CLINIC—TEMPORARY PREMISES.



A complete analysis of the above table is given in the following tables :

TABLE II

ERRORS OF REFRACTION

Convex glasses	186
Concave	49
Convex cylinders or sphere-cylinders	213
Concave cylinders or sphere-cylinders	37
Concave one eye and convex the other	6
Referred to hospital	1
No glasses ordered	25
Did not complete attendance	13
Refused treatment	2
Under treatment	2

 534

TABLE III

DISEASES OF THE EYE

Conjunctivitis and blepharitis	316
Phlyctenular ophthalmia	39
Trachoma	4
Stye	10
Herpes	1
Meibomian cyst	1
Lacrycystitis	2
Iritis	2
Episcleritis	1
Coloboma iridis	3
Cataract	1
Ptosis	1
Night blindness	1
Traumatic keratitis	1
Injuries	9

 392

TABLE IV

EAR DISEASES

Discharging ears	267
Wax	16
Various	21

 304

TABLE V

THROAT CASES

Tonsils	148
Adenoids	356
Both	299
Various	32

 835

TABLE VI

DISEASES OF THE NOSE

Rhinitis	19
Deflected septum nasi	2
Polypus	1
	<hr/>
	22

TABLE VII

DISEASES OF THE SKIN

Ringworm of head	63
Ringworm of body	7
Impetigo	426
Various	126
	<hr/>
	622

TABLE VIII

SPINAL DISEASES, ETC.

Curvature of the spine	42
Breathing exercises	16
Infantile paralysis	1
Flat foot	2
Constipation	1
	<hr/>
	62

TABLE IX

ACUTE DISEASES

Rheumatic fever (the heart affected in 5 cases)	15
Chorea (the heart affected in 2 cases)	9
Mastitis	2
Various	66
	<hr/>
	92

TABLE X

VARIOUS DISEASES

Gastro-intestinal disorders	40
Respiratory disorders, such as colds, coughs, bronchitis, dilated bronchi, old empyema, etc.	43
Suspected pulmonary tuberculosis	16
Tuberculous glands	17
Inflamed and enlarged glands	14
Chronic nephritis	3
Heart diseases	8
Neuroses	9
Epilepsy	3
Enuresis	11
Worms	10
Various	181
	<hr/>
	355

TABLE XI

OPERATIONS

Operations for adenoids and tonsils	697
Various	4
	<hr/>
	701
Number of operating days	44

Owing to the variety of diseases requiring treatment, the work of a fully organised school clinic tends naturally to divide itself into departments. This division into departments develops as a matter of expediency. It is found, for example, that one set of conditions does not require "treatment" by a fully qualified medical man. They can receive appropriate treatment by a nurse working under medical supervision. Other sets of conditions require the attention of specially qualified persons, and fall naturally to be dealt with by such persons. Although this division of the work of a school clinic into departments is more or less an arbitrary one, it will nevertheless serve as a useful method of classification for purposes of description. Moreover, it has been frequently found that when a school clinic extends its operations it does so by the addition of one or more of the departments that we are about to describe.

The work of a school clinic as a "treatment centre" may embrace one or any number of the following departments:

A. General medical department.

1. Treatment of minor ailments.
2. Cleansing schemes.
3. X-ray treatment of ringworm.

B. Ophthalmic department.

C. Dental department.

D. Orthopædic department.

E. Operative department.

A. GENERAL MEDICAL DEPARTMENT

I. TREATMENT OF MINOR AILMENTS

45. This department undertakes the treatment of all conditions that require what may be termed "dressing." The diseases included in this category are mostly those enumerated in Tables III., IV., VI., VII., on pp. 77, 78.

The treatment of the majority of these diseases may be undertaken satisfactorily by a nurse working under medical supervision. This does not mean that those diseases do not require skilled treatment. Nurses readily acquire great skill in the "dressing" of quite serious conditions. So numerous are the cases requiring daily treatment that it is more economical for the nurse than for the doctor to do the routine work.

Reference to the tables mentioned above will show that, although the diseases are numerous, the bulk of the work of this department is made up of eye inflammation, discharging ears, ringworm, impetigo and minor ailments. Each one of those so-called "minor" diseases requires frequent skilled attention extending over a lengthened period. The treatment of eye inflammations is of the utmost importance in fitting children to profit fully by their education. Return to school is hastened by an early cure, and in the more serious cases permanent diminution of sight may be prevented.

Discharging ears also give rise to much work. Cases may attend the clinic daily for many weeks. Skilled daily treatment hastens cure, does much to prevent permanent diminution of hearing, and, moreover, removes a source of danger to life.

Dr. Tribe, in his Report on the results of treatment at the Poplar clinic, gives the following interesting information with regard to discharging ears :

The cases of running ears are the most difficult part of the problem for those who wish to see the treatment of school children carried out by the hospitals and other existing institutions. It was found that nothing less than daily syringing by an expert—*i.e.* the nurse—was of any use, and that several of the cases showed no signs of any improvement until the syringing was done twice a day. What makes the case stronger for treatment in the school itself is the length of time it took to effect a cure ; roughly speaking, it took as many months to cure the



EDINBURGH—LAURISTON PLACE SCHOOL FOR SKIN DISEASES (PLAYGROUND).



condition as the months it had existed untreated, and at the end of two years there were still three or four cases that were no better. The following table gives the facts as to the length of treatment :

Case				Duration of treatment in weeks	Ear affected	Comments
Cured	1	37	Both	2 relapses		
	2	8	Left			
	3	13	Right			
	4	4	Left			
	5	9	Both			
	6	13	Both			
	7	14	Both			
	8	38	Both		1 relapse	
	9	30	Left			
	10	8	Right		1 relapse	
	11	8	Both			
	12	19	Both			
	13*	51	Right			
	14*	46	Both			
Still under treatment	15	42	Right	2 relapses		
	16	60	Both			
	17	68	Both			
	18	15	Both	2 relapses in one ear		
	19	56	Both			

* These cases are not included in total of ear cases, as they were suffering primarily from other diseases.

Out of all these cases only one developed any signs of mastoid trouble, and he was transferred immediately to hospital. The method of treatment was boracic syringing followed by drops. Of these we found a solution of perchloride of mercury (1 in 1,000) in equal parts of spirit and water to be most efficacious.

Skin diseases, with the exception of ringworm and favus and minor injuries, can receive all necessary attention at the hands of the nurse. Indeed, many of the cases do not require treatment by the doctor.

Perhaps one of the most interesting features of this department of the clinic work is the vast amount of suffering that can be relieved at comparatively little cost. Given suitable accommodation, the equipment need only be of the simplest kind. A few chairs, a high couch for cases that require treatment in the recumbent position, a table, a sink and wash-hand basin with hot and cold-water supply, a couple of pails—one for soiled dressings, and one for use as a foot bath—a few simple dressings, drugs, lotions,

ointments and instruments are sufficient to make possible a great amount of useful work. Sums varying from five pounds to twenty pounds, depending upon the number of children to be treated, will suffice for the equipment of such a department in a school clinic.

A complete list of the instruments, drugs, dressings, etc., in use at the Dunfermline General Clinic will be found on page 132.

2. CLEANSING SCHEMES

46. A certain amount of "cleansing work" may be undertaken by the school clinic. Such an arrangement may be useful, particularly in the cleansing of individual children. But unless special provision exists in the school clinic for the thorough cleansing and disinfecting of body and clothing (conditions necessitating suitable bathing accommodation and a steam-disinfector), such a scheme would not be considered complete in itself. It should be regarded rather as accessory to a more general scheme of cleansing (where such exists) arranged in conjunction with the sanitary authority.

An excellent example of what can be done in this direction is furnished by Dr. George Rose, Chief Medical Officer, Aberdeen, in his Report for 1911. Dr. Rose says :

The futility of trying to get rid of itch and vermin in the schools by dealing only with children suffering from these complaints early became evident. Case after case that had been dealt with turned up with wearying regularity, so that it was soon apparent that, unless the whole family and the home were dealt with, no permanent improvement could be expected.

After considerable negotiations between the Board and the sanitary authority, an agreement was entered into to deal with all such homes and families. The expense of the scheme of cleansing, which was estimated to cost £800 per annum, was to be borne equally by the Board and the local authority.

The heads of the agreement between the two bodies are : that the School Board undertakes the inspection of verminous children and their households and reports to the Public Health Department of the Town Council as to what is required for their cleansing and disinfection. The public health authority of the Town Council provides the necessary accommodation, the staff, conveyances and apparatus for cleansing. An inspector was appointed to act under the instruction of the medical officer of the Board, and the work was begun on March 13, 1911.



EDINBURGH—LAURISTON PLACE SCHOOL FOR SKIN DISEASES (TREATMENT-ROOM).



METHOD : When a child is found suffering from vermin or itch, it is excluded from school, along with all children of the family. The house is visited by the inspector, who reports to the medical officer, on the condition of the family, as to numbers, means, accommodation, bed and body clothing, etc. Disinfectant is supplied with instructions how it is to be used, or where, on account of lack of accommodation, or of bed or body clothing, it is considered necessary the whole family is removed to the cleansing station to be treated. Where children are found verminous the second time, the family is removed invariably to the cleansing station.

When a family is taken to the cleansing station for the purpose of disinfection, every stitch of bed and body clothing is removed from the house and is disinfected. The house itself is disinfected and cleaned, fresh chaff is supplied for the beds, and, where necessary, the bed and body clothes are washed. The family thus get a fresh start in life. In carrying out this work every consideration is shown for the feelings of those dealt with. Adult members go to the cleansing station at night and leave in the morning in time to get to work.

Although considerable dubiety was expressed at the inauguration of this scheme as to getting adults to go to the cleansing station, and of homes and families remaining clean after treatment, doubts have been agreeably dispelled. The scheme has worked smoothly, largely owing to the tact of those dealing with the infected families and the excellent provision made for their comfort during the cleansing process. In only two cases has it been necessary to resort to legal compulsion.

While it is too soon to come to a conclusion about the success or failure of this scheme, re-examination of the children attending school has given so favourable results, that there is ground for believing that a successful method of dealing with this reproach of our city has been found.

The total number of cases dealt with since March 13, 1911, is 399, involving 2,261 persons. Of these, 36 cases, involving 227 persons, were removed to the cleansing station. The rest had disinfectant supplied to them, with instructions how to use it. Of the total number dealt with, 965 were adults, equal to 42·69 per cent., 912 school children, equal to 40·34 per cent., and 348 were under school age, equal to 16·97 per cent.

It would appear to be the only reasonable method of combating this disagreeable and all too prevalent condition that there should be concerted action on the part of the school authorities responsible for the inspection of children and the sanitary authority responsible for the hygiene of the home.

3. X-RAY TREATMENT OF RINGWORM

47. When ringworm affects the scalp, it is an extremely obstinate disease. It continues to give much trouble to the school medical officer, to cause prolonged exclusion from school of affected children, to disturb

seriously the education of those children, and to cause loss of grant to the education authorities.

As regards the treatment of ringworm, the following extract from Dr. William Benton's Report for 1911 to the East Ham Education Authorities expresses the general experience of medical officers :

Such cases have been in periodic attendance at the clinic since its opening, and a variety of "specifics" have been applied without much benefit. To thoroughly treat a scalp which is extensively affected with ringworm by means of ointments, etc., requires a patience and energy which the average parent does not seem to possess. The rubbing in of ointment to be efficacious must be practised each morning and evening for at least five minutes at any given spot, and it does not require much calculation to satisfy oneself that for an extensive affection a considerable part of each day will be occupied in the treatment of one child. When two or three members of the same family are affected, the necessary treatment to be effective becomes an impossibility. A few of the worst cases of ringworm have received treatment at the London Hospital by means of the X-rays, and the results have been such as to convince me that to undertake the treatment of a long-standing case of ringworm of the scalp by ordinary means when X-ray treatment is available is useless and foolish. Were such treatment readily available for the children of East Ham, a considerable saving of grant to the authority would no doubt be effected.

The following extract from the Deptford Clinic Report, 1911, with reference to the drug treatment of ringworm is interesting :

During the last six months we have had many cases of ringworm. Treatment has consisted in (1) cutting the hair short ; (2) daily application of 10 per cent. oleate of copper ointment ; (3) covering the head with a paper cap. Nine cases have been cured by this treatment.

The average duration of treatment was seven weeks, the maximum fourteen weeks.

In spite of these apparently satisfactory results, we find in the 1912 Report the following statement :

In order to save time we endeavour to get our cases of ringworm treated at the hospital by X-rays. The demand for this treatment is, however, greater than the supply, and we are compelled to treat a certain number. . . .

It may be accepted that there is a general agreement that the only satisfactory treatment for ringworm of the scalp is by X-rays. Not only are the results generally satisfactory, but there is some evidence to show that by strict supervision and treatment the

disease may be ultimately stamped out. Dr. Lewis Williams, Bradford, in his Report for 1911 writes :

There has been a very marked decrease in the number of cases of ringworm. The decrease is undoubtedly due to the strict exclusion of the children from school until cured and the provision of treatment by means of X-rays.

He gives also the following figures relative to X-ray treatment. The total number of cases treated during 1911 was 285; of these 246 were cured by one application; seven required a second application. The average number of "exposures" per child was 3.37; and the average number of days until cases were cured was 30, less than a fifth of the average time required by drug treatment.

It seems clear, then, that where ringworm is prevalent, treatment by X-rays is the only satisfactory method of cure. But for such treatment an installation is required. So far only nine education authorities have provided installations of their own. A small number (about eight) have their cases treated by arrangements with specialists, and a few employ hospital installations.

An efficient installation costs from £100 to £200.

In the absence of an X-ray installation it is still possible for the school clinic to discharge useful functions with respect to ringworm. During drug treatment it may not be necessary in every case to exclude affected children from school. Infection from ringworm may be reduced to a vanishing quantity if the hair be closely cut, and the head kept scrupulously clean and free from scales. These points may be secured by frequent cropping, daily washing and smearing of the head with ointment. These things provided for, the child may attend school, if he wears a linen cap. Such a method of dealing with ringworm is, however, applicable only where strict supervision, such as a school clinic provides, is possible. This practice is in vogue in Dunfermline and Birmingham.

B. OPHTHALMIC DEPARTMENT

48. The work of the ophthalmic department comprises two distinct groups of cases—namely, (1) defects

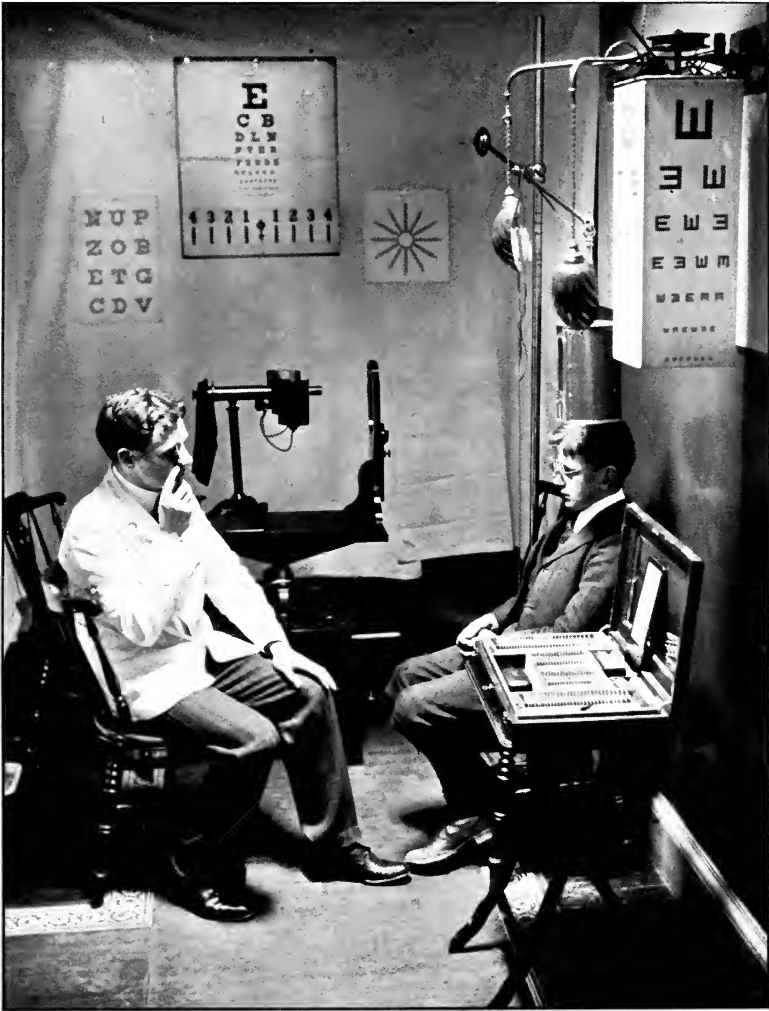
of vision, and (2) inflammatory diseases of the eye and its appendages.

Reference to Tables II. and III. on page 77 will show the relative frequency of the conditions falling within those two groups.

No reference is made to squint in Table II. It is, however, relatively common. If untreated, the squinting eye only too frequently becomes functionless. Its treatment after the age of five is not very hopeful. To obtain satisfactory results treatment should be applied before the child is three years of age. This fact raises a general question of great importance—namely, whether it would not be ultimately more efficient and economical to extend the benefits of school clinics to all children under school age. Squint is not the only defect to postpone the treatment of which means failure to cure. There would not appear to be any very sound reason for delaying medical treatment until children reach school age. Why should a child's stage of mental development determine the time when he shall be in a position to benefit from the operations of the school clinic? Experience will probably very soon prove that to obtain the best results compulsory inspection with facilities for treatment will require to be extended to children under school age.

I. TREATMENT OF INFLAMMATORY DISEASES OF THE EYE

It may be convenient in the majority of clinics to delegate the treatment of the less seriously affected cases in this group to the nurses working in the general medical department. The ophthalmic surgeon could himself undertake the treatment of the more serious cases. It is, however, desirable that this work should be intimately associated with the work of the general clinic. It must frequently happen that the eye specialist will visit the clinic only on stated days. In practice, it has been found that, where the clinic is sufficiently large to justify the procedure, it is better for the eye specialist to devote a certain portion of his time to the examination and treatment of the inflammatory cases in the general department where he can have the assistance of a nurse who will be able to apply the treatment in his absence. Such an arrange-



DUNFERMLINE EYE CLINIC.



ment is both efficient and economical; it makes possible frequent and regular treatment. It has the further advantage that it makes a minimum demand on the eye specialist's time.

In many instances the eye specialist is appointed to deal only with cases of visual defect; the treatment of the inflammatory diseases of the eye being left to the medical officer in charge.

2. CORRECTION OF VISUAL ERRORS

This work requires to be undertaken by an eye-expert. Frequently the school medical officer has the necessary experience to enable him to undertake it.

The relative frequency of the various forms of visual defect is shown in Table II., p. 77.

The methods of estimating errors of refraction differ slightly in detail in different clinics. In Deptford Clinic—

Refraction is estimated by retinoscopy, accommodation being paralysed by the installation of a drop of a 2 per cent. solution of homatropine and cocaine in castor oil.

Marked cases of disease are required to visit the clinic after an interval of six months.

In Bradford Clinic the cases are examined under atropine.

In some clinics children may require to attend twice; on the first occasion to have the necessary "correction" estimated; on the second occasion to have the spectacles fitted (where these are supplied through the clinic). In other clinics a preliminary attendance is required to give the necessary instructions as to the preparation of the eye with atropine. In some cases the school nurse visits the home to arrange for this preliminary preparation. This preliminary preparation a few days before the eye is examined is necessary when the oculist prefers to carry out his examination with the eye in a state of complete paralysis. In the former case the oculist will prepare the eye and complete his examination at the one visit. The latter method is perhaps not quite so accurate as in complete paralysis, but for children of school age it is considered by many to be sufficient.

The number of cases that can be corrected in a

given time will depend largely upon the skill of the oculist. Normally four cases an hour may be considered a good average.

3. EQUIPMENT OF OPHTHALMIC DEPARTMENT

As regards the equipment of the ophthalmic department of a school clinic, the following list of drugs and instruments in use at the Dunfermline School Clinic may be regarded as providing all that is essential :

LOTIONS

1. Boracic acid, saturated solution.
2. Sublimate (1-6,000).
3. Sodium bicarbonate, 3 per cent.

OINTMENTS

1. Yellow oxide of mercury, 1 per cent. or 2 per cent.
2. Yellow oxide of mercury, 2 per cent. ; with atropine, $\frac{1}{2}$ per cent.
3. Atropine, 1 per cent.
4. Ichthyol, 5 to 10 per cent.

DROPS

1. Silver nitrate, $\frac{1}{4}$ to $\frac{1}{2}$ per cent.
2. Argylol, 10 to 20 per cent.
3. Zinc sulphate, $\frac{1}{2}$ per cent.
4. Atropine, 1 per cent.
5. Homatropine and cocaine, 2 per cent. of each.
6. Fluorescin, 2 per cent. in sod. bicarb. sol. 3 per cent.
7. Cocaine, 1 to 4 per cent.
8. Eserine, $\frac{1}{4}$ to $\frac{1}{2}$ per cent.

Stroschein's drop bottles with engraved lettering are very suitable for these.

POWDERS

1. Calomel.
2. Iodoform.

CAUSTICS

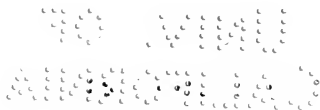
1. Tincture of iodine.
2. Pure carbolic acid.

INSTRUMENTS

1. Undine irrigators.
2. Kidney trays.
3. Camel-hair pencils.
4. Spud and scoop.
5. Corneal loupe.
6. Lid retractor.
7. Epilation forceps.



EDINBURGH EYE CLINIC



APPARATUS FOR CORRECTION OF REFRACTION

1. Test type (distant—Snellen's).
2. Test type (near—Jaeger).
3. Wall bracket (with incandescent or electric light).
4. Ophthalmoscope (Morton's).
5. Trial frame.
6. Trial lenses.
7. Geneva lens measure.

The following additional apparatus may be found useful :

Ophthalmometer (astigmometer, keratometer).

Perimeter.

Placido's disc.

"Rising Sun" diagram, for astigmatism.

An efficient department may be equipped for a sum of about £20.

4. SUPPLY OF SPECTACLES

The following lucid statement is taken from Sir George Newman's Report for 1911 :

In cases where medical inspection shows that the provision of spectacles is necessary for the treatment of defective eyesight, the Board have considered proposals from local education authorities to provide suitable and inexpensive spectacles free of charge. They have, however, only sanctioned such an "arrangement" on the understanding that every endeavour has first been made to obtain the provision of the spectacles by the child's parents or by any voluntary associations which exist for the purpose. The Board have required that due precautions should be taken to secure accurate examination and appropriate prescription by medical men of suitable experience. During the code year 1911-12 eighty-two authorities received sanction for such expenditure.

The total estimated expenditure was about £1,150. The average cost of spectacles is stated as from 2s. to 3s. 6d. a pair, and this may be taken as about the normal price charged on the rate. In many cases the parents are able to contribute towards the cost of the spectacles, and in a considerable percentage of cases it appears that they have done so.

Experience has abundantly shown that an arrangement made for the provision of spectacles is not of itself sufficient remedy for defects of vision. As the removal by operation of enlarged tonsils and adenoid growths is an incident only in the treatment of the symptoms to which the abnormal growths give rise, and as the provision of meals to a child constitutes a link only in the chain of treatment of malnutrition, so the provision of glasses is a part only of the whole process involved in the treatment of defective vision. It is necessary to ascertain that the glasses are correctly measured, actually procured, rightly fitted and regularly worn, and, further, to secure that the child is re-examined at suitable intervals. The school oculist should be in close touch with the school teacher, and cognisant of and interested in the school curriculum and school arrangements generally. This is of special importance in the case of the treatment of squint.

The methods employed to ensure that spectacles are "rightly fitted" vary in different clinics. In Bradford each child is sent to be measured for frames to an optician with whom the Committee have a contract for the supply of spectacles, and is told to return to the clinic in a week's time.

In Deptford—

The prescriptions for the glasses are sent to the officials of the London County Council, the parents paying for the glasses (by instalments when necessary) to the Council. The glasses are sent by Messrs. Straw & Son, the opticians to the schools, and the children attend the clinic with their glasses.

At East Ham—

A representative of the spectacle firm attends the clinic to measure for glasses and to pronounce judgment on the fit of supplied spectacles. This arrangement, combined with the re-examination by Dr. Thompson of all cases supplied with spectacles, assures the provision of suitable glasses for all cases prescribed for.

In every case it appears to be the rule for school clinic authorities to satisfy themselves that the spectacles are "rightly fitted."

As regards the quality of spectacles supplied, it would not appear to be essential that the quality should be of a high standard. At the same time, sufficient care should be exercised to prevent the supply of very cheap and unreliable lenses. Lenses are supplied of several qualities. The quality known as "seconds" would appear to satisfy the requirements of school children. Cheaper and unreliable lenses can be obtained at a very low figure, but it is doubtful whether it is economical to encourage the use of them.

As regards frames, several qualities can be obtained; but the twisted wire frame is probably the most suitable for children.

5. RURAL EYE CLINICS

Successful efforts to meet the difficulty of providing for the correction of visual defects, and the supply of spectacles in counties, have been made by a number of education authorities. Cambridgeshire, Carnarvonshire, Denbighshire, Flintshire and Somersetshire are among these.

Dr. A. E. Williams, School Medical Officer, Flintshire, in his Report for 1909 gives the following account of the "Flintshire Flying Clinic."

Difficulties presented themselves. In order to make a thorough examination of the eyes, it was necessary to have a dark-room and a special lamp for illuminating the eye. Moreover, it was considered impracticable to gather the children together to one centre.

The difficulties were overcome by devising a portable apparatus consisting of a small tent made of dark material, which serves as an excellent dark-room, and a special lamp, which can be connected with an ordinary gas-burner. These, along with a case of trial lenses, are packed into a leather case measuring 24 by 12 by 4 inches.

The apparatus is fixed up in a school, and this school acts as a centre for the district.

Arrangements were made with a firm of opticians for the supply of spectacles, the prices varying from 1s. 6d. to 3s. This amount is charged to the parent, but where the Committee are satisfied that the parents of any child are unable to afford to pay, the cost, or a portion of it, is borne by the Committee.

In order to insure that each child has properly fitting frames, a number of varying sizes are carried, and each child fitted when examined.

In a later Report Dr. Williams states that—

The arrangements made for supplying the children with spectacles have worked well.

Similar arrangements are now extensively employed in several counties, Essex and Somersetshire having numerous centres throughout the counties. These "vision clinics" are held for the most part in the schools.

C. DENTAL DEPARTMENT

49. Dental clinics are already more numerous than any other form of clinic. Several factors contribute to an explanation—the extreme prevalence of dental caries, the growing information as to the effects of bad teeth upon health, the definite nature of the treatment required, and the fact that the problem of treatment at special clinics is uncomplicated either by hostility from dentists or by the possibility of hospitals undertaking the work. Indeed, it is difficult to see how efficient treatment on a sufficient scale can be organised except in dental clinics.

But here, as in other diseases, although treatment may be an immediate necessity, it cannot be regarded as the ultimate aim of dental hygiene. As in every

other disease, prevention and not cure is the ultimate aim. No doubt it is through treatment that methods of prevention are most likely, for the present, to be successfully applied. And this may continue to be the case until the ultimate causes of dental decay are more clearly understood.

The work of the school dentist may be conveniently considered under "inspection" and "treatment."

I. DENTAL INSPECTION

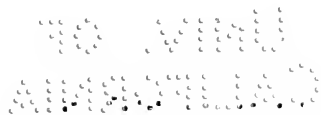
The question has frequently been asked—Is it necessary for the dentist to inspect children in order to select cases for treatment? Cannot the school medical officer pick out suitable cases during his routine inspection?

In the first place, the school medical officer's examination of the mouth is necessarily a more or less cursory one. He takes note of obviously decayed teeth only. A subsequent careful examination of the teeth with a dental mirror and probe would show far more extensive decay. It has been found in New York that the obviously decayed teeth are only about one eighth of the actual decay. But even if the school medical officer were to conduct a careful inspection of the mouth, a re-inspection by the dentist that is to treat the case would ultimately be necessary. Moreover, the dentist's special training enables him to conduct the examination more expeditiously, and he is in a better position to judge as to the cases and conditions that are most likely to benefit from conservative treatment.

It must be clearly understood that the main object of school dentistry is conservative—to save every tooth that can be saved, and to extract only those that are obviously beyond saving and in a septic condition. The answer to the question whether the dentist should undertake the inspection of cases is thus determined by the object of the dental treatment. If the object were merely to extract obviously decayed teeth, then the medical officer could select the cases for treatment. But as the main object of dental treatment is conservative, it is desirable that the selection of cases should be undertaken by the dentist.



EDINBURGH DENTAL CLINIC.



Sir George Newman, in his Annual Report for 1911, says :

The dental surgeon appointed in connection with a dental clinic should be responsible for the selection as well as for the treatment of the children, and should be placed upon the staff of the school medical officer, under whose general supervision he should work. Only in such a manner can the unity of the school medical service be preserved, and the collateral issues raised by dental questions be duly considered.

Let it be agreed that the dentist should undertake the inspection of children. The next point is to determine the method of procedure in the selection of cases.

To obtain the best results inspection should take place from the commencement of the eruption of the first permanent teeth. These begin to come in practically at the commencement of school life, so that inspection, with a view to treatment, should be confined to children between the ages of six and eight. Early decay in the first permanent teeth will thus be detected and treated, while at the same time any treatment necessary for the temporary teeth can be carried out. Sir George Newman, in his Report for 1911, says :

As a rule, one dental inspection per week, or even per fortnight, is sufficient to keep the treatment centres fully engaged.

Again, re-inspection of all children that have undergone dental treatment should be carried out at least once a year. More frequent re-inspection would scarcely be practicable. Moreover, experience would appear to show that no tooth commencing to decay during the year is likely to decay to such an extent as to be "unsaveable" within the year.

2. DENTAL TREATMENT

This is not the place to enter into the technicalities of dental treatment. It is sufficient to state the principles of treatment that are now generally accepted as likely to give the best returns for the time and money expended. The aim of school dentistry is, in the main, to preserve in good condition the permanent teeth and to apply palliative treatment to such temporary teeth as do not require to be extracted. Moreover, it has to

be pointed out that, the earlier treatment is undertaken, the more rapidly and efficiently it can be conducted; and with much less suffering.

A certain amount of extraction will be necessary for conservative reasons. But those extractions will be confined mostly to temporary teeth. The relative frequency of "fillings" and "extractions" varies considerably in different clinics. In the Cambridge Clinic it has been found that there is on the average one extraction for each child treated—the fillings at this clinic being an average of $3\frac{1}{2}$ per child. In other clinics—*e.g.*, Deptford, Dunfermline and Bradford—extractions and fillings are more nearly equal in number.

At Bradford, during 1911, out of 1,291 extractions only two were permanent teeth.

With regard to the numbers found on re-inspection to require further treatment, Sir George Newman's Report for 1911 states that in Cambridge—

Very few children made artificially sound one year had "unsavable" teeth on the occasion of the inspection in the following year. In the case of 1,074 children re-examined, only 21 decayed unsavable permanent teeth were registered; 621 of the children required some further treatment, decay having supervened in one or more teeth since the previous year. On the average, it is found that one permanent tooth becomes decayed each year in the interval of inspection.

The same Report states with reference to Bradford:

Reporting on the children who had undergone treatment in 1910, and re-examination in 1911, Mr. Knowles states that there was a very obvious improvement in the teeth of this group, both in the condition of cleanliness and in the healthiness of the mouth. Of the 390 children treated during 1910, only 49 were found on re-examination to require any further treatment.

These results are highly satisfactory, and are indicative of the soundness of the principle of systematic treatment of the early permanent teeth.

Where numerous extractions or other painful treatment is necessary, the use of a general anæsthetic has been found to be of great value. In Bradford Clinic use is made of an installation of gas and ethyl chloride. In Deptford Clinic nitrous oxide is used, while in Dunfermline a mixture of nitrous oxide and oxygen is in use.

The numbers that continue to receive treatment at

dental clinics is evidence enough, if such were necessary, that the fear of pain on the part of the children does not constitute an obstacle to the success of school dentistry.

3. EQUIPMENT OF DENTAL CLINIC

The rooms selected for dental work should have ample light. North light is preferred, as it is more uniform and shadows are less intense.

The equipment of a dental clinic is rather expensive, but considering its permanent nature, and the numbers that are likely to benefit, it is relatively less expensive than the equipment of other departments. It is scarcely necessary to give a detailed list of all the dressings, etc., that may be required. The following list of fittings and instruments is taken from the Report of the School Dentists' Society:

- A dental chair.
- Cabinet.
- Bracket table.
- Spittoon (including saliva ejector).
- Five pairs of dental forceps and an elevator.
- Two dental probes, double-ended.
- One dental machine with No. 7 handpiece and No. 2 right-angle attachment.
- One gross of burs, assorted.
- One dozen excavators, N. P. assorted.
- Two chisels.
- Three scalers.
- Four plastic instruments.
- One spatula.
- One glass slab.
- One glass pestle and mortar.
- One college tweezers.
- One amalgam spoon.
- One mercury holder.
- One chip syringe.
- One water syringe.
- Three mouth mirrors.
- One spirit lamp.
- One sterilising tank (gas or spirit).
- One crystal glass sterilising vase.
- Gas apparatus, consisting of stand with upright, bag, tubing, mounts, aseptic 3-way stopcock, celluloid facepiece, and two 100-gallon cylinders filled with nitrous-oxide gas.
- Three mouth props.
- One tongue forceps.
- One mouth opener.
- One sponge holder.

4. DENTAL TREATMENT IN COUNTIES

With the exception of the few counties that have made arrangements for "vision clinics," treatment schemes established in county areas are almost entirely "dental." The majority of these are largely voluntary in character. A list of those centres will be found under "Counties" on page 106 and "Rural Districts" on page 110.

Dr. Deborah Hancock, Assistant School Medical Officer, Gloucestershire, in the Annual Report for 1911 writes :

It seems impossible to get the teeth attended to in country districts by the only means available in many cases—viz., private dentists—on account of the expense to the parents, and often on account of lack of time on the part of the dentists available. It would appear that some special arrangement will need to be made for the care of the teeth of school children.

The following example from Sir George Newman's Report for 1910 of the Dorset County Scheme illustrates the success that may attend such efforts :

An interesting experiment is in operation in Dorset, a whole-time dentist having been appointed through the generosity of two private donors. The work was only commenced this year. An area of the county was selected, and the dentist worked from convenient centres, taking the necessary apparatus with him from centre to centre. A fee of 1s. is now charged for each child treated, irrespective of what is done. Children of all ages suffering from dental caries are eligible for treatment. By the scheme it is hoped to test "(1) The amount of work a qualified dentist can do during his visits to the schools ; (2) how far the parents will avail themselves of this opportunity of having dental treatment for their children ; (3) what amount they will contribute to the cost ; (4) the cost of working such a scheme, if placed upon a permanent basis and extended to other divisions of the county. No gratuitous service will be asked of any doctor or dental surgeon. It will not interfere with private practitioners, as it will take a class of work not previously dealt with." A report on the scheme for the first half of 1911 shows the amount of work accomplished :

Number of schools at or from which children were treated. (The actual number visited was 37.)	60
Number of children examined	920
Number of children treated at once	783
Number of children treated under gas	173
Total number treated with and without gas	886

(Seventy children treated at once also required treatment under gas.)

As will be seen no restrictions as to age have been made, though

the treatment of older rather than younger children has been favoured. The school medical officer reports further as follows :

The average number of children treated per week has been thirty-eight. Working at the same rate the dentist will be able to treat about 1,700 children during the year. It will take at least two years for him to visit all the schools within the county education area.

By restricting the treatment to those of certain ages (*e.g.*, 11-13), and reducing the number of schools visited, the children from the smaller schools requiring treatment being collected at the larger schools, it might be possible for one dentist to make a circuit of the county in one year. Generally speaking, much fewer children apply for treatment when the school is not visited.

Continuing the comments on this scheme, the 1911 Report states :

During the year the school dentist, Mr. Yerbury, treated 1,299 children drawn from 99 schools. 2,916 teeth were extracted (742 under general anæsthesia) and 592 fillings made. Children of all ages were treated. A uniform charge of 6*d.* was made originally, but in October this was raised to 1*s.* During the earlier part of the time 17·27 per cent. of the children were treated, this number dropping to 10·65 when the fee was raised. In regard to the general arrangements, the school medical officer, Dr. J. E. Robinson, reports :

A class-room was set aside as a surgery, and the following articles were provided by the managers or head teachers—jug of water, basin and towel, kettle of water, small table and tumbler.

All instruments and apparatus were brought by the dentist. The children who applied for examination were in turn called from their places in class into the room. The children who required no treatment returned at once to their respective classes ; the others were treated at once, except those whose defects necessitated treatment under gas. These were directed to attend at a later date.

The gas cases were dealt with, as a rule, on Saturday mornings, usually at some convenient central school, the anæsthetic being administered by such resident doctors in the place who were willing to undertake the work. A fee of one guinea was paid them for a morning or afternoon of two hours or less.

It would appear that, in county areas, some such method of employing a whole-time dentist to visit established centres affords the only solution to the admittedly difficult problem of dental treatment.

D. ORTHOPÆDIC DEPARTMENT

50. The purpose of this department is to undertake the treatment, by means of medical gymnastics and massage, of certain forms of physical deformity.

The cases suitable for such treatment are, for the most part, those of acquired deformity. Congenital deformities are not so amenable to the treatment by gymnastic movements. They usually require surgical treatment.

The following deformities show the type of case most suitable for treatment by gymnastics and massage—namely, lateral spinal curvature (scoliosis), round shoulders (kyphosis), hollow back (lordosis), flat chest with shallow respiration, knock-knee, flat-foot, weak and atrophied limbs following infantile paralysis, etc. Similar treatment is also found useful in sprains.

So far as we are aware, only five school clinics in this country possess an orthopædic department—namely, Deptford, Dunfermline, Woolwich, Bradford and Brighton.

I. DUNFERMLINE ORTHOPÆDIC CLINIC

51. The Orthopædic Clinic at Dunfermline is the largest and best equipped. This "remedial clinic" was originally organised for the purpose of affording the necessary facilities for training the students of the physical training college in medical gymnastics. It has now been in existence for six years, and, although not at first known as a "school clinic," it fulfilled, to a limited extent, the functions of such a clinic. It was thus one of the first school clinics in this country.

The following extract from the Dunfermline Report for 1911 gives some indication of the scope of the clinic and the nature of the cases treated :

As many cases are in attendance while such a clinic is open, and the period of treatment for each case extends to something like half an hour on an average, liberal accommodation is required. The work is carried on in an old dwelling house, and four or five of the largest rooms are fitted up with the necessary apparatus for treatment. The clinic is liberally furnished with the necessary medical gymnastic apparatus of the Swedish type, sufficient to allow for the simultaneous treatment of twenty or more children. It is open for three afternoons weekly, and is in charge of a Swedish expert from Dr. Arvedson's Gymnastic Institute, Stockholm.

The following is an extract from Miss Holmblad's Report on the work of the remedial clinic for the past year :

Our patients have for the most part been children, both boys and girls suffering from spinal curvatures—scoliosis, kyphosis,



DUNFERMLINE ORTHOPÆDIC CLINIC.



lordosis—but we have also had cases of sciatica, rheumatism, flat-foot, constipation, etc.

The children come for treatment when school is over in the afternoon, and are kept from half an hour to one hour. No child is admitted without a recommendation from a medical man. Each child is carefully examined at the clinic. A table is made up containing a number of gymnastic exercises suitable for the special case. In each treatment these exercises are given to the patient, who is dressed in a loose, practical dress, with back stripped, if the spine is affected, so that the student shall be able to see the back and control the effect of the exercises performed.

About every three weeks the table is altered, according to the progress of the patient. It is made stronger, exercises are added, weak points are specially attended to. The students follow exactly the instructions given in the tables. Throughout the period of treatment examinations as to progress are frequently made.

The length of time the treatment takes naturally depends on the nature and the degree of the complaint. A fresh sprain may be cured by massage treatment in one or two weeks. Spinal curvatures, on the other hand, require many months, or, it may be, years to improve or correct.

The older children are given home exercises, so that the effect of the treatment in clinic may be kept up.

During the year 1911-1912 the following cases have been treated with remedial gymnastics :

Scoliosis	11
Kyphosis	20
Lordosis	8
With massage :	
Sprain	17
Flat-foot	11
Infantile paralysis	8
Weak digestive organs	1
Short hamstrings	1
Neuralgia	1
Miscellaneous	28
	<hr/> 106

The cases of sprain, neuralgia, short hamstrings, flat-foot, have all recovered.

The cases of infantile paralysis are greatly improved. The atrophied limbs have become stronger and firmer, and the muscular power in a marked degree greater.

The cases of scoliosis, kyphosis, lordosis, have all improved more or less, according to the degree of the affection.

Among the scoliosis cases have been some very bad specimens. In the case of the older girls who understand how to work keenly and energetically the results have been exceedingly good. When one realises the great trouble that may arise if, for example, a spinal curvature is left without corrective treatment, it is gratifying to notice that the beneficial effects of remedial gymnastics and massage treatment are more and more recog-

nised both by doctors and patients, so that the number of those who come for treatment is steadily increasing.

The patients are very happy in clinic, and the attendance has been most regular—an important factor in the good result of the treatment.

2. DEPTFORD ORTHOPÆDIC CLINIC

52. In Deptford Clinic a great amount of useful work is done in respiratory exercise after operations for adenoids. Post-operative cases and spinal curvatures form the bulk of the medical gymnastic work at Deptford.

The following extracts from the Deptford Clinic Report for 1912 explain the arrangements in use there :

Average of operations, sixteen on each day. Owing to the large number of cases on the books, two extra mornings, April 19 and July 5, had to be given up to the work. Operations are carried out on Saturday morning at 353, Evelyn Street.

After attendance at the clinic the date is fixed, and the parent is given printed instructions as to the preparation of the child and the date. In many cases we have found it advisable to get the children's ears syringed the day before the operation. After operation the children remain in the ward, which is fitted up with beds, until they have fully recovered from the first effects, when they are fetched by their parents—somewhere between two and four in the afternoon. In some cases last winter, where the home was very poor, without fire or food, the children have been kept overnight; and we have also had some children in such bad general condition that it was deemed dangerous to operate.

Ethyl-chloride has been used throughout, and we are quite satisfied with it as an anæsthetic in these cases. The Thursday following the operation the children attend at the clinic with their parents. After being seen by the doctor, Mr. North examines the teeth of those who have not already been under him, and appointments are made for treatment when necessary.

Miss Riddell then measures their chest capacity, and arranges for those children requiring breathing lessons to attend on three days a week at the medical home. The breathing lessons commence on the following Tuesday. Where the parents live at a distance from the medical home, Miss Riddell endeavours to arrange for one attendance a week or so with the parents, who are then instructed by Miss Riddell as to the exercises required.

At the end of three weeks or so the children are finally re-examined by the doctor, and discharged if the breathing habits are satisfactory.

These breathing lessons should be probably continued in most cases for six months; but it is really impracticable to keep the children longer than three or four weeks under Miss Riddell, while in a certain number of cases the bad habits of mouth-breathing are not to be broken down by any plan of physical exercises.

. . . In this great group of cases our method is to remove as



DUNFERMLINE ORTHOPEDIC CLINIC (TREATMENT OF SPINAL CURVATURES).



thoroughly as possible the adenoid vegetation and then guillotine the tonsils. In the majority of cases the result is most gratifying. In this connection the headmaster of one of the schools sending children to our clinic related the following history of one of his boys :

This boy was at one time the head of his class, but gradually seemed to lose his power of concentration, and became inattentive and lazy. (All marked features of the conditions of "aproxia" set up by nasal obstruction.)

The headmaster suspected nasal obstruction, sent him for operation, and within three months after the lad was again at the top of his class.

3. GYMNASTIC TREATMENT

53. Treatment is given by means of gymnastic movements applied to each patient individually. These movements are arranged for each case in the form of a "table" or "prescription." The principle underlying the compilation of this "table" is that certain of the exercises shall have a special or localised effect on the particular deformity to be treated, and that these shall be interspersed with exercises having a more general effect. The object of the latter is to improve the general physique at the same time as the deformity is being treated. This general-strengthening treatment is of equal importance with the special treatment. In practice the two are always combined. Breathing exercises are also freely interspersed throughout the "table." Reference to the illustrations facing pp. 98, 100, and 102 will give some idea of the variety of exercises in use in remedial gymnastic work. The treatment of each individual takes from ten to thirty minutes, occasionally forty-five minutes, depending on the nature of the case.

The treatment provided at this clinic is not of itself, in every case, sufficient to effect a cure. In many of the more pronounced deformities the patient is taught a series of "home" exercises, which he is expected to practise once or twice daily. These home exercises are of the greatest value in assisting treatment at the clinic. Their continued practice for a time after the deformity has been cured is important in preventing recurrence.

The duration of treatment varies greatly. In some of the simpler cases a few weeks' treatment may effect the necessary restoration to the normal. In other

cases many months' treatment may be needed before the desired results are obtained.

4. ACCOMMODATION FOR GYMNASTIC TREATMENT

54. In an orthopædic department such as exists at Dunfermline, liberal accommodation is required. This is due to the number of patients receiving treatment simultaneously. In a smaller clinic, where only one or two gymnasts are employed, there is not the same need for ample accommodation.

5. EQUIPMENT FOR GYMNASTIC TREATMENT

55. The equipment of an orthopædic clinic will depend on the number of gymnasts employed. The following equipment will be sufficient for the simultaneous treatment of two to three patients :

High plinth.	Table.
Low plinth.	Stools.
Boom.	Foot-stool.
Trapeze.	Forward-drawing-rope.
Rib-stool.	Rods.
Peg-post.	Cushion.
Poles.	

6. COLLECTIVE GYMNASTIC TREATMENT

56. It is hardly needful to say that the orthopædic clinic undertakes a most useful and highly desirable form of treatment. The value of gymnastic movement as a therapeutic agent has not received, in this country, the attention that it merits. In some countries, on the other hand, there has been a tendency to overrate somewhat the value of medical gymnastics. It can never be the case that medical gymnastics shall form the rational treatment for the majority of diseases. But for many ailments they form a more rational method of treatment than drugs.

But we are concerned mainly with conditions that are amenable only to gymnastic treatment. Experience has shown that there are large numbers of children affected with incipient deformities. For these, special exercises need to be given if the incipient deformities are to be checked in their progress, or cured. It would appear that such cases can be suitably dealt with in groups. Dr. George Rose, School Medical Officer,



DUNFERMLINE ORTHOPEDIC CLINIC (RESPIRATORY EXERCISES, ETC.).

١٢٣٤٥٦٧٨٩١٠١١١٢١٣١٤١٥١٦١٧١٨١٩٢٠٢١٢٢٢٣٢٤٢٥٢٦٢٧٢٨٢٩٣٠٣١٣٢٣٣٣٤٣٥٣٦٣٧٣٨٣٩٤٠٤١٤٢٤٣٤٤٤٥٤٦٤٧٤٨٤٩٥٠٥١٥٢٥٣٥٤٥٥٥٦٥٧٥٨٥٩٦٠٦١٦٢٦٣٦٤٦٥٦٦٦٧٦٨٦٩٧٠٧١٧٢٧٣٧٤٧٥٧٦٧٧٧٨٧٩٨٠٨١٨٢٨٣٨٤٨٥٨٦٨٧٨٨٨٩٩٠٩١٩٢٩٣٩٤٩٥٩٦٩٧٩٨٩٩١٠١١١٢١٣١٤١٥١٦١٧١٨١٩٢٠٢١٢٢٢٣٢٤٢٥٢٦٢٧٢٨٢٩٣٠٣١٣٢٣٣٣٤٣٥٣٦٣٧٣٨٣٩٤٠٤١٤٢٤٣٤٤٤٥٤٦٤٧٤٨٤٩٥٠٥١٥٢٥٣٥٤٥٥٥٦٥٧٥٨٥٩٦٠٦١٦٢٦٣٦٤٦٥٦٦٦٧٦٨٦٩٧٠٧١٧٢٧٣٧٤٧٥٧٦٧٧٧٨٧٩٨٠٨١٨٢٨٣٨٤٨٥٨٦٨٧٨٨٨٩٩٠٩١٩٢٩٣٩٤٩٥٩٦٩٧٩٨٩٩

Aberdeen, in his Annual Report for 1912 gives the following account of special classes in Aberdeen:

Classes at three centres—viz., Grammar, Central and Middle schools—were conducted during the year by the physical instructors of the Board. Sixty-three pupils received treatment. The classes met three times a week, and were for the prevention and possible cure of such defects and deformities as were discovered during the process of medical inspection. Children with flat and poorly developed chests, children who stooped badly, and those suffering from scoliosis or lateral curvature of the spine, were given treatment. The enthusiasm of the teachers for the work deserves praise.

There is a waiting list of forty pupils, and to overtake their treatment three more centres with suitable equipment, which would not cost over £25 per centre, are required. As suitable apparatus and skilled instructors are necessary, and as the treatment must be under medical direction, it is clinical work that should be taken up by the Board. To be effective, treatment has to be given early, as, after the various parts of the body have adjusted themselves to deformed conditions, treatment is of no avail.

While experience may show that such a method is successful in improving minor or incipient deformities, it cannot apply in the case of pronounced deformities. Here individual treatment will always be required. This fact rather strengthens the claim for collective treatment of incipient deformities. There is an inclination to look upon an incipient deformity as unimportant, and to pass it over. How many incipient deformities progress to the stage of obvious deformity we do not know. But when a deformity has become "obvious," it is much less amenable to treatment; treatment demands much more time, greater gymnastic skill, and greater cost, with less hope of cure. Indeed, it is doubtful whether education authorities can ever afford to give the necessary attention to the many children that are in need of skilled individual gymnastic treatment. At most, some of the larger authorities may appoint a medical gymnast to overtake as much work as possible. We are glad to know that this is being considered by several authorities. But such a method can hope to deal only with a few of the more serious cases. A comprehensive method of treatment would be to follow the principle of collective treatment in the earliest stages, and to confine the work of the clinic proper to the treatment of serious cases.

Collective treatment in incipient deformities, and also

individual treatment of marked deformity, are possibilities that lie within the powers of most education authorities. The medical gymnast is, in a sense, already in the schools. Practically all expert teachers of physical education have had training in the principles and practice of medical gymnastics. In several of the physical training colleges the instruction given in medical gymnastics is of a very high order. The students of these colleges should be quite competent to undertake, under medical supervision, a small amount of special treatment work, in addition to their routine duty as teachers of physical education. It seems a pity that throughout the length and breadth of the land such persons should be available and that so little demand for their services should be made.

E. OPERATIVE WORK

57. This branch of work calls for little comment. It is confined almost entirely to the removal of enlarged tonsils and adenoids. The following account, from the Annual Report for 1911 of the Chief Medical Officer of the Board of Education, of the arrangement at Norwood Clinic may be taken as typical of the methods generally employed :

In the aural department three surgeons and two anæsthetists each attend on one afternoon a week. Operations are performed on two afternoons. When appointments are made for operations, the parents are given printed instructions as to the preparation of the children, and also a form of consent to the operation, which they are required to sign and return on the day of the operation. Children attending for operation wait in the dental-room, which is used as a waiting-room on operating days, and after the operation they are sent to the recovery-room and placed in beds warmed with hot-water bottles. They remain in this room for some two or three hours until they have completely recovered from the effects of the operation, and they are seen by the doctor before being returned to their parents. All children are required to attend the clinic once after the operation has been performed. No special after-treatment is arranged for, but verbal instructions are given in regard to the practice of breathing exercises. If it is found that a child requires a more serious operation than the usual one for the removal of tonsils and adenoids, arrangements are made for admission to hospital.

In connection with post-operative respiratory treatment of adenoids, we quoted from the Deptford Clinic Report for 1912. This quotation (see p. 100) gives also the methods employed for operative treatment.



CORNER OF DUNFERMLINE ORTHOPÆDIC CLINIC.
104]



PART II

GENERAL REVIEW OF TREATMENT SCHEMES AND SCHOOL CLINICS NOW IN OPERATION IN BRITAIN

CHAPTER VII

TREATMENT SCHEMES AND SCHOOL CLINICS IN OPERATION

A. TABLES OF CENTRES

58. The accompanying tables give a list of the centres at which treatment schemes or school clinics are now in operation. It is probable, however, that, in consequence of the rapid growth of the movement, there are now many more clinics in operation than the tables show. But those given are sufficiently varied to afford full information on the more difficult aspects of the problem.

Reference to the latest Annual Report of the Chief Medical Officer of the Board of Education shows that there are twenty-eight school clinics that have received the sanction of the Board, but are not included in the returns collected by the League.¹

¹ Those returns were collected in June 1912.

106 SCHOOL CLINICS AT HOME AND ABROAD

SCHOOL CLINICS AND TREATMENT SCHEMES IN OPERATION

The date under the centre indicates the date of opening, except where the date is preceded by an "S" (thus S1912), when it indicates the date of sanction of the Board of Education.

A. ENGLAND

1. *Counties*

Name of centre	Diseases treated	Cost of equipment	Salaries paid to professional staff
		£ s. d.	£ s. d.
Cambridgeshire : Stapleton and Shelford (1911) .	Teeth	—	—
*Carnarvon (1911) .	Throat, eyes, ringworm, teeth		
Derbyshire : 1. Chesterfield (1911)	Ringworm (X-rays)	150 0 0	—
2. Claycross (1911) .	Throat, eyes (spectacles), teeth, skin diseases, etc.	63 0 0	—
*Dorset (1911) . .	Teeth	54 0 0	293 5 0
*Durham . . .	Eyes (spectacles)	—	300 0 0
*Flint (1910) . .	Eyes (spectacles)	15 0 0	—
*Isle of Ely . . .	—	—	—
Lancashire : Great Crosby (1911)	Teeth	50 0 0	—
Monmouthshire (1909)	Eyes	—	—
Sussex (West) (S1912)	Teeth	—	—
*Somersetshire (1909)	Eyes (spectacles)	50 0 0	350 0 0

2. *London*

*Blackfriars Dispensary (1910) . .	Teeth	—	—
Deptford (1910) .	Eyes, ears, nose, throat, teeth	211 0 0	838 0 0
Fulham (1912) . .	Teeth	—	—
Norwood (1910) .	Eyes, ears, nose, throat, ringworm (X-rays), teeth	—	—
Poplar Hospital (1908)	Teeth	—	—
Wandsworth (1910) .	Eyes, ears, nose, throat, ringworm (X-rays), teeth	—	—
Whitechapel (St. Cecilia's House) (1912)	Minor ailments, eye, nose, and throat defects	—	—
Woolwich (1907) .	Eyes, ears, nose and throat	26 0 0	—

* No regular clinic, treatment only.

3. County Boroughs

Name of centre	Diseases treated	Cost of equipment			Salaries paid to professional staff		
		£	s.	d.	£	s.	d.
*Bath . . .	Eyes (spectacles), verminous conditions	—	—	—	—	—	—
*Birmingham .	Eyes (spectacles), teeth	—	—	—	—	—	—
Bradford (1908) .	Eyes (spectacles), ears, nose, throat, ringworm (X-rays), other skin troubles, teeth (also a remedial clinic)	285	0	0	590	0	0
Brighton (1907) .	Eyes (spectacles), impetigo, ringworm (X-rays), teeth, other conditions (also a remedial clinic)	150	0	0	482	0	0
Cardiff (1911) . .	Eyes, teeth, skin conditions, etc.	170	0	0	380	0	0
Chester (1908) . .	Eyes (spectacles), teeth	—	—	—	—	—	—
Coventry (1911) .	Eyes (spectacles), ringworm (X-rays), teeth	200	0	0	637	0	0
Croydon . . .	Eyes (spectacles), skin, etc.	—	—	—	—	—	—
Grimsby (S1911) .	Ringworm, other skin conditions	—	—	—	—	—	—
**West Ham . . .	—	—	—	—	—	—	—
Halifax (S1910) .	Eyes, ears, ringworm, other skin conditions, etc.	—	—	—	—	—	—
Hastings (1911) .	Eyes, ears, skin, ringworm, etc.	—	—	—	—	—	—
Huddersfield (S1911) .	Eyes (spectacles), ears, skin, etc.	250	0	0	—	—	—
Merthyr Tydfil (1909)	Eyes, ears, ringworm, etc.	—	—	—	—	—	—
*Middlesbrough .	Minor ailments	—	—	—	—	—	—
Newport (Mon.) (S1911)	Eyes (spectacles), ears, ringworm, skin conditions	110	0	0	140	0	0
Northampton (1911) .	Ringworm, other skin conditions, verminous conditions	—	—	—	—	—	—
Norwich (1910) . .	Ringworm, teeth	73	0	0	250	0	0
Nottingham (S1910) .	Eyes (spectacles), ears, ringworm (X-rays), verminous and other conditions	418	12	6	260	0	0
Oldham (1910) . .	Eyes, ears, skin conditions, etc.	—	—	—	—	—	—

* No regular clinic, treatment only.

** Awaiting sanction of Board of Education.

108 SCHOOL CLINICS AT HOME AND ABROAD

Name of centre	Diseases treated	Cost of equipment	Salaries paid to professional staff
		£ s. d.	£ s. d.
*Plymouth (1912)	Eyes, ears, ringworm, etc., teeth (extractions only)	55 0 0	60 0 0
Reading (1909)	Eyes, ears, ringworm and other skin diseases, verminous conditions, teeth	—	—
Rochdale (S1911)	Eyes, ears, ringworm, verminous conditions, etc.	—	—
Sheffield (S1911)	Eyes (spectacles), ears, skin, ringworm (X-rays), teeth, tuberculosis	—	—
*Southampton	Eyes (spectacles), skin, nose, throat, teeth	—	—
Southport	Eyes (spectacles), skin and teeth	—	—
**South Shields	Ears, nose, throat, skin, teeth	—	420 0 0
Warrington (S1910)	Eyes, ears, ringworm, other skin conditions, teeth	40 0 0	84 0 0
**Wolverhampton	—	—	—
York (S1908)	Eyes, ears, ringworm, etc.	—	—

4. Boroughs

Aston-under-Lyne (S1910)	Eyes, ears, throat, skin	23 0 0	—
Batley (S1911)	Eyes, ringworm, skin diseases, verminous conditions	—	—
Bexhill (S1912)	Teeth	—	—
Brighouse (S1912)	Eyes, ears, pediculosis, ringworm, skin, etc.	—	—
Bromley (S1911)	Teeth	—	—
Cambridge (1907)	Teeth	40 0 0	300 0 0
Cheltenham (S1911)	Ringworm, minor ailments and verminous conditions	105 0 0	80 0 0
Chichester (1912)	Teeth	—	—
Ealing	Eyes, teeth	—	—
Folkestone (S1912)	Ringworm (after treatment by nurse)	—	—
Gillingham	Nose and throat, skin, teeth, etc.	70 0 0	135 0 0

* No regular clinic, treatment only.

** Awaiting sanction of Board of Education.

TREATMENT SCHEMES IN OPERATION 109

Name of centre	Diseases treated	Cost of equipment	Salaries paid to professional staff
		£ s. d.	£ s. d.
Godalming . . .	Eyes (spectacles), ear, nose, throat, skin, teeth	50 0 0	—
Guildford (1912) . . .	Eyes, nose, throat, ringworm, other skin diseases, teeth	95 0 0	216 0 0
East Ham (1911) . . .	Eyes (spectacles), ringworm, other skin diseases, teeth, etc.	100 0 0	—
Harrogate (S1912) . . .	Ringworm (X-rays) and teeth	—	—
Hove (S1911) . . .	Teeth	—	—
Luton (1910) . . .	Ears, skin, teeth	16 0 0	—
Morley (S1912) . . .	Eyes, ears, ringworm, etc.	—	—
New Windsor (S1912)	Teeth	—	—
Scarborough (S1912) .	Ears, ringworm, other skin diseases, etc.	—	—
*Southend-on-Sea (1911) . . .	Eyes (spectacles), nose, throat	—	—
Torquay (1911) . . .	Eyes, ringworm, other skin diseases, etc., teeth	105 0 0	150 0 0
Widnes (S1911) . . .	Eyes, ears, ringworm	50 0 0	—
Worthing (1910) . . .	Eyes, ears, ringworm, other skin complaints, teeth	211 0 0	160 0 0
*Yeovil	Eyes (spectacles), teeth	—	75 0 0

5. Urban Districts

Aberdare (S1911) . . .	Eyes, ears, pediculosis, ringworm, impetigo, etc.	—	—
Abertillery (1910) . . .	Eyes (spectacles), ears, skin, etc.	110 0 0	20 0 0
*Barking (1909) . . .	Eyes (spectacles), ears, nose, throat, skin diseases, teeth	—	—
Barry (1911) . . .	Eyes, ears, nose, throat, skin	—	—
Beckenham (S1912) . . .	Eyes, ears, skin, ringworm, teeth	—	—
**Enfield	Eyes (spectacles), ears, nose, throat, teeth, skin	—	—
Epping	Eyes (spectacles), teeth	—	—
Finchley (1911) . . .	Ringworm, teeth	—	—

* No regular clinic, treatment only.

** Awaiting sanction of Board of Education.

110 SCHOOL CLINICS AT HOME AND ABROAD

Name of centre	Diseases treated	Cost of equipment	Salaries paid to professional staff
		£ s. d.	£ s. d.
**Harrow . . .	—	—	—
Horsham I. (1911) .	Eyes, ears, nose, throat, teeth, skin	—	—
Horsham II. (1911) .	Teeth	—	—
*Ilford . . .	Eyes (spectacles), skin	—	—
Kettering (1910) .	Eyes (spectacles), teeth skin	48 0 0	115 0 0
**Shipley . . .	—	—	—
Sutton (Surrey) (1911)	Teeth	—	—
Tottenham (S1911) .	Eyes (spectacles), skin, etc.	15 0 0	60 0 0
Twickenham (S1910)	Eyes, ears, ringworm, skin, etc.	—	—
*Walthamstow . .	Eyes (spectacles)	—	100 0 0
Weybridge (1911) .	Teeth	23 0 0	—
Woodford (1910) .	Teeth	6 6 0	—

6. Rural Districts

Claygate (1911) .	Teeth	—	—
*Haslemere (1910) .	Teeth	—	—
*Hindhead and Shottermill (1910) .	Teeth	45 10 0	20 0 0
*Letchworth (1911) .	Teeth	—	20 0 0
Lingfield (1910) .	Teeth	—	—
Loughton and Buckhursthill (1910) .	Teeth	—	—
Midhurst (1911) .	Teeth	—	—
Newport (Essex) (1911)	Teeth	14 0 0	—
Stansted (1911) .	Teeth	—	3 3 0
*Stanton . . .	Teeth	—	—
*Welbeck . . .	Teeth	30 0 0	25 0 0

B. SCOTLAND

Aberdeen . . .	Teeth, deformities, etc.	—	—
Dundee . . .	Teeth, ringworm (X-rays), etc.	—	—
Edinburgh . . .	Teeth, eyes, ears, ringworm, etc.	—	—
Glasgow . . .	Teeth, eyes, ears, etc.	—	—
Govan . . .	Teeth, eyes, etc.	—	—
Dunfermline . . .	Teeth, eyes, ears, skin, deformities, etc.	—	—

* No regular clinic, treatment only.

** Awaiting sanction of Board of Education.

Again, it was found that information was obtained by the League from forty-four authorities in whose areas medical treatment schemes of one form or

another were in operation, but were not included in the list of school clinics sanctioned by the Board of Education. In all, therefore, it would appear that (including nine centres that received the sanction of the Board of Education since July 1912) there are, approximately, one hundred and eighteen centres in England where treatment schemes or school clinics are in operation.

Many of the local authorities state in their replies that there is "no clinic," but give details of less ambitious schemes with other titles, providing for the treatment of minor defects such as clinics would deal with. Thus *Carnarvon* County Council report the existence of a children's medical relief fund; the County Council of *Durham* deals with eye defects by appointing a school ophthalmic surgeon; the *Isle of Ely* sees that necessitous cases are treated at local hospitals; at *Middlesborough* the Medical Officer of Health attends to children whose parents cannot afford other medical attendance; at *Southend-on-Sea* the Education Committee has arranged for the treatment of certain defects, without actually establishing a clinic; at *Yeovil* private philanthropy on the part of a member of the Education Committee has provided dental treatment; at *Bath* treatment is carried out by a nurse under the school medical officer; at *Barking* the whole scheme is worked, under Section 130 Public Health Act, 1874, as an out-patient hospital; *Walthamstow* has only a rudimentary eye clinic; while many of the schemes now in operation in rural districts, excellent though they be, can scarcely be dignified by the name of clinic.

B. WHO PROVIDES THE CLINICS?

59. Inquiry was made as to whether the clinic was provided by the local authority or by private individuals. The following results were obtained:

(a) *County Authorities*.—The *Derbyshire* X-ray Clinic at Chesterfield, the *Flint* "Flying Eye Clinic," the *Lancashire* Dental Clinic (for four schools in and around Great Crosby), the five treatment centres established by local medical practitioners (one being at a dispensary) and the ten treatment centres at hospitals with which the London County Council has made arrangements, the *Monmouthshire* Eye

Clinic and the *Somersetshire* "eye centres" are all provided by the county authorities. The Children's Medical Relief Fund for *Carnarvonshire* is merely organised by the Education Committee; the Provident Club Clinic at Clay Cross receives from the *Derbyshire* Education Committee an annual grant of £1 1s. for every 100 children at the schools, the children themselves paying one penny per month subscription; for *Durham* a school ophthalmic surgeon has been appointed by the County Council; the education authority of the *Isle of Ely* gives a small annual grant to certain hospitals for the treatment of necessitous cases; while the *Dorsetshire* Travelling Dental Clinic, which was started by a gift of £300 from Miss Colfox, is supported by voluntary donations.

(b) *London Boroughs*.—Of the three clinics in London boroughs providing facilities for treatment, in addition to those of the London County Council, the eye clinic and the remedial clinic at *Woolwich* are departments of the local branch of the Invalid Children's Aid Association, and assuch are maintained by subscriptions and donations. This clinic must not be confused with the Woolwich Medical Treatment Centre provided by the London County Council. The income of the *Deptford* School Clinic was derived, as regards £670 out of the £1,461 received by Miss McMillan from August 29, 1911, to July 30, 1912, from subscriptions from five donors, and a group of co-operative women and others, the balance (£791 13s.) being a grant from the London County Council of £300 per annum plus 2s. per case for dental work, and the remaining £211 is the London County Council half-yearly grant for medical work. It also has the use, rent free, of the premises in which it is carried on. The *Poplar* Clinic was financed for two years by Mr. Joseph Fels, at the end of which time it was transferred to Deptford, and now exists no longer as a separate organisation. It paid a nominal rent of 1s. per annum to the London County Council.

(c) *County Boroughs*.—Among the county borough institutions, twenty are, or, when sanctioned, will be, entirely provided by the local authority¹; that at *Canterbury* is to be run by a provident club organised by the local health society; fourteen clinics in boroughs are now provided out of the rates,² although in the case of the *Cambridge* Dental Clinic the Corporation paid for inspection only, at the rate of £50 per annum, during the first eighteen months of its existence; the rest of the expense (about £300 per annum) was borne by Mr. Sedley Taylor. The dental clinic at *High Wycombe*, which, for want of funds, proved very short-lived, was financed by the local health society; the *Godalming* Medical and Dental Aid Society and the *Chichester* Dental Clinic are worked by voluntary contributions.

(d) *Urban Districts*.—Out of the fifteen institutions in urban districts nine are, or will be, provided wholly by the local authority. Church workers are responsible for the clinic at *Epping*; at *Horsham*

¹ Bradford, Brighton, Cardiff, Chester, Coventry, Croydon, Exeter, Huddersfield, Merthyr Tydfil, Newport (Mon.), Norwich, Nottingham, Oldham, Plymouth, Reading, Sheffield, South Shields, Southport, Warrington, Wolverhampton.

² Ashton-under-Lyne, Bromley, Cambridge, Cheltenham, Ealing, Gillingham, Guildford, East Ham, Luton, Margate, Southend-on-Sea, Torquay, Widnes, Worthing.

the expenses are defrayed by private subscriptions, supplemented by grants from the West Sussex Children's Care Association, which, in its turn, receives a grant of £50 per annum from the Education Committee; at *Sutton* (Surrey) the necessary equipment was given by two local residents, and the arrangements are made by the local Children's Care Committee, apparently under the general direction of the Sutton Education Committee. The *Weybridge* Dental Clinic is affiliated to the Provident Dispensary, while the *Woodford* Dental Treatment Centre is maintained by the payments of the parents, secretarial and other duties being carried out by the volunteers who started the scheme.

(e) *Rural Districts*.—It is, perhaps, not surprising to find that among the institutions in rural districts none is provided by the local authorities, although at *Claygate* (Surrey) the Education Committee allows the use of a room free of charge in which to carry on the work of the dental clinic. One of the school managers provided the initial equipment, and a dentist undertakes the work at a scale of very low fees. In connection with the *Hindhead and Shottermill* Dental Aid Committee, the Surrey Education Committee pays the inspection fees, the equipment and maintenance being derived from private subscriptions. The institutions at *Haslemere*, *Letchworth*, *Lingfield*, *Midhurst* and *Welbeck* are all philanthropic; that at *Newport* (Essex) is financed by Lady Meyer and at *Stanton* by Miss Wedgwood.

The *Dunfermline* School Clinic, the only one in Scotland of which details have been obtained, is maintained by the Carnegie Dunfermline Trust.

Commenting on the result in four years of recommendations to obtain treatment, the school medical officer of the *Surrey* County Council, in his Report for 1911, points out that—

Voluntary effort as at present organised has brought the proportion of cases satisfactorily treated in the whole county up to a moderate level—39 per cent. at best—and is not likely to do more with the means now available. In some districts, where clinics have been established or where good care committees are at work, the proportion of cases that have received treatment is very much higher than this, reaching 80 per cent. or more.

To summarise the facts set forth in the above paragraphs—out of the seventy-six centres from which information on this point has been obtained, fifty-one are provided entirely out of the rates, one receives a substantial subsidy, and five others slight assistance from the authorities either in the form of money grants or of free accommodation, while nineteen are wholly philanthropic organisations. The question of contributions from the parents is dealt with later on.

C. HOW AND WHY THE CLINICS WERE FORMED

60. In the majority of cases the clinics were started as the result of a scheme being drafted and its adoption recommended either by the medical officer of health or the school medical officer, or by the education committee. Application is then made to the Board of Education for sanction, the circumstances are investigated by the Board, and, as a rule, after a few months' delay the work is started.

At *Finchley* the sanction of the Board was not sought until all the dentists of the district had considered and approved the scheme prepared by the school medical officer. At *Barking* the work commenced by the medical officer of health treating a few cases in his office, and, as has been already stated, the whole scheme is now worked under Section 130 of the Public Health Act, 1874, as an out-patient hospital, patients being treated at any age. At *Guildford* the necessity for a school treatment clinic arose through the action taken by the local county hospital, the medical staff of which declined to treat "school" cases after the close of last year. It is interesting to note in this connection that the attitude of the medical profession in the neighbourhood is now reported as being friendly to the clinic. The voluntary clinic at *Letchworth* was started by opening a subscription list, and a certain number of interested inhabitants were invited to become guarantors, should the amount required for the first year's work (£25) not be fully subscribed. At *Dunfermline* school medical inspection had been carried on by the Carnegie Dunfermline Trust since 1905. The facts brought to light as the result of that inspection convinced the trustees that something was also required in the way of treatment. The medical officer to the Trust at that date, Dr. Bridge, presented a report to the trustees on existing school clinics, and after conference with local medical men it was decided to open a clinic by way of experiment. Success has now established it as a permanent institution.

The West Sussex Children's Care Association is responsible for starting dental clinics at *Midhurst*, *Chichester* and *Horsham*, in addition to providing treatment for a few children who were precluded from

attending school owing to tuberculosis ; it also supplies spectacles for necessitous cases.

The existing schemes for the county of *Dorset*, at *Brighton*, *Cambridge*, *Godalming*, *Sutton*, *Woodford* and *Stansted* were financed at first by private individuals, while those at *Stanton* and *Newport* (Essex) still owe their existence to private philanthropy.

D. DATES OF ESTABLISHMENT

61. No school clinic in this country is over six years of age. *Brighton*, *Cambridge* and *Woolwich* (I.C.A.A.) were pioneers in 1907. *Bradford*, *Chester* and *Poplar* followed in 1908. *Bradford* and *York* (sanctioned in 1908) were the first to receive the sanction of the Board of Education. *Brighton*, *Cambridge* and *Reading* were sanctioned in 1909. In 1909 the counties of *Somerset* and *Monmouth* commenced their work of attending to the eyes of their scholars, and *Merthyr Tydfil*, *Reading* and *Barking* also started that year, but in the case of *Barking* the centre was re-organised in October 1911. During 1910 sixteen more were in full swing, being those at *Abertillery* (which had been sanctioned the year before), *Deptford*, *Dunfermline*, *Luton*, *Worthing*, *Oldham*, *Kettering*, *Flint*, *Norwich*, *Ashton-under-Lyne*, *Torquay*, *Woodford*, *Haslemere*, *Hindhead*, *Lingfield* and *Loughton*. In 1911 no fewer than twenty-three were started in various districts, and six more commenced operations up to June 1912, when replies to the League's inquiries ceased to come in.

The date of establishment of the majority of the treatment schemes now at work will be found in the tables on p. 106 *et seq.*

E. SANCTION OF BOARD OF EDUCATION

62. The conditions that the Board of Education takes into consideration in giving its sanction to schemes of treatment or school clinics have already been summarised (see p. 31).

According to the latest Annual Report of the Chief Medical Officer at least seventy-two school clinics have received the sanction of the Board ; and at the close of

the school year (July 1912) several others were awaiting sanction.

Apparently only one rural clinic, that of Shottermill and Hindhead, has received the sanction of the Board. The clinics already sanctioned by the Board of Education will be found on reference to tables on p. 106 *et seq.*

F. NUMBER OF SCHOOLS AND SCHOLARS AFFECTED

63. The number of elementary schools in the area served by the clinic was not stated in every case, but out of the 84 replies that have been classified, 51 reported that 638,335 children attending 1,855 schools were covered by the treatment provided. Considering that there were, on July 31, 1910, 20,762 ordinary public elementary schools recognised by the Board of Education in England and Wales alone, with accommodation for 7,035,218 children,¹ it would appear as if only 9 per cent. of the scholars are at present in a position to benefit directly by medical inspection.

Among the county institutions, *Somerset* heads the list, for its 31 "eye centres" are responsible for 50,354 children attending 501 elementary schools. The *Monmouthshire* Eye Clinic follows closely, with 48,164 children and 184 schools.

The three county boroughs with clinics covering the largest number of schools and scholars are those of *Sheffield* (104 schools, 75,699 scholars), *Bradford* (88 schools, 44,079 scholars) and *Nottingham* (71 schools, 34,847 scholars). Others affecting over 20,000 children each are those at *Croydon*, with 33 schools, *Norwich*, with 36 schools, *Oldham*, with 37 schools, *East Ham*, with 23 schools, and *Tottenham*, with 21 schools.

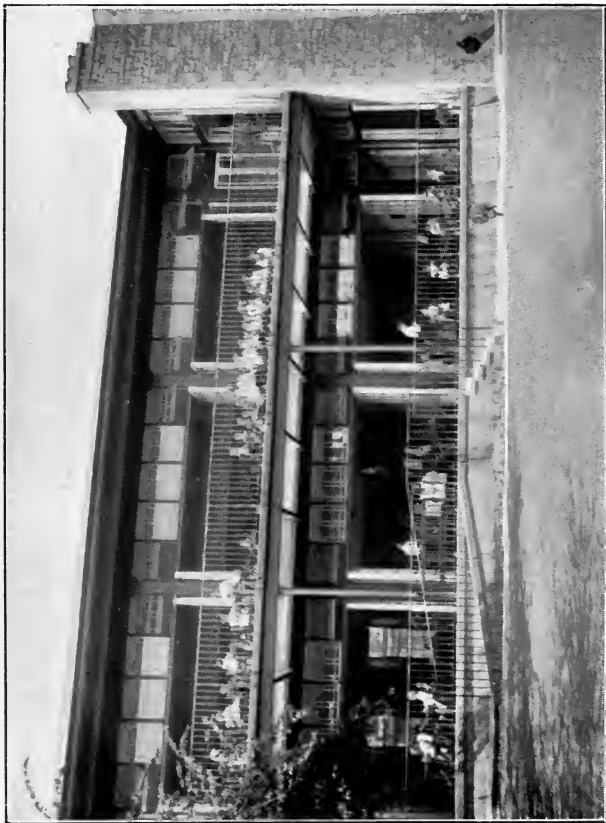
G. BRANCHES OF WORK UNDERTAKEN

64. A glance at tables on p. 106 *et seq.* will show the nature of the work undertaken by the various centres.

I. DENTISTRY

Dental disease is receiving more attention than any other.

¹ "Statistics of Public Education in England and Wales," Part I. 1909-10 (cd. 5843), p. 15.



EDINBURGH—DUNCAN STREET SPECIAL SCHOOL.



Of the dental clinics actually at work, eleven are in rural districts, and undertake no other class of treatment. Similarly, the clinic of the *Dorset* County Council and that at *Great Crosby* (maintained by the Lancashire County Council) are for dental defects only, as also those at *Norwich*, *Cambridge*, *Sutton*, *Weybridge* and *Woodford*. At *Birmingham* a scheme was worked for some time, under which dental treatment was given by the staff of the dental hospital; but when the initial donation for this purpose was exhausted, the scheme was abandoned. Now, however, the matter has been put on a firmer basis, and five dental surgeons, at salaries totalling £1,100, are now at work. At the *Woolwich* Clinic, run by the local branch of the Invalid Children's Aid Association, many children had been treated since 1902 by the honorary dentist of the Association. In July, 1910, however, this was stopped, in consequence of a resolution passed by the British Dental Association, condemning honorary treatment for school children, on the ground that such unpaid work was unfair to dentists, and unsatisfactory from the point of view of the needs of the children, as only a small proportion of the necessary work could be done on such terms, and the generosity of individual dentists in giving their services only tended to postpone the making of adequate arrangements. The dental work was ultimately resumed, when the necessary money had been secured from private sources.

2. EYE—CORRECTION OF VISUAL DEFECTS

No fewer than forty-nine centres now make provision for estimation of errors of refraction, and at least thirty-eight of these either supply or assist in the supply of spectacles to necessitous children.

The "flying clinic" set up by the *Flint* County Council, and those worked by the County Councils of *Monmouthshire*¹ and *Somersetshire* are exclusively for

¹ An extension of the present scheme was approved, in principle, by the County Education Committee in September, 1912. Under the new scheme fifteen clinics would be established in different parts of the county, with headquarters at Newport; and it is estimated that the capital cost would be £11,000, with £2,000 a year for maintenance. The staff would then include a whole-time ophthalmic assistant, two whole-time dentists and four nurses.

eye cases. The work of the ophthalmic surgeon appointed by the *Durham* County Council has also been reckoned as that of a travelling eye clinic. *Merthyr Tydfil* is an eye clinic only,¹ while at *Walthamstow* the same applies, except that re-examinations of excluded children are also carried out. In the cases of *Dunfermline* and *Woolwich*, which attend to refractions and give prescriptions, the spectacles are supplied respectively by the Civic Guild and by the Association for the Supply of Spectacles. *Cheltenham's* Minor Clinic and Cleansing Station makes arrangements elsewhere for eye examinations.

3. SKIN DISEASES

Skin diseases are treated at forty-eight centres, one of the two under the Derbyshire County Council (the clinic at Chesterfield) being only for the X-ray treatment of ringworm. The X-ray apparatus has been installed in about twelve clinics,² although several are considering its introduction and others are awaiting sanction. At *Finchley* an X-ray expert happens to live in the district, and is accessible to all the schools. Children requiring this treatment are therefore sent to his private house, where the apparatus is installed. The following hospital scheme for treating ringworm by X-rays was submitted by the *Exeter* Education Committee to the Board of Education and sanctioned in 1910. A payment not to exceed 100 guineas up to the end of the educational year, July 31, 1911, was to be made to the Royal Devon and Exeter Hospital at the rate of £1 1s. for each case. All children that were found to have ringworm were to be excluded from school attendance and not to be allowed to return to school until certified cured by the school medical officer after a microscopic examination and the presence of a growth of healthy hair. All cases were to be recommended for treatment by the school medical officer. Repayment

¹ A full general clinic, including the X-ray treatment of ringworm, as an extension of the above, was opened early in September 1912.

² Barry, Bradford, Brighton, Chesterfield, Coventry, Derby, Harrogate, Merthyr Tydfil, Nottingham, Sheffield, Wandsworth

was to be obtained from the parents according to their means. Seventy-seven cases were sent to hospital under the scheme, with the following results: Cured, 63; refused to complete treatment, 6; left the neighbourhood, 3; remaining under treatment, 5. Inquiries were made into the circumstances of the parents in each case, and the Hygiene Sub-Committee decided what payment, if any, should be demanded. In all, £9. os. 6*d.* was recovered from the parents, and in only one case was any difficulty experienced in collecting the amount.¹ In the clinic for which arrangements are now being made at Exeter, the X-ray treatment of ringworm is contemplated.

X-ray treatment is also available at Croydon, Guildford and Ilford.

4. TONSILS AND ADENOIDS

Tonsils and adenoids are treated at sixteen centres. Where treatment is not undertaken in the school clinic, arrangements are made with the local hospital.

5. REMEDIAL EXERCISES

Remedial exercises for deformities of the spine and for the effects of adenoids are carried out at Bradford, Brighton, Deptford, Dunfermline and Woolwich. The Dunfermline School Clinic possesses an exceptionally complete remedial exercises department.

6. STAMMERING, ETC.

Bradford undertakes to treat stammering, while at Abertillery, Sheffield and Woolwich help is given in tuberculous cases.

7. MINOR AILMENTS

The majority of school clinics undertake the treatment of minor accidents, septic sores, discharging ears, inflamed eyes, etc.

¹ See Annual Report of the School Medical Officer for Exeter, 1911, p. 33.

H. WHEN THE CLINICS ARE OPEN

65. With the exception of about six clinics that do all their work after school hours or on Saturdays, practically all clinics carry on their work of treatment during school hours, although many of them continue their work beyond school hours.

The following sixteen clinics are open either for the whole or part of every week-day: *Coventry*, *Norwich*, *Nottingham*, *Torquay*, *Kettering* (the hours were not specified for these), *Woolwich* (9 to 7 for the general clinic, one afternoon only for eyes and three half-days for the remedial clinic), *Sheffield* (9 to 5; Saturdays, 9.30 to 12), *Dunfermline* (9 to 11 and 4 to 6; Saturdays, 9 to 11), *Newport* (Mon.) (9 to 12 and 4 to 5, or longer, if necessary), *Barking* (8.15 to 12), *Oldham* (2 to 5), *Brighton* (2 to 4; Saturdays, 9 to 12), *Reading* (9 to 10), *Ilford* (9 to 10), *Chester* (10 to 11). *Bradford* is open every day but Fridays, two whole days a week being devoted to eye cases, two half-days to general work, one afternoon to ear cases, one morning to re-admissions, three whole days and Saturday mornings to dental cases, while X-ray cases are treated any day by appointment. *Deptford* is open every day but Fridays (although the nurse is in attendance daily from 9.15 to 7), the doctors being present from 9.15 to 12 three days a week; from 2 to 4 (for infant consultations, children under five, and examination of children after operation) one day a week, and from 9.15 on Saturdays for operations. The dentist is present every day from 9 to 12 and from 2 to 4.30, and the teacher of remedial exercises from 11 to 12 and from 3 to 6. *Cardiff* is open two afternoons a week each for eyes and teeth and one afternoon for X-ray treatment. *Croydon* is open four mornings a week, and *Warrington* four afternoons, although special cases are dealt with daily, if necessary. Four clinics are open three times a week, and four more twice a week; while there are five open once a week and four (dental) are open only on Saturdays. At *Epping* the doctor or dentist attends when required, and at *Haslemere* the clinic is "open at suitable times, not including school hours."

CHAPTER VIII

ATTITUDE OF DOCTORS AND PARENTS

A. ATTITUDE OF DOCTORS

66. Out of forty-three replies received to the inquiry on this point, thirty state that the attitude is "favourable," "satisfactory," or "sympathetic." Seven others describe the attitude as "neutral," or state that no objection or complaint has been received, and three report hostility.

The favourable attitude of the profession towards the *Abertillery* Clinic is accounted for by the fact that all the local doctors are attached to colliery clubs, and there is but little private practice. In consequence, the clinic does not compete with local doctors, but rather takes cases off their hands. There is, moreover, no hospital for operations or for eye or ear work within eighteen miles by rail.

The *Dunfermline* Clinic was opened on the understanding that all cases requiring medical treatment should, in the first instance, be sent to the family doctor. If he is satisfied that the case is a suitable one, he sends the child to the clinic, and if he cares he can prescribe the treatment. This arrangement is reported as having worked very well. Many trifling conditions are not sent to the doctors first.

At *Bradford* the profession was at first opposed, but is now considered friendly.

The *Cheltenham* reply states that there is no objection on the part of the medical profession, the work done being such as would not be remunerative to the profession, and the greater part of it would, in fact, not be done at all, if private practice were relied on. The same reply, in effect, is given by *Luton* and *Nottingham*. Similarly, at *Widnes* no hostility is reported, because

care is taken not to interfere with the patients of the various medical men in the borough.

At *Brighton* the position of affairs is at present found satisfactory; the local branch of the British Medical Association, however, opposes any further treatment by school medical officers, and wishes the work to be taken over by local practitioners.

At *Newport* (Mon.) the Committee decided to work the scheme only through their whole-time medical staff, and met, in consequence, with opposition from the British Medical Association.

At *Godalming* dental work has practically had to be abandoned, because of the prohibitive charges for anæsthetising insisted on by the local branch of the British Medical Association. At *Southend-on-Sea*, on the other hand, the scheme has met with the entire approval of the local division of the British Medical Association. Doctors were hostile to the clinic at *Barking*, but are less so since the medical officer of health has arranged to supply them every week with a list of the new cases treated during the week. Only once has an objection been raised during the last five months. At *Harrow* the alleged opposition of the profession has delayed the establishment of the proposed clinic.

B. ATTITUDE OF PARENTS

67. There can be little doubt as to the attitude of the parents towards the clinics, for out of forty-two replies received on this point *Kettering* reports that the parents are "somewhat indifferent, but improving," *Hindhead* "rather half-hearted, but now beginning to realise its importance," and all the others state that the attitude is "favourable," "satisfactory," "appreciative," "grateful," or "enthusiastic." At *Worthing*, where the feeling is said to be "generally appreciative," the few objections that have been raised by the parents are attributed to the charges made for dental treatment.

CHAPTER IX

THE STAFF OF THE SCHOOL CLINIC

68. BELOW will be found an account of the medical and dental staff employed in the various school clinics. A word may be said here on the question of the relative advantages of whole-time and part-time officers. As this matter affects only doctors and dentists, and not the nursing staff, nurses will not be considered.

A. WHOLE-TIME OR PART-TIME STAFF?

69. There are certain circumstances in which the question of whole-time appointments does not arise, since the work is not sufficient to keep a whole-time officer occupied. We leave such cases alone for the present. Discussing the question of dental appointments, Sir George Newman, in his Annual Report for 1910 writes :

The question as to the appointment of dentists for the whole or part-time will depend on the circumstances of the area and the availability and suitability of part-time dentists for work of this kind. In selecting dental officers it should be remembered that much tact and patience with mothers, as well as with the children, is required. In urban areas, if the right man can be found, many advantages follow the appointment of a whole-time officer. It is usually more easy to arrange with a whole-time dentist for carrying out work of a preventive nature—*e.g.*, routine and special inspection, the delivery of lectures or talks to teachers, parents and children, as may seem desirable, original work, inquiries and investigations, etc. Whatever arrangement is made, however, in this respect, it is convenient, unless the area be a very large one, that inspection in the schools should be carried out by one dentist only, in order to avoid any undue multiplication of officers in the schools themselves. In county areas, whether whole-time or part-time officers are employed, it will probably be found necessary to establish suitable centres for treatment. Much will necessarily depend on the possibility of arranging such centres for treatment and the convenient distribution of qualified dentists in the more rural areas. Should arrangements for treatment be made with part-time dentists, it will be found to be preferable, as a rule, to arrange for a centre elsewhere

than at the dentist's private surgery. In some districts this may not prove feasible, or may not be considered necessary; but wherever centres for treatment can be provided, this should be done.

Where a district is sufficiently large to give full-time employment to a dentist, the facts stated in the above quotation present a strong plea for the whole-time officer. In rural districts the difficulties to be overcome are considerable. Part-time dentists would no doubt be preferable if they could be obtained, but they are not always available.

It might be possible to employ a whole-time dentist for a county and institute a number of special centres as dental clinics, which the itinerant dentist would visit at regular intervals.

In regard to the medical staff of the school clinic, the British Medical Association has strongly opposed treatment by whole-time officers.

Dr. Duncan Forbes, School Medical Officer, Brighton, in his Annual Report for 1912, advising his authority on the question of whole-time or part-time officers for medical inspection and treatment, says that medical inspection—

Is a field of work that requires years of patient study by any doctor who hopes to become thoroughly efficient. The problems connected with the backward and mentally defective, the tuberculous, the deformed, in relation to elementary school life, can only be solved by an experienced worker.

Not only has the school doctor to advise his committee, he has also to give advice to the parents of children requiring treatment, and he has to re-inspect the children, after treatment. It seems almost absurd to ask the question as to whether a doctor who personally treats a proportion of the children, or a doctor who does no treatment at all, will be in the better position to advise the parents as to treatment and repetitions of treatment. To be an efficient inspector it is necessary to be expert in the diagnosis and treatment of common defects, regarding which it is the duty of the inspector to report and advise.

Continuing the discussion, Dr. Forbes says that by increasing the medical inspector's salary, by relieving him of part of routine medical inspection, and by making him responsible for all medical treatment, better men would be induced to enter and remain in the school medical service. He adds:

Unfortunately, the importance of retaining the services of medical inspectors over a long series of years is not fully recognised by the public because they do not recognise the importance of inspection;



EDINBURGH—WILLOWBRAE SPECIAL SCHOOL ("OPEN-AIR" CLASS-ROOM).



whilst, on the contrary, treatment bulks largely in the mind of the layman. It is, therefore, only by undertaking treatment that the medical inspector can increase his salary sufficiently to allow of his continuing in the school service ; and, secondly, can have assistance in his work, thereby halving the monotonous routine inspection.

Advantageous as his undertaking of treatment is from the medical inspector's point of view, it is no less so from the standpoint of the parents and the local authority ; for, with his salary increased and monotony gone, the medical inspector will be content to continue for many years to perfect himself in this branch of work. Whilst doing so, he will become more and more valuable to the local authority. Under such circumstances more efficient services can be established than by any system of part-time service.

There are many that prefer the employment of part-time dentists and doctors. It is believed, that by the employment of part-time officers, senior and experienced men might be got to do the work better and more expeditiously, and in the end prove more efficient and economical.

Moreover, although whole-time inspectors may be generally more satisfactory than part-time inspectors, the same may not hold good for treatment. School medical inspection affords almost unlimited experience in the diagnosis of children's diseases, and cannot be said to be an unduly restricted experience for the competent inspector. With treatment the case is different. The experience of treatment that a school clinic affords is necessarily very restricted. The whole-time medical officer would thus have a more limited experience of treatment than of inspection. This limitation of experience would be a disadvantage, and deprive the school clinic of much that the part-time officer with wider experience of treatment could bring into it.

Another point that has been brought up in favour of part-time officers is the importance of increasing the interest of people generally, and of doctors in particular, in educational hygiene. Therefore, the more medical men that can be brought directly into touch with such a movement (without unduly complicating the organisation), the better.

B. STAFF ALREADY EMPLOYED

70. The staff of a fully equipped school clinic usually consists of one or more whole-time or part-time doctors, oculists and dentists, one or more health visitors or

nurses, and in three instances (*Dunfermline*, *Deptford* and *Woolwich*) there is also a professional teacher of remedial physical exercises, *Woolwich* having a voluntary teacher as well as a professional. *Bradford* has three doctors, one dentist and two nurses; *Dunfermline* four doctors, one part-time dentist and two nurses, with the above-mentioned teacher for remedial work; *Coventry* three part-time doctors (giving about a half-day each per week), one whole-time dentist and three whole-time nurses. The work of *Nottingham's* two clinics is carried out by two medical inspectors and two health visitors every morning, with an ophthalmic surgeon in attendance as required. *Sheffield* has no fewer than three whole-time and seven part-time doctors, one dentist and seven nurses. *Worthing* finds it at present sufficient to employ the school medical officer, an oculist and a dentist, the two latter attending only one half-day a week, and one school nurse attending four half-days a week. At *Widnes* and *Croydon* the medical officer of health, school medical officer and school nurse or nurses do all that is necessary, and at *Chester* the medical officer of health and his assistant, two dentists (giving two hours two days a week each) and a half-time nurse suffice. The staff at *Barking* consists of the medical officer of health (who attends daily for one to two hours), and two nurses from a local nursing society, and at *Kettering* the school medical officer attends one morning a week for two hours, an ophthalmic surgeon gives one hour once a week, and there are two whole-time nurses. The *Abertillery* Clinic is run by one doctor and one school nurse, attending three half-days a week, although latterly the nurse attends instead for one hour every morning. At *Ashton-under-Lyne* the work is done by the medical officer of health, who is also school medical officer, and the school nurse. The *Cambridge* Dental Clinic has one dentist and one attendant, who acts as clerk. Two doctors attend at *Torquay* one afternoon a week each, two dentists one morning a week each, and one nurse attends daily.

The *Woolwich* Invalid Children's Aid Association Clinic has two part-time doctors for eye and remedial work and eleven on the honorary medical staff of the Society. There was also an honorary dentist, until his

work was stopped by the resolution passed by the British Dental Association. Nursing help is secured by co-operation with the local nursing association. The other voluntary clinic in a metropolitan borough, that at *Deptford*, employs three part-time doctors, one whole-time dentist, one nurse and one teacher of remedial exercises.

Durham and *Somerset* each have a whole-time oculist and *Dorset* a whole-time dentist. No extra staff is employed for the "flying eye clinic" for *Flint*, since the work is carried out by the school medical officer to the county. Similarly, the assistant medical inspectors do all that is required for the *Monmouthshire* Education Committee's eye clinic.

Nineteen clinics report that, in addition to the members of the medical profession and the health visitors or nurses, the work has necessitated the appointment of extra clerks and care-takers, although in many other cases the existing staff for medical inspection and similar work has not been increased. At *Deptford*, where the garden of the clinic is now used to provide open-air sleeping accommodation, more especially for girls suffering from debility and anæmia, and as an open-air day school, a camp master and girls' camp night guardian are also employed.

The staff is appointed, in twenty-four of the rate-supported clinics, by the local education committee, jointly by that authority and the town council at *Cheltenham* and by the town council only at *Cambridge* and *Widnes*. Six of the clinics run by voluntary organisations appoint the staff through the committee. In the case of *Godalming*, the local medical society appoints two of its number every six months for tonsils, adenoids, suppurating ears and ringworm. Several of the small dental clinics in *Sussex* leave the appointment of the dentist to the West Sussex Children's Care Association, and his work is then controlled by a local sub-committee. At *Letchworth*, where the clinic owes its origin to the local District and School Nursing Association, the staff is appointed and controlled by a special sub-committee, which includes among its members a school manager, the head teacher of a council school, and a parent of a child attending one of the schools. At *Sutton* (Surrey) the arrange-

ments are made by the local Children's Care Committee.

An inquiry as to the relations of the school medical officer to the controlling body and to the staff showed that, in practically every case in which this question was answered, that officer, who is frequently also the medical officer of health, supervises all the clinic work. At *Worthing*, for instance, the school medical officer supervises the whole of the work of the clinic, and is responsible to the Medical Inspection of Children Sub-Committee for its efficiency. The members of the staff attend meetings of the Committee as required. At *Dunfermline* the local school board has delegated its duties in respect of medical inspection to the Carnegie Dunfermline Trust. Four medical officers, one part-time dentist, and two nurses appointed by the trustees undertake all the treatment.

C. VOLUNTARY WORKERS

71. Very few of the clinics, except those in rural districts, obtain any voluntary assistance in their work. Thus at *Midhurst* a special dental sub-committee of that branch of the West Sussex Children's Care Association controls the working of the clinic, and at *Horsham*, where there is also a branch of the same Association, the thirty members of the Sub-Committee work the clinic themselves and arrange that some of their number shall attend on the Saturdays when the clinic is open. At *Hindhead* and *Guildford* the school managers help, and at *Haslemere* the honorary secretary and other members of the Dental Aid Society. At *Letchworth* the honorary secretary of the School Nursing Association deals with the "following up" after the medical inspections. There are two volunteers at *Woodford*, fifteen ladies on the School Care Committee of *Yeovil* help there, while at *Worthing* there is one lady almoner, and the school attendance officers also assist in the collection of particulars and payments in respect of cases attending the clinic for treatment. A children's care committee was in course of formation at *Torquay*, and the visiting of the homes affected by the *Godalming* Clinic

is voluntarily undertaken by a Sub-Committee of the Medical and Dental Aid Society. At *Bath* a voluntary care committee fills up spectacle forms and collects the parents' payments, while *Coventry* has assistance from about forty members of five district care committees. The *Woolwich* Invalid Children's Aid Association Clinic has an army of fifty volunteers, two of whom give all their time to the work; numerous visitors are obtained for *Dunfermline* through the local civic guild. In connection with the *Dorsetshire* Travelling Dental Clinic, it is the head teachers who make the arrangements and collect the fees.

CHAPTER X

ACCOMMODATION AND EQUIPMENT

A. ACCOMMODATION

72. THERE is great variety reported in the housing of the clinic. Thus nineteen are carried on, or will be, when sanctioned, in municipal offices, either in the department of the health or of the education committee or in their joint offices. At *Cardiff* the basement of the municipal offices is used, and at *Nottingham* one clinic is in the offices of the local authority and a second in another building. Similarly, the *Warrington*, *Derbyshire*, *Southend* and *Hindhead* Clinics do their work from two centres. All or part of the treatment is carried on in school premises in sixteen cases. At *Loughton* the teachers' common room is requisitioned for the purpose; at *Sutton* a room at an old pupil teachers' centre is used; at *Oldham* the building was formerly used as an industrial school, and at *Coventry* a disused non-provided school is now used for the clinic. The *Dorsetshire* Travelling Dental Clinic is held at each school in turn, and a class-room is usually set apart for the dentist. Gas cases are taken on Saturdays at some convenient central school. For the *Flint* "Flying Eye Clinic" a special dark-room has been provided in one populous district, and in others a small room in the school answers the purpose. The dental work is carried out in seven instances at the dentist's own house. Among the other buildings which have been pressed into the service of the clinics may be mentioned the six corporation flats (with fifteen rooms) used for the *Sheffield* institution, the local technical institute at *Godalming*, private nursing homes at *Guildford* and *Southend* (in the latter for tonsils and adenoids only), an old town hall at *Barking*, a church room at *Epping*, a room in the Co-opera-



CHILDREN'S VILLAGE, HUMBLE, BELONGING TO EDINEURGH CHILDREN'S
HOLIDAY FUND.

THE
MUSEUM
OF
THE
MUSEUM

tive Society's store at *Hindhead*, where part of the work is also done at a school, and a farmhouse at *Newport* (Essex). At *Great Crosby* (Lancashire) and *Stansted* rooms in school caretaker's houses are used. At *Stanton* a lady's drawing-room is used for operations, and her garden acts as a waiting-room. At *Barry* adenoids, etc., and X-ray treatment are dealt with at a hospital, while the ophthalmic work is carried on in a school.

In forty-six cases information has been supplied as to the number of rooms available for the purposes of the clinic.

10	have	1	room only.
11	„	2	rooms.
10	„	3	„
7	„	4	„
2	„	5	„
1	has	8	„ (including a bathroom) ¹ .
1	„	9	„ (and waiting accommodation). ²
1	„	10	„ (partial use only of some). ³
1	„	15	„ ⁴ .

At *Nottingham* there are twelve rooms in all for the two clinics at work. At *Abertillery*, where the clinic is held in the council offices, the hall is used as a waiting-room, and the medical officer of health's room is used in addition to two others. The thirty-one *Somersetshire* "eye centres" are held in two rooms at each school.

Bradford's clinic is the only one at which provision is made for isolation, although there is a room which could be used for the purpose, if necessary, at *Oldham*, and *Worthing* has a double waiting-room with a means of exit other than through the waiting-room. *Gillingham*, when sanctioned, will have made adequate provision for isolation.

Operations, other than dental, are not carried out at the clinics themselves, except in the case of *Deptford*, which has its own little medical home for the purpose, at which 697 operations for adenoids and tonsils and four for other conditions were carried out in 1911-12. Operations for adenoids are, however, done at the *Barking* and *Guildford* Clinics.

¹ Huddersfield.

² Bradford.

³ Dunfermline.

⁴ Sheffield.

B. EQUIPMENT

73. In Chapter VI., under the respective departments of the school clinic, an indication is given of the equipment necessary for each.

The following is a summary of the facts furnished by our inquiry under this head:

With very few exceptions, the replies under this head were of too general a nature to afford much information, reference being made in most cases to "a small stock of the usual drugs and dressings," "a full dental and refraction equipment," etc. The following list of dressings, instruments, lotions, ointments, etc., stocked at the *Dunfermline* General School Clinic, may prove useful:

Dressings.—White absorbent wool, white gauze, iodoform gauze, cyanide gauze, picric gauze, surgeons' lint, boracic lint, spread boracic lint, sterile gauze (for packing), bandages, safety-pins, sterile white paper.

Instruments.—Spencer Well's artery forceps, dissecting forceps, epilation forceps, nasal forceps, scissors (large, straight), scissors (large, curved), scissors (small, curved), scissors (dressing), laryngoscope, aural speculum, nasal speculum, Politzer's bag, insufflator, razor, probes, scalpels, hair-cutters, glass syringes, metal syringes, glass nozzles (pointed), spatula, steel comb.

Lotions.—Boracic, biniodide 1-2000, carbolic 1-20, perchloride of mercury, hydrogen peroxide, lysol, methylated spirits, rectified spirits, picric acid sol. 1-200, spirits of turpentine, lead lotion, soap spirit, pure glycerine, tincture iodine, liniment of iodine, flex. collodium, styptic collodium, salicylic collodium 1-8, spirit drops (for ears), copper sulphate, liq. ammon. fort., sal volatile, pure carbolic acid, formalin.

Lotions and Ointments for Eyes.—Sol. argyrol 10 per cent., silver nitrate 1 per cent., zinc sulph. 5 per cent., atropine, homatropine, eserine, fluorescin, sol. cocain. hyd. 2 per cent., irrigator, ung. hyd. oxid. flav. 2 per cent., ung. atropin. 1 per cent., hydarg. perchlor. 1-5000.

Ointments.—Vaseline, lanoline, boracic 1-10, zinc, hydr. ammon. 1-10, hyd. nit. dil. 1-15, chrysarobin 1-25, salicyl. 1-50, sulphur 1-10, tar 10 per cent.

Miscellaneous.—Glass topped trolley, glass dressing bowls, glass kidney trays, large enamelled bowl, large enamelled basin, nasal douche can, large electric lamp, small electric battery, steriliser for dressings, steriliser for instruments, two drums, glass measures, glass funnel, methylated spirit lamp, dressing pail, bandage roller, green soap, brown soap, nail brushes, tooth brushes, small tooth comb, wooden spatulas, wooden applicators (probes), tooth powder, sod. bicarb., boracic crystals, antiseptic powder, cod liver oil, castor oil, olive oil, almond oil, Parrish's chemical food, syr. iodine of iron.



SCHOOL AT CHILDREN'S VILLAGE, HUMBIE, EDINBURGH.



Dunfermline's Dental Clinic is also completely equipped, and its remedial clinic has high and low plinths and all necessary Swedish apparatus.

The *Cambridge* Dental Clinic keeps only filling materials in stock, and has in addition a pump chair, two Wilkinson chairs and electric and ordinary dental engines. Compared with this, the second-hand dental outfit and a stout kitchen chair with arms, and an adjustable head-rest, with a gas-ring for boiling instruments after each case, which is all the equipment that the little dental clinic at *Newport* (Essex) can boast, is modest indeed. Similarly, at *Stanton*, where the clinic is held in a private drawing-room, the dentist brings with him a head support to be screwed on to one of the chairs and a vessel in which to sterilise his instruments.

At *Cheltenham* there is a Manlove Alliott vermin destroyer and bath, *East Ham* includes a bacteriological equipment, and tuberculin is stocked at *Abertillery*. At *Barking* all the ointments are made by the nurses, and everything is as in a hospital casualty ward. At *Tottenham* the eye specialist provides his own lenses, but the drugs necessary for refractions and for the treatment of minor diseases of the eye are stocked. *Brighton* has apparatus for remedial exercises in the treatment of scoliosis, etc.

An X-ray apparatus has been installed at *Chesterfield* (Derbyshire), *Bradford*, *Brighton*, *Coventry*, *Nottingham* and *Barry*; while at *Croydon* and *Finchley* the X-ray treatment is carried out by local practitioners at their own surgeries on behalf of the health department. A few clinics are also provided with a microscope and ophthalmoscope.

CHAPTER XI

FINANCE

74. UNDER this heading an endeavour has been made to summarise (A) the total cost of installation; (B) the annual working expenses, classified as salaries or fees of professional officials, wages of clerks, care-takers, etc., rent, lighting, heating, cleaning, etc., drugs, etc., other expenditure; and (C) the particulars as to any increase in the rates necessitated by the working of the clinic.

A. COST OF INSTALLATION

75. The cost of installation, which in most cases covers alteration of premises, furniture and apparatus, was given in thirty-two instances only. It ranges from £418 for the two clinics at *Nottingham*, £285 at *Bradford*, and £250 each at *Huddersfield* and *Dunfermline*, to £15 each for the "flying eye clinic" for the County of *Flint* and the clinic at *Tottenham*, and £14 for the *Newport* (Essex) Health Centre.

In fifteen districts the initial cost was from £14 to £50; in four, £51 to £100; and in thirteen it was over £100.

B. SALARIES AND WAGES

76. Under the heading of Salaries and Wages definite returns have been made in thirty-one instances, together with information as to the scale of payment to professional officials in several other cases.

In eight districts salaries and wages amounted to £25 per annum or less.¹

In four, £26 to £100 per annum.

In nine, £101 to £300 per annum.

¹ Mostly rural clinics.

In two, £301 to £400 per annum.

In seven, over £400 per annum.¹

C. RENT, LIGHTING, HEATING, ETC.

77. The cost of rent, lighting, heating and cleaning ranges from *nil* to £100 per annum in the twenty-nine clinics from which information on this point has been received. In ten cases the cost of this item is from £3 to £20; in eight from £21 to £50, and in five over £50. In six cases it is stated that no charge is made for the use of the room; for *Nottingham's* two clinics the Education Committee pays no rent, but has to meet the incidental expenses connected with their use. The dental clinic at *Stanton* is held in the drawing-room of a lady's private house; *Newport* (Mon.) pays £96 and *Guildford* £100 per annum.

D. DRUGS AND OTHER MATERIAL

78. As regards the cost of drugs and other materials (including spectacles in several cases), this would be covered by a £5 note in seven clinics and by £25 in seven others. In seven cases the expenses for this item are from £26 to £75, and in only two are they £100 or more; and even then one includes the cost of electrical current for X-ray treatment, and the other is only estimated.

E. MISCELLANEOUS EXPENDITURE

79. Under the head of Miscellaneous Expenditure come such entries as conveyance of children to the clinic (this is naturally in a rural district), printing and fares (in the case of travelling county clinics). The expenditure amounts to as much as £80 in one case, but is considerably less in all others.

¹ When *Birmingham's* dental clinic is at work, £1,100 will be paid annually to five dentists; *Deptford* has items amounting to £921 in its Annual Report for the year ending July 30, 1912 (exclusive of officials for the open-air camps and schools); the proportion of the salaries of the school medical staff at *Bradford* assigned to the clinic is £590; *Brighton* pays £482 for its doctors, dentist and nurses, and *Reading* £760; *Coventry* pays £637 in salaries and wages, and *Nottingham* (for its two clinics) £602.

In only very few cases is the cost per head reported. The *Deptford* Clinic reckons the rate at 3s. 3d. per child (for which sum more than one ailment can be attended to), the *Newport* (Essex) Health Centre states that during the first six months the cost (for dental treatment only) worked out at a little over 2s. per head. Against this must be set the 7s. per head which is stated as being the cost of supplying dental treatment to the children attending the *Hindhead* Dental Clinic. At *Letchworth* the average cost per case is estimated at 3s. (for dental work only).

The total annual cost of these treatment centres varies, naturally, very considerably, according to the amount of work done. As far as the total cost could be ascertained, it amounts to £1,068 at *Deptford*, £885 at *Reading*, £787 at *Coventry*, £692 at *Nottingham*, £682 at *Brighton* (when the dental clinic is also at work), £644 at *Bradford*, £407 at *Cambridge*, £400 for the *Dorset County Clinic*, £376 at *Newport* (Mon.), £351 at *Guildford* (which pays more for rent, lighting, etc., than any other clinic), £279 at *Worthing*, £189 at *Torquay*, £150 at *Kettering*, and £135 at *Cheltenham*. Twelve other clinics report a total expenditure of £100 or less—in some cases due, apparently, to the fact that the work is carried on by the medical officer of health or school medical officer without any part of the salary being apportioned or paid in respect of the treatment given.

F. INCREASE IN THE RATES

80. This valuable preventive work has necessitated an increase in the rates in six towns only, according to the replies received. It has amounted to £987, or at the rate of $\frac{2}{3}$ d. in the £, in *Coventry*; £885, or $\frac{1}{2}$ d., in *Reading*; $\frac{1}{3}$ d. in *Worthing* (but this includes medical inspection and other matters as well as treatment); about £150, or at the rate of $\frac{1}{8}$ d., in *Torquay*; while the approximate fractional increase caused at *Brighton* is given at $\frac{1}{10}$ d. *Kettering* reports a nominal increase only, without giving figures.¹

¹ According to the "Yorkshire Observer," on September 17, 1912, the *Nelson* Town Council approved the establishment of a clinic there to cost £300 per annum, or a halfpenny rate.

CHAPTER XII

PAYMENTS FROM PARENTS, ETC.

A. GENERAL PAYMENTS

81. ANSWERS were received in fifty-eight instances to the inquiry as to whether any contribution towards the cost of treatment was required from the parents. At the sixteen clinics, as follows, no payment is asked: *Monmouthshire, Chesterfield, Bradford, Croydon, Cambridge, Huddersfield, Newport (Mon.), Nottingham, Sheffield, Southport, Ashton-under-Lyne, Cheltenham, Luton, Torquay, Barking and Dunfermline*. In the remaining forty-two cases, the parents are asked to pay something, and in many cases are reported as doing so willingly. As a rule, it is only for dentistry and for refractions and spectacles that contributions are required. At *East Ham*, however, the only payment asked is 1*d.* for each box of ointment or ear drops supplied, and at *Ilford* the only charge is one of 5*s.* for X-ray treatment; at *Walthamstow* small contributions are expected from the better-to-do parents, and these go towards the fund for providing free spectacles in necessitous cases. At *Brighton* it is proposed to charge 1*d.* per attendance for skin diseases, 2*s.* 6*d.* for refractions (including spectacles), and 2*s.* 6*d.* for X-ray treatment. There is also a charge of 1*d.* for each box of ointment, etc., supplied, which covers nearly the whole cost of drugs. The following scale of charges is in force at *Kettering*: Eye cases, 5*s.*; spectacles, 1*s.* 6*d.* to 2*s.* 6*d.* per pair; dental cases, 1*s.* to 3*s.*, according to work done; ringworm (scalp), 2*s.*; ringworm (body), 1*s.*; discharging ears or nose, 2*s.*; eczema (head), 1*s.* 6*d.*; eczema (body), 6*d.* The charges are sometimes remitted in necessitous cases, and in others are sometimes allowed to be paid

by instalments. At *Abertillery* a charge is made for treatment, but not for examinations, the estimation of errors of refraction being considered to be examination only. The charge is as follows: 1s. for first month's treatment of each child and 6d. for each subsequent month. Here, again, there is remission of fees in necessitous cases, and, if necessary, free spectacles are provided. Applications for free treatment or spectacles have to be made on special forms, and are dealt with by the Committee. At *Horsham* the parents have paid about a quarter of the whole cost; at *Barry*, in the case of tonsils and adenoids, the parents are informed that under the Local Education Authorities (Medical Treatment) Act, 1909, they are liable to pay for the treatment of their children at the school clinic, if they are in a position to do so; at *Letchworth*, where school nursing was begun on the initiative of the parents themselves, they are encouraged to become members of the Nursing Association, which provides the school nurse, the contribution being 1d. per week. At *Welbeck* 1d. per week is paid by fifty out of the seventy children who could come under the scheme, no compulsion being brought to bear on the parents to join.

B. PAYMENTS FOR DENTISTRY AND SPECTACLES

82. As regards the fees asked for dental work, 1s. is asked by the *Dorsetshire* Travelling Clinic for whatever is done, and also at *Chester* (where 6d. only is required for spectacles) and *Loughton*; from 6d. to 1s. 6d. for school children at *Newport* (Essex), and from 1s. 6d. to 3s. 6d. for adults, boy scouts, etc.; 1s. for extractions and 1s. 6d. for fillings at *Stansted*, and at *Woodford* 6d. (or 1s. 6d. if injections are used) for extraction, and 1s. to 3s. for fillings at *Hindhead*; at *Haslemere* the parents in one year paid 82 per cent. of the whole cost. The regulation charge made for spectacles by the eye clinics of *Somerset* and *Durham* is 3s. 6d. per pair, which is remitted in the latter county in necessitous cases. The *Flint* "flying clinic" requires the parents to pay the full cost of the spectacles (averaging 1s. 7d.), when able, and supplies them free, to the value of £5 per annum, where necessary.

As showing what can be recovered from parents, the example of the *Woolwich* (Invalid Children's Aid Association) clinics is worthy of consideration. During the year ending March 31, 1911, when 944 children were on the register, the parents paid no less than £292 os. 11d. towards the cost of treatment during that time. The total cost of the assistance given (which includes payments for children sent to homes and hospitals, and fares in connection therewith, clothes and nourishment supplied, prescriptions and spectacles and instruments) amounted to £575 8s. 9d., so that the parents contributed one-half. No doubt much of this result must be attributed to the fact that the Association has fifty volunteer lady workers, who, among other things, collect the payments in small weekly instalments.

C. PAYMENT ACCORDING TO INCOME

83. A scale of payment, graduated according to income, and mostly for dental, eye and ringworm cases, is in force at *Worthing*, *Warrington*, *Coventry* and *Reading*. At the latter—

If the weekly income of the parent is	The charge per attendance for dental treatment is
Under 24s.	<i>nil</i>
24s. and under 27s. 6d.	3d.
27s. 6d. and under 30s.	6d.
30s. and over.	9d.

This may be compared with the scale for dental treatment at *Worthing*, as follows :

Average weekly income	Charge per attendance
Under 20s. or less than 3s. per head.	<i>nil</i>
20s. to 25s.	3d.
25s. to 30s.	6d.
30s. to 40s.	1s. to 2s.
Over 40s.	No treatment given at the clinic.

At *Warrington* cases of aural discharge, ringworm, contagious sores, ophthalmia and itch are treated free provided that—

(a) With 1 or 2 children in family, the weekly income is not more than 3s. per head.

(b) With 3 or 4 children in family, the weekly income is not more than 2s. 9d. per head.

(c) With 5 or more children in family, the weekly income is not more than 2s. 6d. per head.

These amounts are calculated upon the gross income of the family after deducting the amount of the rent.

Cases requiring dental treatment are dealt with free of charge—

(a) If the gross income of the whole family is not greater than 24s. per week.

(b) If the gross income of the whole family is not greater than 40s. per week.

And the income, after deduction of the rent, does not exceed 5s. a head of the total number of members of the family.

The children of parents with incomes above 40s. are charged as follows:

For extractions, without gas	2d.
„ „ under local anaesthetics	6d.
„ „ with gas	1s.
„ fillings (per tooth)	6d.

A more elaborate scale is that adopted at *Coventry*, as follows:

Eye and dental cases.

Class	Income of standard family ¹ after deducting regular outgoings ²	Charge per attendance
I.	Under 17/6	<i>nil</i>
II.	17/6 and under 20/-	4d.
III.	20/- „ „ 22/6	8d.
IV.	22/6 „ „ 25/-	1/-
V.	25/- „ „ 27/6	1/4
VI.	27/6 and above	1/8

¹ A standard family assumes five adults, each child over fourteen years of age being regarded as an adult, and each child below that age being calculated '75 of an adult.

² Such expenses as rent, payments to sick clubs, insurances, fares of wage-earners to and from work, are assumed as regular outgoings.

Ringworm.—3s. for each attendance, with a maximum of 15s., subject, where the parents are incapable of paying this charge, to following remissions :

Class	Income of standard family ¹ after deducting regular outgoings ²	Full charge : 3s. per attendance. (For not more than five attendances.) Amount of remission per attendance	Charge per attendance	Maximum per charge
I.	Under 17/6	Entire charge may be remitted	<i>nil</i>	<i>nil</i>
II.	17/6 and under 20/-	2/8 may be remitted	4d.	1/8
III.	20/- " 22/6	2/4 " "	8d.	3/4
IV.	22/6 " 25/-	2/- " "	1/-	5/-
V.	25/- " 27/6	1/8 " "	1/4	6/8
VI.	27/6 " 30/-	1/4 " "	1/8	8/4
VII.	30/- " 32/6	1/- " "	2/-	10/-
VIII.	32/6 " 35 -	8d. " "	2/4	11/8
IX.	35/- " 37/6	4d. " "	2/8	13/4
X.	37/6 and above	Full charge to be made	3/-	15/-

The Children's Medical Relief Fund organised for *Carnarvonshire* requires 1d. per month for one child, 1½d. for two from the same house, and 2d. for three or more, while the Provident Club Clinic at *Clay Cross* (Derbyshire) charges the parents 1d. per month, without specifying the number of children.

¹ A standard family assumes five adults, each child over fourteen years of age being regarded as an adult, and each child below that age being calculated '75 of an adult.

² Such expenses as rent, payments to sick clubs, insurances, fares of wage-earners to and from work, are assumed as regular outgoings.

PART III

SCHOOL CLINICS ABROAD

CHAPTER XIII

SCHOOL CLINICS ABROAD

84. WE are indebted to the School Dentists' Society for much of the information in this section. The Society has kindly given permission to make free use of the valuable information contained in the latest edition (1913) of the Society's "Objects and Aims." Quotations from this publication will be indicated in their appropriate places.

A. AUSTRALIA

85. The State of Queensland in 1911 appointed the first dental officer to the staff of the school medical officers. Within a year two assistant inspectors were appointed. The chief dental inspector receives a salary of £300 a year, with 10s. 6d. per day travelling expenses; the assistant inspectors £200 a year, with 10s. for expenses. The district is 1,000 miles by 700 miles. Free treatment is given in necessitous cases. The following are the duties of the assistant dental inspectors:

Duties of Assistant Dental Inspectors of Schools (Queensland).¹

1. They shall be responsible to the Medical Inspector of Schools through the Chief Dental Inspector.
2. They shall inspect the teeth of all children attending the State schools, and such other schools as the Minister shall determine.
3. A thorough inspection shall be made of each child's mouth and each child supplied with a report recommending treatment where necessary. Such reports to be addressed in an envelope to each individual child, and distributed at the conclusion of the day's inspection.
4. A detailed record shall be kept of the condition of each child's mouth, in a manner outlined in the prescribed inspection forms, special

¹ From the School Dentists' Society's "Objects and Aims." Second edition, pp. 75, 76.

care being paid to the extent of caries and the presence of any abnormal or pathological condition in the mouth.

5. At the conclusion of the inspection of each school, such records shall be tabulated on the approved report forms and the results forwarded to the Chief Dental Inspector, a copy also being sent to the head teacher of the school.

6. In each school visited, the head teacher shall be consulted to ascertain if any of the children are of such destitute circumstances as to be unable to obtain the necessary treatment. Should any such cases present themselves, they shall be treated gratuitously to the inspector's best ability and in accordance with the principle and practice of modern dentistry. In undertaking all such cases discretion must be exercised, no case being taken in hand without the head teacher's recommendation.

7. They shall not be allowed the right of any private practice, and their attitude towards practising dentists must be of a strictly impartial nature.

8. Lectures shall be given in each school on the care of the teeth, and in addition further instruction shall be given wherever possible to the parents and teachers on oral hygiene.

9. They shall forward weekly on the forms supplied a diary of their proceedings for the week to date with a programme of their work for the following week. Such weekly diaries shall be forwarded whether they are in the field or at home, or on sick leave, or otherwise absent from duty; and the particulars of work and travelling shall be sufficient to enable their work and travelling expenses to be checked by the Department.

10. They should transmit to the Under Secretary for Public Instruction through the Chief Dental Inspector of Schools, at the end of each year, a full report on the results of their inspections and the different phases of their work.

11. They shall perform such other duties as may be directed by the Minister, the Medical Inspector of Schools or the Chief Dental Inspector of Schools.

In South Australia there is one dental officer, with a salary of £350 a year. The other States of the Commonwealth have no official dental officer.

B. AUSTRIA¹

86. The first school dental clinic was started in Vienna after long deliberation, at the beginning of the school year 1911-12, at *Hütteldorf*, the thirteenth district. It was largely a result of the discovery made in 1890 that over 90 per cent. of the young men fit for conscription had defective teeth. Later on similar investigations were carried on in several school districts, and showed that 98 per cent. of the children had bad teeth.

¹ Translated and adapted from "Die erste Schulzahnklinik in Wien," by Al. Thuchor, in "Körperliche Erziehung" for March 1912.

In 1909 Mr. Arthur Krupp had provided the elementary school of *Berndorf* with a dental clinic at his own expense—the first in Austria—but it was not till March, 1911, that an Austrian Society for the Promotion of School Dental Hygiene was formed, with headquarters in Vienna. This was followed the next month by a conference of parents, convened by a member of the Committee of this Society, herself an elementary school teacher, at which a lantern lecture on dental hygiene was given. This aroused much enthusiasm, and led to the establishment of the first school dental clinic in October of that year.

The clinic was installed in the garden of the Hütteldorf school, in an adapted movable pavilion, taken over from the Red Cross Society, at a total cost of over £400. One of the two largest white-painted rooms is used for operations, and is equipped with all the most modern apparatus. The other accommodation includes a work-room, extraction-room, and the dentist's consulting-room, as well as a spacious waiting-room. The latter is well supplied with toys and pictures, has fresh flowers always on the tables, and even two aquaria, with which the children may amuse themselves while waiting their turn.

The school dentist, Dr. Kreisling, appointed by the Society for the Promotion of School Dental Hygiene, treats, free of cost, any necessitous children who are referred to him by the ten elementary schools and the kindergarten of the district. He attends six hours a week. He is a favourite with the children, who gladly come for treatment. It is reckoned that 6,000 necessitous children will have to be dealt with annually in this district alone, and it is realised that six hours a week will soon prove insufficient; accordingly, active steps have been taken already to add to the number of subscribers to the Society, with a view to increasing the amount of time to be given by the dentist.

This excellent example is being followed in other quarters and suburbs of the town, and in the fourteenth district a committee is already at work to secure the formation of a clinic there.

The first State school dental clinic was started early in 1912 at the State Orphanage. Furthermore, the provision of adequate accommodation for school

clinics in any school buildings henceforth to be erected has been approved, and is to be facilitated by the education authorities of Vienna.

The latest edition (1913) of the "Objects and Aims" of the School Dentists' Society states that :

There is no school dental clinic in Upper Austria ; only in the Real (Council) School of Linz private dental surgeons are invited to examine the teeth of the scholars.

Styria.—In the municipal schools of Graz poor children are provided with tooth-brushes and powder.

In the districts of Fuerstenfeld and Gleisdorf school dental treatment is obligatory, for which two dentists are appointed at a salary of £45 each per annum.

Galicia.—Lemberg appointed in 1907 a dentist for examining and treating the teeth of the children. Biala has a school dentist for the primary school.

Bohemia.—Prague has appointed six school dentists at a salary of £20 each.

C. BELGIUM¹

87. *Brussels* has a complete dental service, which was established in March, 1877, by the late M. Maurice Bôn. The dental clinic is paid for out of the town budget as part of the expenses of primary instruction. There are one or two other dental clinics in Belgian towns.

D. CANADA²

88. Dr. G. K. Thomson, of Halifax, Nova Scotia, reports that "in *Toronto*, in 1911, a dental inspector was appointed on the Medical Inspection Staff of the Board of Education ; and a public clinic, consisting of three chairs, manned by six half-time salaried operators maintained by the City Council, has been opened." In *Quebec* the teeth are examined by medical inspectors appointed by the City Council. "Children with bad teeth, representing about 94 per cent., are sent to McGill & Laval College Dental Clinics, which receive a subscription or money grant from the city to do such work."

There is also a dental clinic at *Winnipeg*, and it is expected that clinics will be established in *Ottawa* and *Guelph*.

¹ From the School Dentists' Society's "Objects and Aims," second edition, p. 85.

² *Ibid.* p. 78.

E. DENMARK¹

89. M. Fritz Orth, manager of the *Frederiksberg* Public School Clinic, states that in Denmark nearly twenty years ago a proposal for the public care of school children's teeth was brought forward by Professor Y. Hoderup, M.D. On investigation, about 93 per cent. of all cases were found to be suffering from caries. The Danish Society for the Care of Children's Teeth was established in 1910. In five towns dental clinics have been established. The average salary is Kr. 1,500 (£93) for three hours' work on 240 school days.

In several other towns, although there are no dental clinics, school dentists are employed. "Military dentists are appointed at all garrisons."

F. FINLAND²

90. At the beginning of 1912 there were municipal school clinics at work in *Åbo* and in *Tammerfors*, and a private clinic, partly financed by a municipal grant, at *Helsingfors*. Another was to be opened at *Wiborg* in the autumn of this year.

Helsingfors owes its clinic to the zeal and self-sacrifice of a dentist, Mr. Axel Aspelund, and a philanthropist, Mr. Th. Weber, who, when they had failed in 1907 to convince the Town Council of the need for a clinic, started and financed one themselves for the benefit of the 10,000 elementary school children in the town. The cost of installation, borne by Mr. Weber alone, amounted to £250, and for this sum a house in a central position was rented and fitted up as a waiting-room, surgery, work-room and care-taker's apartments. The clinic was at first open five hours a day, but the following year, the local authorities still refusing a grant, the hours had to be considerably curtailed, and the clinic was at work for only six months out of the year. In the spring of 1909, however, both the education and health authorities supported the request for a municipal grant, and finally

¹ From the School Dentists' Society's "Objects and Aims," second edition, p. 87.

² From a report by Gunnar Sivén in "Internationales Archiv für öffentliche Mundhygiene," January, 1912.

£408 was voted for that year, with the result that the services of four dentists, working in all eleven hours a day, were secured. In all, during the three and a half years since the opening of the clinic, the town has given £958 towards its cost, the balance (some £500), except for £50 given by the Society for Promoting Dental Hygiene among elementary school children in Helsingfors, having come out of the pockets of the two above-mentioned gentlemen.

At present the clinic is open about two hundred days per annum, and is attended daily by about fifty children, at an annual cost of £722, which brings the cost per child to 1s. 5d.

The growth of the work is shown in the following figures:

Year	Examined	Treated	Attendances
1907-8	2,613	446	4,558
1908-9	1,524	1,320	7,398
1909-10	3,754	3,070	16,791

In spite of the fact, revealed by a recent investigation into the dental conditions of 2,000 elementary school children between seven and eight years of age, that only 3.75 per cent. of this number had perfect teeth, and that there was an average of seven defective teeth to each child, some 20 per cent. of all the possible attendants at the clinic do not avail themselves of the opportunity of having their teeth seen by the dentists. This is attributed partly to misunderstanding and indifference on the side of the parents, and partly to the attitude of the teachers, although in many cases every child in a class comes up for inspection and treatment.

G. FRANCE

91. "In France, up to 1908, few dentists interested themselves in school dental hygiene, and the authorities almost not at all. In communal schools no attempt has been made to introduce dental hygiene. As a matter of fact, an existing law prohibited a dentist from going within the precincts of a school.

Under this law, apart from the teachers, only inspectors, cantonal delegates and the doctors could enter the school. It was thus simply by courtesy that a dentist was allowed to make an inspection of the mouths of children attending the schools. Inspection was mostly confined to some colleges and higher primary schools, but in the communal schools there was almost none.

"A good beginning has already been made by the despatch of the circular of the Minister of Public Instruction of March 28, 1908. This was due to the initiative of M. Lamy, Director-General of Higher Grade Schools. This circular was addressed to all normal schools and boarding schools supported by the State. In all these establishments a dental service has been organised. Two dentists are nominated—one to inspect and the other to operate. The first examines the pupils twice a year, and draws up lists, which are addressed to the parents of each pupil, showing them the state of his or her mouth. The parents are free to take the child where they wish. This inspection is obligatory, and takes place twice a year. There is no operating-room in the school; the dentist, if he is appointed by the parents to treat the child, does so at his own surgery. The operating dentist is not under the control of the inspecting dentist, as some people think. The latter has the sole duty of noting the condition of the mouth, and has nothing to do with the carrying out of the necessary treatment.

"For establishments situated in towns a ministerial decision of December 7, 1908, has entrusted the inspection to the school doctor, whose duty it is to fill up the dental chart, and keep it up-to-date.

"The total cost of working the dental service in the normal schools is 14,360 francs, made up of 6,810 francs for the normal schools for female teachers, and 7,550 francs for those for male teachers.

"This circular of 1908 constitutes a great advantage. It has established the obligatory dental chart. It is addressed to the future male and female teachers who are destined to direct the education of the children, and they will then be in a position to inculcate some of the principles of dental hygiene. Dental services are organised likewise in the establishments of the



STRASSBURG MUNICIPAL DENTAL CLINIC—EXTERIOR OF BUILDINGS.

Public Relief Board. Regular attendance is given twice weekly in the hospitals, where urgent cases receive treatment at once."¹

M. Francis Jean,² Professor of the Dental School at Paris, reports that a Bill now before the Chamber of Deputies proposes to empower municipal councils to appoint dental specialists for school children, and that in some towns of France school dental clinical surgeries are subsidised by the municipal councils. "Dental inspection and treatment are given in the normal primary schools and the upper primary schools.

"Inspection is made in the lycées and colleges (secondary schools)."

H. GERMANY

92. According to a table drawn up for the German Central Committee for School Dental Hygiene by Doctors Konrad Cohn, Erich Schmidt and H. Kientopf, dental treatment for school children was, in April, 1911, carried out—

1. AT MUNICIPAL CLINICS :

- | | |
|-------------------------------------|--|
| 1. Altona | 20. Höchst a. M. |
| 2. Bergisch-Gladbach ^{3 4} | 21. Karlsruhe |
| 3. Bernburg | 22. Lahr ⁴ |
| 4. Bielefeld ⁴ | 23. Metz |
| 5. Cassel | 24. Mülhausen |
| 6. Charlottenburg | 25. Müncheberg ⁴ |
| 7. Colmar | 26. Nordhausen |
| 8. Cologne | 27. Offenbach |
| 9. Cottbuss ⁴ | 28. Remscheid |
| 10. Darmstadt | 29. Rostock |
| 11. Dortmund | 30. Sarbrücken ⁴ |
| 12. Duisberg | 31. Schiltigheim ⁴ |
| 13. Erfurt | 32. Schöneberg b. Berlin |
| 14. Freiburg i. B. | 33. Stettin ⁴ |
| 15. Fürth ⁴ | 34. Strassburg |
| 16. Hamburg | 35. Stuttgart |
| 17. Hanover | 36. Ulm |
| 18. Harburg ⁴ | 37. Wilmersdorf b. Berlin ⁴ |
| 19. Heidelberg | 38. Würms ⁴ |

¹ From "A Short History of School Dental Clinics," by L. Storrow Shennan, L.D.S. Edin. pp. 6, 7.

² From the School Dentists' Society's "Objects and Aims," second edition, p. 91.

³ Also at a private clinic.

⁴ Also by arrangements with private dentists.

2. AT PRIVATE CLINICS:

- | | |
|-----------|--------------------|
| 1. Berlin | 2. Frankfurt a. M. |
|-----------|--------------------|

3. AT UNIVERSITY CLINICS:

- | | |
|---------------|-------------|
| 1. Greifswald | 4. Marburg |
| 2. Halle | 5. Münster |
| 3. Kiel | 6. Würzburg |

Arrangements for the treatment of school children by private dentists have also been made at—

- | | |
|------------------------|-------------------------|
| 1. Dessau | 17. Mannheim |
| 2. Diedenhofen | 18. Meiningen |
| 3. Dockenhuden | 19. Mülheim a. Ruhr |
| 4. Elmshorn | 20. Kreis Nauen |
| 5. Freiburg i. Sch. | 21. Pankow b. Berlin |
| 6. Fürstenberg | 22. Pillkallen |
| 7. Giessen | 23. Rheydt |
| 8. Grunewald b. Berlin | 24. Siemianowitz |
| 9. Haspe i. Westf. | 25. Steglitz b. Berlin |
| 10. Holzminden | 26. Tharandt |
| 11. Kiel | 27. Waldenburg i. Schl. |
| 12. Konitz | 28. Wanne |
| 13. Konstanz | 29. Warnemünde |
| 14. Lennep | 30. Wernigerode |
| 15. Kreis Linden | 31. Wiesbaden |
| 16. Markirch | 32. Zülpich. |

Of these clinics *Strassburg* started in 1888, *Würzburg* in 1898, those at *Altona* and *Darmstadt* have been at work since 1902, *Konitz*, *Offenbach*, *Meiningen* and *Markirch* since 1904, *Mülhausen* since 1905, *Holzminden*, *Münster*, *Waldenburg*, *Wernigerode*, *Wiesbaden*, *Lahr* and *Giessen* since 1906, while eight more began in 1907, nine more in 1908, nine in 1909, seventeen in 1910, and thirteen in 1911 (to April).

Dr. Jessen reported at a meeting of the International Dental Federation held in August, 1911, that over 1,099,000 elementary school children were then under dental care in Germany, and that the cost of the clinics in 1911, as far as the information was to hand, amounted to £15,000, out of which 162 dentists received £12,500 in salaries, and the working expenses accounted for the balance of £2,500. In addition to the seventy-eight clinics at work up to April, 1911, forty-one more education authorities were about to found similar institutions, bringing the total up to 119.

Twenty-nine of the school clinics in Germany pro-

vide free treatment for all who present themselves, eleven others limit gratuitous services to those who cannot afford to pay, thirteen ask for payment according to what is done, nine require the parents to pay a lump sum of 1s. per annum; at one clinic this is increased to 2s. per annum, and at another 6d. per child is asked.

Hamburg has eight whole-time dentists at £1,400 per annum, in all, at *Mannheim* there are sixteen part-time dentists, at a total salary of £550 per annum, at *Wiesbaden* eight part-time dentists receiving a fee of 6d. per child per annum, at *Strassburg* one honorary dentist director and four whole-time assistants, at £910 per annum in all. In *Hamburg*¹ any parent whose child is found on medical inspection to require dental care has the right to attendance at any of the State dental clinics. The charge is 1s. 2d. per child, of which the State contributes 8d. and the parents 6d., but this is remitted in necessitous cases. The dentist attached to the *Rostock*² Clinic is on the same footing as the head-master, receiving a salary of £175, rising to £400, with a pension. At *Hanover* the city school clinic for 32,000 children costs £850 per annum, of which £150 is contributed by the town and the rest (£700) by the parents.

The oldest-established school dental clinic in Germany is at *Strassburg*, and we are indebted to Professor Dr. Jessen, its founder, for the following interesting information with regard to it:

"Free dental treatment was provided for poor children in Strassburg from 1888, when the ambulatorium for dental diseases was opened at the Kaiser Wilhelm University. This institution came under State control in 1893, and was then called the University Polyclinic. Thanks to the co-operation of the local education authority, increased facilities were granted for inspecting and treating school children, and ultimately, in 1902, in view of the growth of the work, necessitating the employment of a special assistant, the first clinic exclusively for school children was

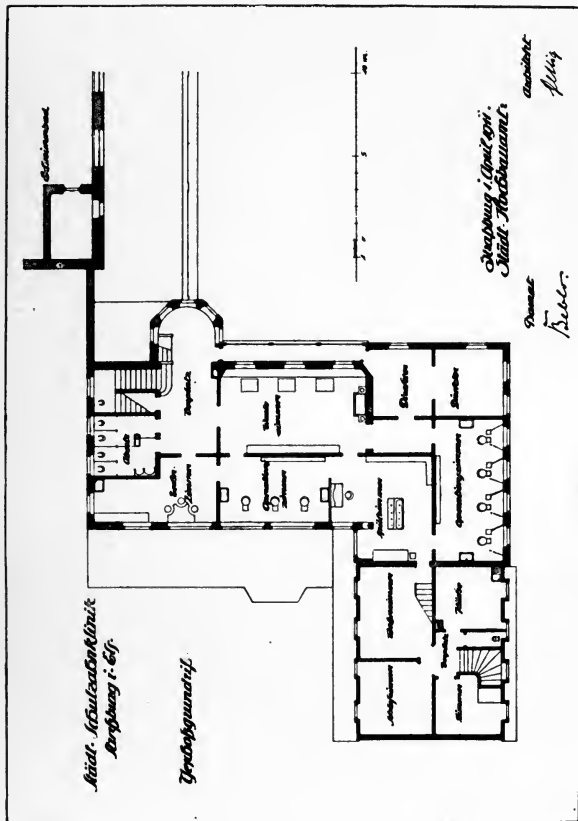
¹ From "The Children's Teeth," in "School Hygiene" for September 1911.

² *Ibid.*

established in the town. It did not separate from its parent, the University Polyclinic, till 1904, and in February, 1908, it was temporarily housed in a building in the city, till a permanent home of ample proportions could be provided. This was ultimately found in the newly erected municipal medical baths, adjoining the swimming-bath, and was entered into on April 1, 1911.

"A separate light and airy entrance has been provided, leading to commodious cloak-rooms, etc., with floor, ceiling and walls covered with light-coloured tiles. The white-painted waiting-room, 18 x 27 feet, has accommodation for 120 children, and is equipped with a large aquarium and suitable games and literature for the waiting patients. This room has two doors into the first operating-room, in which inspections, extractions and smaller operations are carried on. It contains two operating-chairs and accessories and two instrument cabinets. It is divided from the waiting-room by a partition about 5 feet in height, which enables the superintendent to see what is going on there. Together these two rooms occupy, approximately, 20 x 40 feet. The second operating-room, separated from the first by the rinsing-room, is devoted exclusively to conservative dental treatment. It measures 13 x 26 feet, and is equipped with four operating-chairs, electric engines, reflectors, fountain spittoons, hot and cold water, four aseptic cabinets for instruments and linen, and a desk for book-keeping. The rinsing-room contains eight wash-basins with fountain spittoons, obviating the use of tumblers and their resultant risk of infection. Here also are the card index registration files, etc., two cupboards for drugs, and a sofa for children subject to syncope. The laboratory is fitted with all modern appliances, and includes everything required for supplying false teeth. The rest of the accommodation includes two rooms for the director, a tenement for the porter and caretaker, three rooms for the assistants, and storage accommodation.

"The working staff consists of nine persons (of whom four are lady dentists), whose joint salaries for 1911-12 amount to £910. The budget for the year provides another £215 for materials and repairs, bringing the



PLAN OF STRASSBURG DENTAL CLINIC.



total cost to £1,125, or practically double that of the year before.

"Twenty thousand school children are entitled to free treatment at the clinic, and last year's report showed that 9,074 presented themselves, involving 14,222 attendances; 6,999 teeth were extracted; 6,669 fillings were inserted; while 758 root fillings and 2,403 temporary applications made up the total work accomplished during the year. From 1902 to 1911 inclusive 55,279 children have had 54,686 teeth filled and 59,675 extracted. The expenditure during these ten years has totalled £4,516.

"An investigation as to the care given by school children in Strassburg to their teeth gave the following results: 40·9 per cent. of all the children attended regularly to their teeth (41·7 per cent. in the elementary schools, 79·6 per cent. in the secondary, and 26·9 per cent. in the kindergartens); 45·2 per cent. of all the children possessed tooth-brushes (56·3 per cent. elementary, 92·9 per cent. secondary, and 26·3 per cent. kindergarten children). Apparently, therefore, a considerable number of children do not use a tooth-brush, even when they have one; 29·3 per cent. of the elementary school children and 2·6 per cent. in the secondary schools could not buy a brush for want of money. Last year 16·4 per cent. of the children in necessitous circumstances were given a tooth-brush without charge."

Inspection¹ is carried out at the schools, and pupils are sent under supervision of the teaching staff, chiefly out of school hours, to the clinic. In cases of very bad teeth pupils are allowed to attend during school hours, but only two at a time from the same class. Attention to the teeth of children between the years of three and six is compulsory among those who attend the holiday camps, and older children are excluded if they refuse to have their teeth treated. The school staff co-operate with the dentist in the work, lectures being given to both male and female teachers. Conferences take place, too, to which the parents are invited. As regards time given to inspection and absence from school for

¹ From "A Short History of School Dental Clinics," by L. Storrow Shennan, L.D.S. Edinburgh.

treatment, the Strassburg inspector of schools says that instead of the schools suffering it has been found that the children lose less time in treatment than in remaining away from school when they are suffering from toothache. Increased strength, physically, intellectually and morally, is evident, and therefore the interests of the school itself benefit.

At *Charlottenburg*¹ the Municipal School Dental Clinic, established in 1908, now provides free treatment for the 30,000 children attending thirty-seven elementary schools, the municipal kindergarten and infant consultation centres, and scholarship children at secondary schools. The cost of installation, including all instruments, amounted to £550, and the annual cost is reckoned at £971, apportioned as follows: Salaries of one dentist and two assistant dentists (one being a lady, and all three whole-time officials), £600; two school nurses, £120; drugs, etc., £105; rent, care-taker, etc., £146. The accommodation, provided in one of the schools, consists of two operating-rooms, a waiting-room, work-room and two rooms for the staff. The clinic is open from 9 to 1 and 3 to 6. The following figures show the growth of the work:

Year	Children treated	Extractions	Fillings	Roots treated and preserved
1908	286	424	811	0
1909	7,518	7,698	7,358	564
1910	9,949	7,671	10,266	2,739

The clinic at *Freiburg i. B.*² has been at work for some years, with the result that less and less treatment is required every year. A report for four and a half months, ending on March 31, 1912, showed that 62 per cent. of the children examined still had defective teeth; but only exactly half of these, or 436 in all, presented themselves at the clinic for the treatment which is free to all scholars. In addition to these, 897 children came of their own accord, on account of

¹ From information kindly supplied by Dr. Neufert, of Charlottenburg.

² From information kindly supplied by Dr. Brodersen, Medical Officer of Health for Freiburg.



STRASSBURG DENTAL CLINIC—DR. JESSEN AT WORK.



toothache, making 1,333 children dealt with during the period under review. Great stress is laid on instructing the children at inspections and their parents, as far as possible, in the need for, and best methods of carrying out, dental hygiene.

The municipal clinic at *Furth*¹ (Bavaria) is, as far as we can gather, the only school clinic in the German Empire which treats diseases other than those of the teeth. It was started by a grant of £250 made in 1909-10 from the so-called "Welfare Fund" (*Wohlfahrtsfonds*), which in its turn is derived from the profits on the savings-bank department. Free treatment is afforded to all children suffering from diseases which do not necessitate staying in bed; the doctors are recruited from the local Medical Association, and give their services without charge. The clinic is open daily, Sundays excepted, a trained nurse is always present, and the clerical work is done by the municipal authorities. All the requisite medicines, tonics, bandages, spectacles, etc., may be obtained gratuitously from local chemists, and weak or underfed children are also given milk daily during the fifteen minutes' interval between lessons. The whole cost for the first year, excluding rent (since the clinic is housed in a municipal building) and initial expenses, amounted to £150. Many interesting details about school clinics in Germany are to be found in the School Dentists' Society's "Objects and Aims," second edition.

I. ITALY²

93. "In Italy we have just begun to think of the teeth of the children of public elementary schools.

"The dental inspection of children in the schools of *Milan, Turin, Genoa, Leghorn, Padua, Bologna, Rome* and some other cities has proved that nearly 90 per cent. of children need dental treatment.

"This treatment is now partially enacted in *Milan, Genoa, Turin and Bologna*, supported either by the municipality or by benevolent institutions, but there are not yet in Italy true school dental clinics."

¹ From "Soziale Praxis," February 9, 1911.

² From the School Dentists' Society's "Objects and Aims," second edition, pp. 94, 95.

J. NEW ZEALAND¹

94. From the account given by Professor H. P. Pickerill, University of Otago, New Zealand, we learn that in New Zealand the inspection of teeth is conducted by the school medical inspectors. This has been considered the most practical course. The services of the dental surgeon are reserved for treatment. In the large towns there are, as a rule, dental hospitals and dental departments of general hospitals. A royal commission on education has recommended the dental inspection of school children. As elsewhere, it has been found that about 95 per cent. of the children suffer from bad teeth. In Auckland city public schools it was found that "among the children whose ages ranged from seven to thirteen years only eighty had no decay in their permanent teeth—i.e., 4·3 per cent." (For further details, see "Objects and Aims.")

K. NORWAY²

95. Up to July 1911 dental clinics were reported as existing at *Christiania*, *Trondjem* and *Drammen*—that at *Christiania* having been established partly with the help of a philanthropist interested in the movement.

L. RUSSIA

96. Curious as it may seem, it was in this country that as early as 1879 attention began to be given to the necessity for care of the teeth of school children. At that time examinations made by Sklifosovsky showed that out of 400 school children 288, or an average of 72 per cent., had carious teeth. In 1882 Professor Rabinowitz examined and treated the teeth of students in the College of Finland and those of the private schools of Wynberg. These ranged in age from nine to twenty; 44·5 per cent. required treatment.

¹ From the School Dentists' Society's "Objects and Aims," second edition, p. 79.

² From "A Short History of Dental Clinics," by L. Storrow Shennan, L.D.S. Edin. pp. 4, 5.



STRASSBURG DENTAL CLINIC—RINSING-ROOM.



Examinations made at the military schools by Dr. Pakolkoff showed that out of 416 students at Omsk 46 per cent. suffered from carious teeth.

In 1886 Professor Limberg, of *St. Petersburg*, began regular visits to the schools of the Philanthropic Society. Examinations and operations were done at the schools at first. Now the inspection of the children is carried out at his offices, where assistants, under his supervision, perform the necessary operations. The periodic examinations and regular treatment carried out at this time in Russia in different parts were all done gratuitously by the school dentists.

Since 1891, in the cases of day schools for families in easy circumstances, all the students must be examined once a year, and the parents are advised by the principals as to what dental treatment is required for their children. The parents select their own dentist, and at a fixed time the children must present a certificate from the dentist who undertakes the treatment.

In 1896 a commission was appointed by the Russian dentists in council to the Minister of the Interior for the organisation of dental services, and this commission, of which Professor Limberg was chairman, decided to work according to the following rules :

1. That it is necessary and compulsory that children's teeth be examined, and only admission to the schools granted to those with teeth naturally healthy or rendered so by appropriate fillings.

2. To eradicate disease every school should have a dentist to examine the children's teeth twice a year, and to give them the necessary treatment. The dentist taking the responsibility of effecting such treatment shall have certain privileges to correspond with his position and knowledge.

In the military schools comfortable dental offices are fitted up. The dental officers are required—

1. To take care of the mouths of pupils and to use prophylactic measures.

2. To accustom the children to daily care of the teeth.

3. To keep a detailed record, with observations as to results obtained.

4. To present a report on expenses and materials of the offices.¹

¹ From "A Short History of Dental Clinics," by L. Storrow Shennan, L.D.S. Edin. pp. 4, 5.

"In *Moscow* there are special dentists in all greater gymnasiums and institutes, whom the children may consult either at the dentists' offices or in a school-room, where they are examined by an assistant.

"In *Odessa* there is a special polyclinic, where teeth are being treated.

"*Charkoff* has a special children's clinic, which is supported by the Charkoff Odontologic Society. Much the same is found in all Russian University and Government places."¹

M. SPAIN²

97. Dr. Landete, Madrid, states that "only two towns have organised dental inspection in schools." These are *Madrid* and *Barcelona*. The provision made is on a small scale. The Municipality of Madrid granted a credit of £40 to establish a small dental office in a school. *Barcelona* has ten dentists paid £4 a year each for inspection and treatment of the district school children. The movement towards the dental clinics is gaining ground.

N. SWEDEN

98. In this country Dr. Forberg, by his indefatigable zeal, quickly brought the importance of dental hygiene to his fellow-countrymen's knowledge, and in association with the Swedish Dentists' Society prompt steps were taken.

In 1896 the Society selected a committee which examined 18,000 school children, and the results were such that measures were taken at once. Conferences were held at the primary schools and in the colleges of the capital, and lectures were organised for children, parents and teachers. Two prizes of 14,000 francs were offered for the best books dealing with the teeth and oral hygiene, and those written by Dr. Rose, of Dresden, and Dr. Rune, of Karlsstadt, in Sweden, gained the awards. Dr. Rose has charge of the Private Lingner Clinic at Dresden, which has four operating-rooms, in which ten dentists are occupied all day.

¹ From the School Dentists' Society's "Objects and Aims," second edition, p. 96.

² *Ibid.* p. 97.

There is an enormous waiting-room, also bacteriological and chemical laboratories and X-ray apparatus.

Statistics of dental caries were shown at a health exhibition held at Stockholm, and the public journals interested themselves in the question, and insisted that the State should intervene.

In 1905 the question was taken to Parliament, and soon Stockholm had its school dental clinics.¹

At the dental clinic of the *Stockholm*² public schools 2,023 children were examined with the view of determining the relation between enlarged tonsils and decayed teeth. It was shown that children with relatively sound teeth suffered from enlarged tonsils to the extent of 0.5 per cent.; children with moderately decayed teeth, 3.12 per cent.; and in children whose molars were almost completely decayed, the percentage was 9.5. A second school dental clinic will be at work in Stockholm from the autumn of 1912 onwards. Those who are promoting the movement for dental clinics are beginning to think that children who are not absolutely destitute ought to pay a small fee for the treatment, if only on the ground that something which has to be paid for is more appreciated than something which is given free.

From the Report in "Objects and Aims,"³ by M. Albin Lenhardtson, Director of the School Dental Clinics in Stockholm and President of the Hygienic Commission of the Swedish Dental Association, we find that the Government has been induced "to make the whole movement a national question. As the result of a proposal by the Swedish Dental Association to the Royal Government Board, Parliament has this year voted a sum towards the expense of examining the teeth of the children in all our Swedish high schools." In 1911 treatment was introduced into the schools at *Gothenburg*. There are two dental clinics at *Stockholm*, where "the Municipality has decided to extend conservative treatment successively to all the children in the board schools."

¹ From "A Short History of School Dental Clinics," by L. Storow Shennan, L.D.S. Edin. pp. 7, 8.

² From "Internationales Archiv für öffentliche Mundhygiene," January 1912.

³ pp. 98, 99.

O. SWITZERLAND

99. The dental clinic at *Frauenfeld* was made possible by a grant of £140 from the local education committee in May, 1911. The need for such a clinic seemed amply evidenced by the fact that among 1,169 children interrogated on the subject, only 158 had ever been treated by dentists in private practice, and these children were almost entirely pupils in secondary schools. During the four months of 1911 when the clinic was at work, 164 children were examined, and 105 of these received treatment, 351 teeth being extracted, 434 filled, and 21 otherwise treated. Only seven of the children dealt with at the clinic had previously been treated privately, and that by the school dentist himself.

The official tariff is as follows :

	s.	d.
Extraction	0	5
„ with injection	1	3
Cauterising a nerve	0	10
Temporary stopping with cement or guttapercha	0	10
Stopping with silver amalgam	1	3
„ „ imitation porcelain	1	8
Cleaning the teeth and removing tartar	1	3
Crowning a tooth	6	8
Tooth-brushes and powder are supplied at cost price.		

The chief regulations of the clinic are as follows :

1. Children only receive treatment with the approval of their parents.
2. Parents are desired to attend the first consultation.
3. Treatment is carried out at a fixed tariff. A provisional estimate is given to the parents.
4. Children attending a holiday colony are obliged to undergo dental treatment.
5. The Education Committee pays for absolutely necessitous cases.
6. Children must clean their teeth before attending the clinic.
7. Children can be seen only by appointment.
8. Accounts must be settled within a month through the class teacher.

The balance sheet for the four months showed that £35 10s. had been received from the scholars themselves, and £5 10s. from the Education Committee for necessitous cases ; £8 15s. was spent on drugs, implements and tooth-brushes, £10 13s. for care-taker's

attendance and cleaning, £2 16s. on heating, lighting, etc., leaving a credit balance of £19, thanks to the voluntary services of the dentist and his assistant.

In *Winterthur*¹ an arrangement has been made with six dentists for dental work among the elementary school children. Under this they are obliged to set aside a special hour for the treatment and inspection of such children, although they may be asked to extract teeth at any time. They keep a register of the children so treated. They are entitled to charge as follows :

	<i>s.</i>	<i>d.</i>
Extractions	0	10
Antiseptic treatment, per visit	0	10
Cleaning teeth, removing tartar	1	3
Stopping	3	0

At *Zürich*² a school dental clinic has been in existence for some time, and, according to the last available report, was then carried on by a dentist in private practice, who devotes one hour a day to consultations at the clinic, leaving the actual work to be carried out, under his directions and on his responsibility, by an assistant. During ten months of 1910 and 1911 986 boys and 1,415 girls were treated, 2,871 teeth being stopped and 4,301 extracted.

According to the regulations of the school clinic for *Lucerne*, this institution consists of two sections—a general and a dental clinic. All scholars attending the municipal elementary and secondary schools have the right to use it free of charge. The general clinic deals with verminous conditions, skin diseases, minor ailments of ears and eyes, anæmia, scrofula and rickets. It provides spectacles, bandages, tooth-brushes, etc., and prescriptions for drugs, which are supplied by contracting chemists in the town. The appointed doctor receives a salary of £72 per annum, for which he sees children at the clinic from 5 to 6 p.m. any day but Thursdays, Sundays, public holidays, or during school holidays. The teachers are responsible for seeing that children attend the clinic only if the

¹ From "Schweizerische Blätter für Schulgesundheitspflege," May, 1912.

² From "Geschäftsbericht der Zentralschulpflege der Stadt Zürich," 1910, pp. 55-57.

consent of the parents has been obtained, although cleansing is compulsory.

A free school dental clinic is also reported¹ as being about to be opened (in September, 1912) by the municipal authorities of *Geneva*, with one dentist and an assistant in charge. The committee of organisation consists of two Parliamentary deputies, one of whom is a doctor, the medical officer of health, a school inspector, and three dentists, with the president of the school dental committee as chairman. The Odontological Society of Geneva initiated this work two years previously by establishing a free dental clinic for children and adults, which met with great success.

P. UNITED STATES OF AMERICA

100. *New York City's*² first and only eye clinic in a public school building, that at P.S. 21, Mott and Spring Streets, Manhattan, is working successfully. In the three weeks since it was opened nearly 100 cases have been treated, many of them trachoma sufferers. The school clinic saves the children and their parents long trips to uptown hospital clinics. The parents welcome the opportunity to have the children treated in school, and, although no treatment is given unless the parents consent, all consulted to date have readily agreed. The clinic is free.

At *Boston*³ the Forsyth Dental Infirmary is now in course of construction, and owes its origin to the munificent donations, amounting in all to 1,500,000 dollars, of the late Mr. Thomas Forsyth, a successful business man of Boston, and his brother, for building and endowing an infirmary for the free treatment of the teeth of school children under fifteen years of age. The building is to cost at least 200,000 dollars, and the endowment for maintenance has been placed in the control of a reliable trust company. There are also six other dental clinics in Boston for the care of neglected mouths.

¹ From "Internationales Archiv für öffentliche Mundhygiene," January, 1912.

² From "The New York Globe," February 12, 1912.

³ From a report by William H. Potter, in "Internationales Archiv für öffentliche Mundhygiene," January, 1912.

In the State of *Pennsylvania*¹ committees on oral hygiene and public dental education have been organised in all the important dental societies. These committees have been actively engaged in giving public lectures and urging the examination and treatment of the teeth of school children. A number of free dental dispensaries have been established in the State.

In the city of *Philadelphia*,² under the direction of Dr. P. B. McCullough, the Philadelphia Dental Dispensary was established in October, 1910. From Dr. McCullough's recent report a few quotations will give an idea of the importance of this work.

The Philadelphia Dental Dispensary is a division of the Department of Public Health and Charities, directly under the Bureau of Health. The list of operators consists of 210 volunteer dentists, who are known as the Philadelphia Dental Dispensary Corps. The men comprising this corps are the leading practitioners of the city and members of the teaching staffs of the colleges. The purpose of the movement is to educate the public in general, and city officials in particular, as to the importance of oral hygiene in relation to the general health, and particularly for the interest of school children. The Philadelphia Dental Dispensary is the only organisation under a municipality in which the entire equipment is paid for by the city, and it is because of this fact that we anticipate having paid operators in the very near future.

"Clinics have also been established in *Washington* (D.C.), *Baltimore* (Maryland), *Brookline*, *Boston* and *Worcester* (Massachusetts), *Newark* (New Jersey), and a number of other eastern and southern cities.

"In *Chicago* (Illinois) a dentist has been appointed as an official of the Department of Health, and school dental clinics are being gradually established there.

"*Cincinnati* and *Cleveland* (Ohio) have one or more clinics, these latter being supported from benevolent sources.

"*Ann Arbor* (Michigan) also has recognised dentistry as essential to public health, and many other cities of the middle west.

"In the far west *Denver* (Colorado) and *San Francisco* and *Los Angeles* (California) have established free dental clinics, but this work is not as yet paid out of public funds."³

¹ From a report by William H. Potter, in "Internationales Archiv für öffentliche Mundhygiene," January 1912.

² *Ibid.*

³ From the School Dentists' Society's "Objects and Aims," second edition, pp. 82, 83, by Dr. Herbert L. Wheeler, New York.

CONCLUSION

To bring these chapters to a focus, let us return for a moment to the starting-point.

The medical inspection of school children has shown the necessity for medical treatment and supervision. This is the general groundwork of the preceding exposition.

As the purpose of medical inspection was to discover at what point diseases or defects impeded the work of education, so the purpose of treatment is to reduce diseases to a minimum, to remedy defects where they are remediable, but in all cases to secure to the child the education best fitted to his individual capacities. Medical inspection of school children has developed its own methods; medical treatment of school children must develop its own organisations. We have shown how the general powers of the statutes have resulted in the creation or adaptation of special institutions; how these have become further specialised in hospitals of many varieties; how the hospitals, in turn, have developed their resources in response to the demands of the minor diseases; how the treatment of these diseases in their masses has resulted in still further specialisation; how, in a word, the general aim of treatment has been realised through statutes adapted to the special problems revealed by medical inspection.

But medical treatment and supervision are not ends in themselves. They are subordinate to a greater end. They are intended to secure for the child, primarily, his highest educational value, and, ultimately, his highest social value. But neither his educational value nor his social value can be fully secured unless his physical basis is made adequate to the requirements of his long and arduous education. Physical

education, therefore, becomes an integral part of the general school curriculum.

But physical education cannot be conducted on the highest plane except under constant skilled supervision continued through the age of growth. Physical education pre-supposes good hearing, good eyesight, healthy bones, healthy joints, healthy circulation, healthy digestion, healthy muscles. To secure these is the aim of medical treatment in its many specialisms. These specialisms, if they are to yield their greatest service, must be organised, and it has been our effort to show how many of them can be effectually organised in or through the School Clinic.

But to establish a general case for school clinics is not enough. It is also necessary to show how a school clinic can be worked within school conditions. It is for this reason that so much detail of organisation, working and cost has been adduced.

It is worth noting that school clinics abroad have hitherto been devoted almost entirely to the treatment of teeth. The treatment of other organs—for example, the eye, the ear, the throat, the skin—have been by no means neglected; but their treatment has been organised rather in hospitals, or other special institutions, than in school clinics. In this country, the school clinic has developed on somewhat different lines; but the dental clinic is, of course, well in the front. These facts are easily explained. Bad teeth and healthy growth are incompatible. The dental clinic will, therefore, continue to occupy a prominent place in every general school clinic. Perhaps, however, it is for the moment receiving more than its proper share of attention; but it is the indicator of a vast problem, and some solution of the problem is essential to the production of national health and strength.

It remains only to add that the departments of treatment, however various and multitudinous in their details, constitute a single system. With us, the system is now a national system, and its aim is to conserve the health of the nation's children.

APPENDIX

DUNFERMLINE SCHOOL DENTAL CLINIC

TABLE I-GIRLS

NUMBER OF ATTENDANCES, DRESSINGS AND FILLINGS, EXTRACTIONS—YEAR 1912-1913

Age	August	September	October	November	December	1913 January	February	March
4	— — —	— — —	4 5 —	2 2 —	2 3 —	2 2 —	— — —	1 — 1
5	3 2 3	7 4 5	5 5 1	8 5 3	3 2 1	8 4 1	8 6 2	10 8 2
6	7 4 4	21 18 9	32 24 14	30 12 18	19 6 14	28 14 11	35 19 18	54 33 21
7	9 8 3	33 23 18	31 24 11	26 17 10	35 20 17	49 34 21	64 41 28	69 33 35
8	7 5 3	28 18 13	25 16 15	28 15 12	24 10 14	40 29 14	32 21 12	34 24 11
9	7 3 7	33 28 11	22 19 9	16 8 7	17 6 12	15 7 12	18 12 4	11 3 9
10	3 3 —	16 12 5	19 16 5	15 9 7	12 5 7	13 13 3	14 10 5	18 13 6
11	4 4 —	13 8 6	14 13 3	11 7 5	10 10 1	13 12 2	16 15 2	15 12 4
12	2 — —	11 11 2	9 10 —	11 6 7	5 5 —	9 9 1	13 9 5	19 16 5
13	3 — —	31 25 3	19 18 1	9 7 1	6 2 3	5 5 3	15 14 3	15 14 5
14	— — —	6 — —	4 — 1	— — —	— — —	— — —	— — —	1 2 —
Totals	45 29 20	199 147 72	184 150 60 (3 P.T.)	156 88 70 (3 P.T.)	133 69 69 (2 P.T.)	182 129 68	215 147 79 (2 P.T.)	247 138 99 (6 P.T.)

P.T. = Permanent Teeth.

DUNFERMLINE SCHOOL DENTAL CLINIC

TABLE II—BOYS

NUMBER OF ATTENDANCES, DRESSINGS AND FILLINGS, EXTRACTIONS—YEAR 1912-1913

Age	August	September	October	November	December	1913 January	February	March
4	Attendances Dressings and Fillings Extractions	2 1 1	4 4 —	2 3 —	— — —	— — —	— — —	— — —
5	Attendances Dressings and Fillings Extractions	26 21 10	17 16 6	10 8 3	6 4 1	20 8 9	14 8 5	11 6 4
6	Attendances Dressings and Fillings Extractions	16 7 12	14 6 12	17 6 11	11 5 6	22 9 10	24 14 10	28 12 15
7	Attendances Dressings and Fillings Extractions	15 10 6	17 8 15	21 10 10	27 12 17	38 31 14	67 39 37	74 39 31
8	Attendances Dressings and Fillings Extractions	20 12 13	17 13 5	15 8 6	20 14 9	26 21 5	33 20 19	27 14 17
9	Attendances Dressings and Fillings Extractions	9 9 1	19 9 7	16 5 12	4 1 3	13 10 4	9 5 7	8 5 4
10	Attendances Dressings and Fillings Extractions	8 6 1	13 6 2	9 5 —	7 6 —	8 4 —	9 8 4	14 9 3
11	Attendances Dressings and Fillings Extractions	24 13 6	20 15 2	18 12 1	13 11 1	16 6 9	20 15 1	13 13 1
12	Attendances Dressings and Fillings Extractions	16 12 8	24 16 1	11 4 1	5 3 —	15 11 2	20 10 5	18 9 3
13	Attendances Dressings and Fillings Extractions	8 10 1	7 3 3	8 7 3	3 3 1	3 2 —	6 6 —	7 7 —
14	Attendances Dressings and Fillings Extractions	6 7 1	6 4 1	1 — 1	— — —	— — —	— — —	1 — 1
Totals	Attendances Dressings and Fillings Extractions	150 108 60	158 100 54 (4 P.T.)	128 68 48 (1 P.T.)	96 59 38	161 102 55 (4 P.T.)	202 125 98 (1 P.T.)	201 114 79 (3 P.T.)

168 SCHOOL CLINICS AT HOME AND ABROAD

DUNFERMLINE SCHOOL DENTAL CLINIC

TABLE 3, SHOWING A SUMMARY OF TABLES 1 AND 2

Girls

	Attendances	Dressings and fillings	Extractions
August . . .	45	29	20
September . . .	199	147	72
October . . .	184	150	60
November . . .	156	88	70
December . . .	133	69	69
January . . .	182	129	68
February . . .	215	147	79
March . . .	247	158	99
	<hr/> 1,361	<hr/> 917	<hr/> 537

Extractions include 16 permanent teeth.

Boys

August . . .	34	24	12
September . . .	150	108	60
October . . .	158	100	54
November . . .	128	68	48
December . . .	96	59	38
January . . .	161	102	55
February . . .	202	125	88
March . . .	201	114	79
	<hr/> 1,130	<hr/> 700	<hr/> 434

Extractions include 13 permanent teeth.

GEOGRAPHICAL INDEX

BRITISH CLINICS

Aberdare, 109
 Aberdeen, 36, 50, 82, 103, 110
 Abertillery, 50, 109, 115, 119, 121,
 126, 131, 133, 138
 Alton, 56
 Ashton-under-Lyne, 108, 112, 115,
 126, 137
 Ayr, 36
 Barking, 109, 111, 114, 115, 120,
 122, 126, 130, 131, 133, 137
 Barry, 109, 118, 131, 133, 138
 Basingstoke, 56
 Bath, 107, 111, 129
 Batley, 108
 Beath, 36
 Beckenham, 109
 Bexhill, 108
 Birmingham, 53, 85, 107, 117, 135
 Bradford, 60, 68, 85, 87, 90, 94, 98,
 107, 112, 115, 116, 118, 119, 120,
 121, 126, 131, 133, 134, 135, 136,
 137
 Brighouse, 108
 Brighton, 40, 41, 98, 107, 112, 115,
 118, 119, 120, 122, 124, 133, 135,
 136, 137
 Bristol, 53
 Bromley, 108, 112
 Cambridge, 94, 108, 112, 115, 117,
 126, 127, 133, 136, 137
 Cambridgeshire, 90, 106
 Cambuslang, 36
 Cambusnethan, 36
 Canterbury, 112
 Cardiff, 107, 112, 120, 130
 Carnarvonshire, 90, 106, 111, 112,
 141
 Cathcart, 36
 Cheltenham, 53, 108, 112, 118, 121,
 127, 133, 136, 137
 Chester, 65, 107, 112, 115, 120, 126,
 138
 Chesterfield, 106, 111, 118, 133, 137

Chichester, 108, 112, 114
 Claycross, 106, 112, 141
 Claygate, 110, 113
 Coventry, 107, 112, 118, 120, 126,
 129, 130, 133, 135, 136, 139, 140
 Croydon, 107, 112, 116, 119, 120,
 126, 133, 137
 Denbighshire, 90
 Derby, 118
 Derbyshire, 106, 111, 112, 118,
 130
 Dorsetshire, 96, 106, 112, 115, 117,
 127, 129, 130, 136, 138
 Dundee, 36, 110
 Dunfermline, 33, 72, 82, 85, 88, 94,
 98, 102, 110, 113, 114, 115, 118,
 119, 120, 121, 126, 128, 129, 131,
 132, 133, 134, 137
 Durham, 106, 111, 112, 118, 127,
 138
 Ealing, 108, 112
 East Ham, 84, 90, 109, 112, 116,
 133, 137
 Edinburgh, 36, 110
 Enfield, 109
 England, 23, 24, 28, 32, 33, 106,
 111, 116
 Epping, 109, 112, 120, 130
 Essex, 91
 Exeter, 42, 43, 45, 50, 65, 112, 118,
 119
 Finchley, 109, 114, 118, 133
 Flintshire, 90, 91, 106, 111, 115,
 117, 127, 130, 134, 138
 Folkestone, 108
 Fraserburgh, 36
 Galway, 37
 Gillingham, 108, 112, 131
 Glasgow, 32, 36, 110
 Gloucester, 53
 Gloucestershire, 96

- Godalming, 109, 112, 115, 122,
 127, 128, 130
 Govan, 36, 110
 Great Crosby, 106, 111, 117, 131
 Greenock, 36
 Grimsby, 107
 Guildford, 40, 109, 112, 114, 119,
 128, 130, 131, 135, 136
 Halifax, 107
 Hamilton, 36
 Hampshire, 56, 57
 Harrogate, 109, 118
 Harrow, 110, 122
 Haslemere, 110, 113, 115, 120,
 128, 138
 Hastings, 107
 Hertfordshire, 56
 High Wycombe, 112
 Hindhead & Shottersmill, 110,
 113, 115, 116, 122, 128, 130, 131,
 136, 138
 Horsham, 110, 112, 114, 128, 138
 Hove, 41, 109
 Huddersfield, 107, 112, 131, 134,
 137
 Ilford, 110, 119, 120, 137
 Inverness, 36
 Ireland, 37
 Isle of Ely, 50, 106, 111, 112
 Kettering, 110, 115, 120, 122, 126,
 136, 137
 Kilmarnock, 36
 Kirkcaldy, 36
 Lancashire, 106, 111, 117
 Leith, 36
 Letchworth, 110, 113, 114, 127,
 128, 136, 138
 Lingfield, 110, 113, 115
 London, 40, 42, 48, 53, 84, 106,
 111, 112
 Blackfriars, 106
 Deptford, 63, 76, 84, 87, 90, 94,
 98, 100, 104, 106, 112, 115, 119,
 120, 126, 127, 131, 135, 136
 Fulham, 106
 Norwood, 104, 106
 Poplar, 80, 106, 112, 115
 Wandsworth, 106, 118
 Whitechapel (St. Cecilia's
 House), 106
 Woolwich, 52, 60, 61, 98, 106,
 112, 115, 117, 118, 119, 120,
 126, 129, 139
 Loughton, 115, 130, 138
 Loughton and Buckhursthill, 110
 Luton, 109, 112, 115, 121, 137
 Margate, 112
 Merthyr Tydfil, 107, 112, 115, 118
 Middlesbrough, 107, 111
 Midhurst, 110, 113, 114, 128
 Monmouthshire, 106, 111, 115, 116,
 117, 127, 137
 Morley, 109
 Nelson, 136
 Newport (Essex), 110, 113, 115,
 131, 133, 134, 136, 138
 Newport (Mon.), 50, 107, 112, 117,
 120, 122, 135, 136, 137
 New Windsor, 109
 Northampton, 107
 Norwich, 107, 112, 115, 116, 117,
 120
 Nottingham, 107, 112, 116, 118,
 120, 121, 126, 130, 131, 133, 134,
 135, 136, 137
 Oldham, 107, 115, 116, 120, 130,
 131
 Old Kilpatrick, 36
 Overton, 56
 Paisley, 36
 Perth, 36
 Peterhead, 36
 Plymouth, 108, 112
 Reading, 108, 112, 115, 120, 135,
 136, 139
 Renfrew, 36
 Rochdale, 108
 Rutherglen, 36
 St. Marybourne, 56
 Scarborough, 109
 Scotland, 24, 25, 31, 32, 33, 36,
 110
 Sheffield, 43, 46, 48, 51, 108, 112,
 116, 118, 119, 120, 126, 130, 131,
 137
 Shelford, 106
 Shettleston, 36
 Shipley, 110
 Shottersmill, 110, 113, 116
 Somersetshire, 90, 91, 106, 112,
 115, 116, 117, 127, 131, 138
 Southampton, 108
 Southend-on-Sea, 109, 111, 112,
 122, 130

- | | |
|--|--|
| Southport, 41, 108, 112, 137 | Wales, 23, 24, 28, 32, 116 |
| South Shields, 108, 112 | Walthamstow, 110, 111, 118, 137 |
| Stansted, 110, 115, 131, 138 | Warrington, 108, 112, 120, 130, 139 |
| Stanton, 110, 113, 115, 131, 133,
135 | Welbeck, 110, 113, 138 |
| Stapleton, 106 | West Ham, 107 |
| Stirling, 36 | Weybridge, 110, 113, 117 |
| Stroud, 53 | Whitchurch, 56 |
| Surrey, 40, 113 | Widnes, 109, 112, 121, 126, 127 |
| Sussex (West), 106, 113, 114, 127,
128 | Wolverhampton, 108, 112 |
| Sutton (Surrey), 110, 113, 115, 117,
127, 130 | Woodford, 110, 113, 115, 117, 128,
138 |
| Torquay, 109, 112, 115, 120, 126,
128, 136, 137 | Worthing, 109, 112, 115, 122, 126,
128, 131, 136, 139 |
| Tottenham, 110, 116, 133, 134 | Yeovil, 109, 111, 128 |
| Twickenham, 110 | York, 108, 115 |
| | Zetland, 24 |

FOREIGN CLINICS

- | | |
|----------------|-------------------------------|
| Australia, 142 | Italy, 155 |
| Austria, 143 | New Zealand, 156 |
| Belgium, 145 | Norway, 156 |
| Canada, 145 | Russia, 156 |
| Denmark, 146 | Spain, 158 |
| Finland, 146 | Sweden, 158 |
| France, 147 | Switzerland, 160 |
| Germany, 149 | United States of America, 162 |

The National League for Physical Education and Improvement

INCORPORATED 1905.

(With which is amalgamated the Mansion House Council on Health and Housing.)

Chairman of the Executive Council of the League:
BISHOP BOYD CARPENTER, K.C.V.O.

President of the Mansion House Council:
THE LORD MAYOR OF LONDON.

SOME RECENT PUBLICATIONS

ORGANISED PLAY AT HOME AND ABROAD.
(Illustrated.) 111 pp. Price 1s. net, postage 2d.

INFANT WELFARE CENTRES: The Work of Infant Consultations, Schools for Mothers, and similar Institutions. 52 pp. Price 6d. net, postage 1d.

REPORT OF A CONFERENCE OF HEALTH-PROMOTING INSTITUTIONS, held at the Guildhall, London, December 1910. 171 pp. Price 1s. net, postage 2d.

Containing Papers and Discussions on :

How to Work a "School for Mothers."

Infant Welfare Schemes Abroad.

Day Nurseries.

What may be accomplished by Children's Care Committees.

Health Societies: Their Aims and Opportunities.

The Co-ordination of Health-Promoting Agencies.

HEALTH VISITING IN RURAL DISTRICTS, containing Letters from Miss Florence Nightingale. 61 pp. Price 3d. net, postage 1d.

THE HEALTH VISITOR. 32 pp. Price 1d., postage ½d.

HEALTH POSTERS. (In Life Colours, on stout manilla paper, size 35 × 45 ins.) Price 2s. each, post free.

A Warning to Parents on Dangers from Fire.

The Evils of Push-carts for very Young Children.

For further particulars and Specimen Copies of Leaflets on "How to Bring Up a Baby," "The Care of the Teeth," "Instructions for Ensuring the Supply of Clean Milk," "Fresh Air and Ventilation," "Cleanliness in the Home," "Food and Drink," "A Health Lecture for Village Mothers," and many others, apply to the Secretary,

National League for Physical Education and Improvement,
4, TAVISTOCK SQUARE, LONDON, W.C.

SCHOOL DENTAL CLINICS

WE supply complete
dental outfits for
School Clinics from
£25

DETAILED ESTIMATES ON REQUEST

THE . . .
Western Dental Manufacturing Co.,
74, Wigmore Street, LONDON, W. ^{LTD.}

AND AT

BRISTOL, CARDIFF, and NOTTINGHAM

KOLYNOS and CHILDREN

WHAT a clean mouth does for the child has been most convincingly proved by the results accomplished by the Dental School Clinics in this country as well as abroad.

Dr. George Newman's Important Report upon the health of children refers to Dental Diseases "as largely due to total neglect of cleanliness of the mouth in childhood."

If the mouth is kept clean and sweet, much dental caries is arrested and many diseases of children are prevented.

Give your children Kolynos Dental Cream, and they will enjoy using it and remember with pleasure the toothbrush hour.

**MANY OF THE MOST PROMINENT
DENTISTS RECOMMEND KOLYNOS
BECAUSE:**

KOLYNOS does not injure the delicate enamel of the teeth as gritty powders do.

KOLYNOS is a powerful germicide, destroying the germs of decay.

KOLYNOS thoroughly cleanses the teeth, the soft and hard tissues of the mouth.

KOLYNOS is absolutely harmless and most pleasant in use.

KOLYNOS INCORPORATED

4, *Farringdon Avenue* :: :: *London, E.C.*

SEND FOR FREE SAMPLE AND BOOKLET, "THE TOILET OF THE MOUTH."

The Dental Manufacturing Co. Ltd

SCHOOL DENTAL CLINIC EQUIPMENT

IS EVERYWHERE GIVING MOST COMPLETE SATISFACTION.

THE rapidly growing recognition of the importance of the subject and the increasing number of requests we are receiving for details have made it necessary for us to issue a second, and amplified, edition of **OUR PUBLICATION** on how best to equip a School Dental Clinic. In this compilation we have included a ruled form of estimate on which are printed the names of requisite appliances,

A corner of the Reading School Dental Clinic, equipped by the Dental Manufacturing Co., Ltd.



medicaments, instruments, etc., and three sets of cash columns, to enable the Dental Officer to make alternative **ESTIMATES OF COST** according to funds. The appliances, etc., are profusely illustrated, and the pages in which the articles are described are referred to in the estimate form. *A copy will be sent free on application.*

Copies of "The Inception of a School Dental Clinic," by Vernon Knowles, L.D.S., and "The Report of the Dental Treatment at the Worthing School Clinic," by C. Doswell Wallis, L.D.S., can also be had free, on application.

The Dental Manufacturing Co. Ltd

Alston

House, Newman St

Branches

Manchester, Newcastle-on-Tyne,
Glasgow, Dublin, Moscow.

LONDON, ENGLAND,

SCHOOL DENTAL CLINIC OUTFITS

OF ANY VALUE TO SUIT REQUIREMENTS.

Send for our Illustrated List, which will be forwarded post free on application.



We can furnish in this or any other style which may be selected.

SCHOOL DENTAL CLINICS

THEIR FOUNDATION AND MANAGEMENT.

By EDWARD WALLIS, M.R.C.S., L.R.C.P., L.D.S.

Dental Surgeon and Lecturer on Dental Surgery, King's College Hospital; late Dental Surgeon, Victoria Hospital for Children, Chelsea, and L.C.C. Industrial Schools, Feltham.

Large 8vo, cloth, 60 pages and Index, 12 blank pages for Memoranda, and 17 Illustrations.

Price net 3 ^{s.} 6 ^{d.}

CLAUDIUS ASH, SONS & CO., LTD.
5-12, Broad Street, Golden Square, LONDON, W.

ESTABLISHED 1820.





YC 04315

294342

Cruickshank

LB3A13

q7C7

UNIVERSITY OF CALIFORNIA LIBRARY

