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SCHOOL DENTAL CLINICS

C. E. WALLIS



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SCHOOL DENTAL CLINICS

THEIR FOUNDATION AND MANAGEMENT.

BY

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PREFACE.

I DESIRE to express my great indebtedness to Sir George Newman and Dr. W. H. Hamer for many valuable suggestions ; also to Mr. F. Breese and Mr. B. North, who have kindly looked through my proofs.

To Professor Jessen, of Strasburg, and the chief dentists to the School Dental Clinics at Berlin and Cologne I have to express my thanks for much information and the loan of photographs.

C. EDWARD WALLIS.

38, QUEEN ANNE STREET,
LONDON, W.

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SCHOOL DENTAL CLINICS.

CHAPTER I.

INTRODUCTORY.

WHEN it has become evident to the school medical authorities in any particular place that dental treatment for the children attending the elementary schools is urgently called for there arises in many cases one great difficulty.

It is the task of convincing the members of local education authorities that the benefits to be provided are not out of proportion to the probable cost.

At the present time those who have given their time to this subject know that not less than 75 per cent. of our school children are in need of dental treatment, not merely for the stopping of cavities or the extraction of teeth that ache, but, above all, for the prevention of a large number of diseases which follow on chronic oral sepsis.

Putting aside such obvious gains to the child as improved health and appearance, to say nothing of freedom from toothache, let us consider some of the benefits that would follow systematic dental treatment in our public elementary schools.

The recent Sickness and Invalidity Bill has recognised that one of the greatest scourges from which we suffer is tuberculosis, and proposes that a large sum of money should be set aside for the erection of sanatoria in which cases of consumption can be treated.

This, of course, is satisfactory as far as it goes, but inasmuch as prevention is the main characteristic of modern medicine rather than cure, it is worth while to quote the experience of Professor Moeller, an eminent German physician, who declares that there is no greater weapon against tuberculosis than the possession of a healthy mouth.

It follows, therefore, that, if we are to stamp out completely

this fell disease, one of the first steps to be taken is to see that our future citizens have their mouths made healthy before entering upon their wage-earning lives.

Dental surgeons know that a small amount of skilled dental attention, accompanied by oral hygiene, during childhood avert much dental disease in later life, besides which the importance of a healthy mouth during the period of growth of a child can scarcely be over-estimated.

A point of great importance was demonstrated some years ago at the London Fever Hospital, where it was shown that the incidence of deafness, enlarged glands, albuminuria, and several other conditions was very great in the case of those children with marked oral sepsis; it seems, therefore, that had these children had their teeth attended to in school clinics many of these serious complications might have been averted and the sum total of future deaf people amongst us proportionately diminished.

Some years ago the writer made a long and detailed inspection of the teeth of the children in a representative London County Council school, and found that the children with the most unhealthy mouths were in most cases below the average of their age in general physique and weight; it was found also that those whose mouths were most septic were dull and apathetic, and usually one or two standards below where they ought to have been.

These observations have been confirmed by similar ones made by Professor Jessen in Germany, and it is of importance that the education authorities of this country should realise that much of the ratepayers' money is wasted on trying to instil knowledge into children who are too ill to take it in.

Professor Jessen holds the same view as Professor Moeller in regard to a healthy mouth being a great preventive of tuberculosis, and further declares that "*there is no department of public health which renders so large a return for money expended as the system of treating children's teeth in school clinics.*"

There is another very serious phase in our national life which is affected by the question of the teeth, viz., its effect upon the naval and military recruiting of the country.

In a recent report of the War Office it was shown that a very large percentage of would-be soldiers was rejected on account of diseased teeth alone, and it is well known that during the South African War the invaliding on dental grounds attained very serious dimensions; while at the military manœuvres in

Wiltshire in 1909, a large number of reservists were found to be unfit for the hardships of peace campaigning owing to the deplorable condition of their teeth.

It is well known by dentists that if these rejected recruits had had their teeth looked after during their school lives they would in all probability have grown up with healthy teeth as well as more healthy bodies, and thus have been made available for their country's defence.

From Feltham and Mayford Industrial School, under the London County Council, many hundreds of boys have been sent into the Army as bandsmen, shoemakers, and so forth, and, in spite of the rigid dental regulations for recruits, there can be found no record of a boy having been rejected on account of defective teeth—the reason, of course, being that these boys received regular dental attention at their schools.

Let us now look at all this from the point of view of the ratepayers. It has been stated that half the poor rate is due to sickness, therefore a comparatively small sum expended in making healthy the mouths of our school children and future citizens would avoid an enormous expenditure upon the maintenance of hospitals and infirmaries when these children grow up and suffer from the preventable diseases which should have been averted by proper dental treatment during school life.

In short, the benefits to be derived from skilled dental treatment of elementary school children may be summarised as follows :—

1. General improvement in health and physique of the poorer classes.
2. Improvement in school attendance as well as school work.
3. Increased resistance to disease, especially tuberculosis.
4. A great increase in the *number* of available naval and military recruits, as well as an increased supply of healthy citizens to carry on the industrial work of the country.

CHAPTER II.

SCHOOL DENTAL INSPECTION.

WHILE under an ideal system every school child should have its teeth regularly attended to, it is evident in large centres of population that the treatment must at first be limited to a comparatively small number, and for this reason some age limit must be imposed.

In London, where seldom less than 80 per cent. of the elementary school children need dental treatment, it has been decided, in accordance with the views of the Board of Education, that the ages at which this can be obtained are at six, seven, and eight years, which means that school children receive dental attention at or about the time of the eruption of their permanent teeth, after which period they should be seen at regular intervals so long as they remain at school.

Though this rule has been made in districts in which clinics have been established, exceptions are made in the case of children in pain, or recommended for treatment as the result of the inspections made by the school doctors.

When first the subject of dental clinics was mooted in London, it was thought by some that the ordinary medical inspections would provide a sufficiency of cases to keep the clinics supplied with work.

This, however, was speedily shown to be a fallacy, as but a small percentage of those needing treatment were discovered by the ordinary medical examiners, added to which the small carious cavities most amenable to conservative treatment were in the majority of cases undetected.

The explanation, as a rule, is that the purely medical examiners, having had no special dental training, failed to discover such pin-point or interstitial cavities as can only be found with the aid of a dental probe and mirror.

The plan which works out most satisfactorily is that a dentist attached to the clinic which serves the particular locality or group of schools should devote one or more sessions in each week to the work of dental inspection.

At each of these inspections a dentist should inspect from eighty to a hundred children, of whom usually about 90 per cent. are found to require dental treatment. Whatever plan is adopted of recording the names of those needing treatment, whether by cards on the index system or by lists on printed forms, it is well that urgent cases—by which one means usually highly septic mouths—should be underlined, in order that special efforts may be made to obtain early attention.

It is seldom advisable for a dental examiner who has any regard for the future of his eyesight to examine more than a hundred children at each sitting, as the eye-strain involved in making so many minute observations may lead to much ophthalmic trouble in later life.

In the writer's opinion, the labour of recording on a dental "*chart*" what is required is waste of time, as that can be readily seen when the child is put in the operating chair. All that is required in the school inspection is to record the fact that the child requires treatment, and that the child's name is underlined where urgency is indicated.

It is convenient to have different coloured cards or forms for boys and girls respectively, and in London blue is the colour used for the boys' and white for the girls' cards for children requiring treatment.

It being decided, then, who is to carry out the dental inspection, and at what ages the children are to be inspected with a view to treatment at a clinic, the inspecting dentist should notify the head teacher of the school concerned that on such and such a day he will visit the school for the purpose of examining the boys or girls, as the case may be, aged six, seven, or eight years, and that he would like some 100 children of these ages to be ready for the visit.

Notifica-
tion of
school
teachers.

The children should then be ready when the dental inspector arrives, and pass in front of him in a line, one by one, while he inspects each child's teeth with a dental probe and mirror; it is scarcely necessary to add that the room or hall selected for the purpose should be well lighted, and that the dentist should have the *light behind him* and the child in front of him.

As either cards or lists of those requiring treatment have to be filled in, it is highly advantageous to obtain the services of one of the teachers for this purpose: by this means much time is saved, and in addition the interest and co-operation of the teacher can be aroused if a little trouble is taken to explain any points of interest that may arise.

Co-operation of teachers.

The co-operation of the teachers, and, above all, of the head teacher, is invaluable in inducing parents to send their children to a clinic for dental treatment, and for this reason no opportunity should be lost of exciting their interest in the care of the teeth.

Use of anti-septics.

The inspecting dentist should be careful to have at his side a small bowl of some antiseptic lotion in which to dip his instruments before inspecting each child; 1 per cent. Lysol lotion is convenient for this purpose, or a solution of 1 in 3,000 iodide of mercury, which can be readily prepared from some compressed tablets such as are sold by Burroughs & Wellcome, Parke Davis, and similar firms.

This is of the highest importance, as, quite apart from the risk of infection being carried from one mouth to another, there is always the possibility of some litigious parent bringing a charge of transmitting disease against a dental examiner who may appear negligent in this respect.

Speaking generally, it is advisable that all children who are found to be in need of dental treatment, however slight, should be sent to the clinic, as those who require little treatment do much to encourage others who hesitate to attend for fear of being hurt.

The stopping of pin-point cavities takes but a short time, and may avoid an infinity of pain and trouble in later life, besides which the removal of septic, often painless, roots may make an enormous difference to a child's future growth and general health.

Schools to be selected for inspection.

The inspecting dentist, having obtained from the local education authority a list of schools within a certain radius of the clinic, should commence his inspection at those nearest thereto, and as his inspections progress should gradually enlarge his sphere of influence by inspecting schools further away.

The children living near by are naturally more easily taken to a clinic, and, in addition, serve to advertise gradually the work that is being done to the schools a little further away, and so on, till the whole neighbourhood becomes acquainted with the advantages to be obtained from skilled dental attention.

The presence of parents at dental inspections is not usually desirable, as, owing to the large number of children inspected at each session, a proportionate number of parents could seldom be conveniently accommodated on the school premises, and, in addition, the inspecting work of the dentist would be thereby considerably delayed.

The following summarises what has been found in London

a convenient procedure for carrying out the work of dental inspection :—

1. The head teacher of the school about to be inspected is notified ; the schools nearest the clinic being selected at first.
2. The children are then dentally inspected, and those requiring treatment have their names recorded in the school " Medical Register," all urgent cases being underlined.
3. The parents of these children are then notified by the " Care Committee " of the school, and their full written consent obtained before any arrangements for treatment are made (M.O. 243).
4. A Medical Treatment circular (M.T. 1) is next sent to the parent, giving full directions how to proceed, as well as an appointment card notifying the day and hour at which the child is to attend the clinic.

FRONT.

POST CARD.

THE ADDRESS TO BE WRITTEN ON THIS SIDE.

AFFIX
HALFPENNY
STAMP.

*HEAD TEACHER,**Dept.,**School,*

M.O. 25.

M.O. 25.

London County Council.

BACK.

The School Dentist will visit the School
on the _____ inst., at _____ o'clock, for
the purpose of inspecting the teeth of children
aged 6-7, 6-8 years.

School Medical Officer.

POSTCARD USED TO NOTIFY HEAD TEACHERS OF THE VISIT OF AN
INSPECTING DENTIST.

M.O. 243.

London County Council.

School.**CARE OF TEETH.**

To the Parent or Guardian of

The school doctor reports that your child's teeth require treatment. If you are unable to obtain treatment, please fill up the form below and send it to the Head Teacher.

(Signed on behalf of the School Care Committee.)

[P.T.O.]

.....

To the Head Teacher,

School.

I desire to have my child's teeth attended to, and hereby give my consent to the necessary treatment.

Signature of Parent

THE ABOVE IS THE PARENT'S CONSENT CARD AT PRESENT IN USE
IN THE LONDON COUNTY COUNCIL SCHOOLS.

C.C.

Medical Treatment.

Circular M.T. 1.

Revised.

London County Council.

EDUCATION OFFICES.

1911.

SIR (or MADAM),

I understand that you wish to obtain medical treatment for your child _____

Suitable treatment will be provided at the ^{hospital} centre named on the enclosed card, if the following conditions are observed :—

1. The entire card must be presented.
2. The child must be taken on the date named on the card.
3. The child must be taken by one of the parents or some other responsible person.

It is hoped that you will be able to avail yourself of the arrangements which have been made.

The charge for the treatment is one shilling. This charge may be reduced to one penny if the School Care Committee are satisfied that parents are regular subscribers to the Hospital Saturday Fund, or that parents are unable to pay one shilling. The amount will be collected from you by the school attendance officer. The section of the Act of Parliament dealing with this matter is printed below.*

I am, Sir (or Madam),

Your obedient Servant,

R. BLAIR,
Education Officer.

Mr. (or Mrs.) _____

* LOCAL EDUCATION AUTHORITIES (MEDICAL TREATMENT)
ACT, 1909.

SECTION I.—Where any local education authority provides for the medical treatment of children attending any public elementary school under section thirteen of the Education (Administrative Provisions) Act, 1907, there shall be charged to the parent of every child in respect of any treatment provided for that child such an amount not exceeding the cost of treatment as may be determined by the local education authority, and in the event of payment not being made by the parent, it shall be the duty of the authority, unless they are satisfied that the parent is unable by reason of circumstances other than his own default to pay the amount, to require the payment of that amount from that parent, and any such amount may be recovered summarily as a civil debt.

H 38.

VOUCHER CARD.
(DENTAL.)**London County Council.**

NORWOOD SCHOOL TREATMENT CENTRE,
3, CHESTNUT ROAD, WEST NORWOOD, S.E.

Dental treatment will be provided for.....
at the above-named centre if the child attends with this card on
..... day, the at o'clock.

Mr. (or Mrs.).....W. H. HAMER,
*School Medical Officer.*SPECIMEN OF DENTAL APPOINTMENT CARD AS USED AT SCHOOL
TREATMENT CENTRES IN LONDON.

CHAPTER III.

ACCOMMODATION AND SCOPE OF TREATMENT.

ASSUMING that an education authority has decided upon establishing a school dental clinic in a large centre of population, and that one is asked to undertake the task of arranging and equipping such an institution, the question that immediately arises is, What accommodation is required?—how many rooms, and how are they to be arranged?

Let us suppose that a beginning is to be made in a modest way—that is to say, with one operating chair only—the *minimum* number of rooms required is three, viz., a large room to be used as a waiting room, furnished inexpensively, but as cheerfully as possible; a large room with a north light, if obtainable, to be used as a surgery; and another to be used as a dressing room or recovery room in reserve in case of need.

The surgery must have a lavatory basin fitted with hot and cold water, and in addition a suitable sink for the cleaning of instruments and appliances, which, too, is available as a place for the children to rinse their mouths.

Floor
covering.

It will be found that a suitable floor covering for school clinics is linoleum or cork carpet, which, besides being inexpensive, lasts well and is easily cleaned.

General
arrange-
ment of
rooms.

It is of the utmost importance that the surgery should be out of earshot of the waiting room, as there is nothing more demoralising to children who are awaiting treatment than to hear cries from those who are being operated upon.

It is for this reason that both the waiting room and the surgery should have thick doors, and also, if possible, be separated by a passage, flight of stairs, or large intervening space.

Location
of clinic.

It is quite unnecessary to construct a special building for the purpose of a dental clinic, and here it may be suggested that an ordinary suburban shop with a side door and passage as well as the ordinary shop door answers the purpose admirably.

At the dental clinic which is located in the Wandsworth School Treatment Centre in Garrett Lane, Wandsworth, the building is simply, as suggested above, an ordinary suburban shop on the south side of a main thoroughfare; the shop has

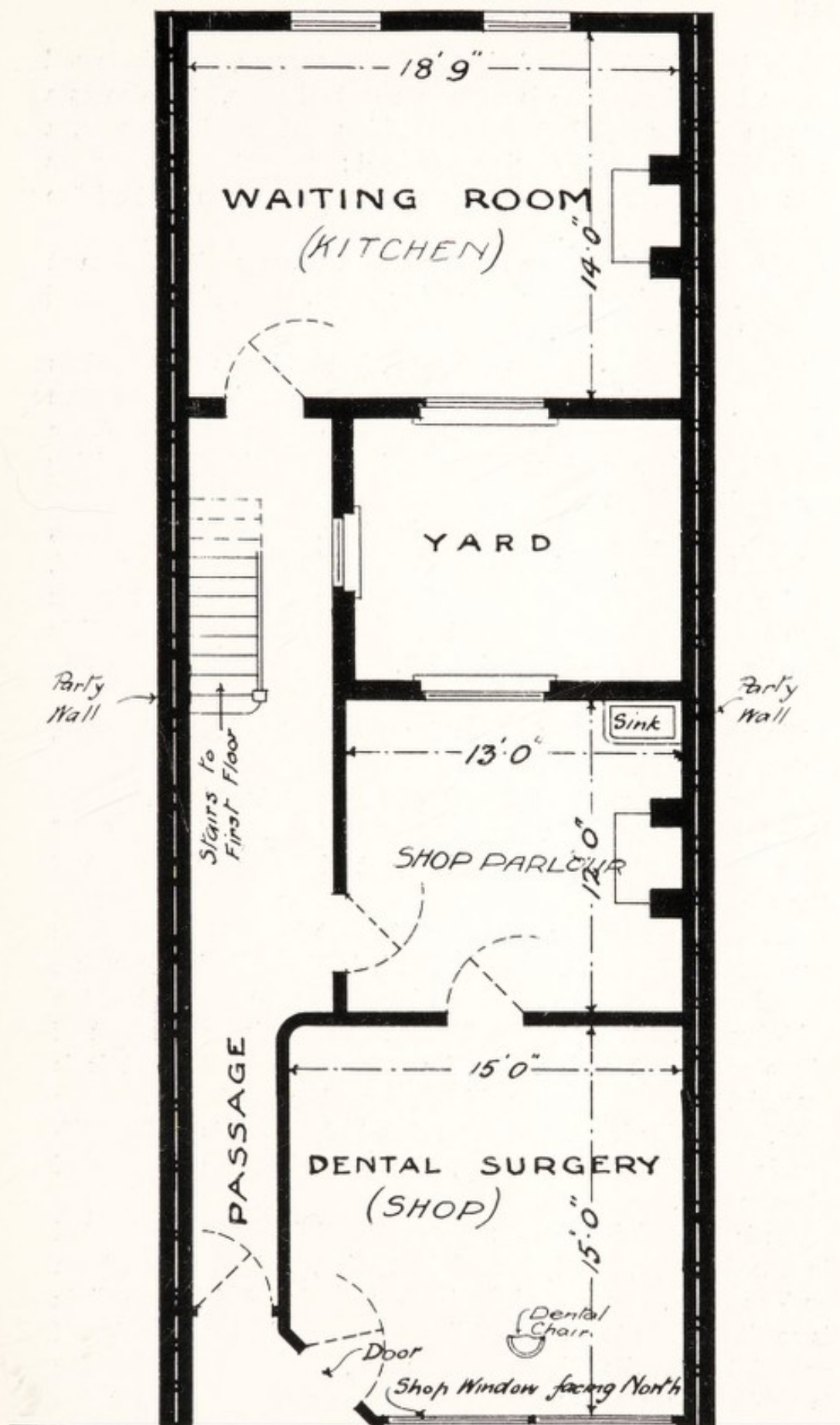


FIG. 1.—The above plan shows an ordinary suburban shop turned into a school dental clinic similar to that at the "School Treatment Centre," Garrett Lane, Wandsworth.

been turned into an admirable dental surgery, and the small room behind the shop is used as a sort of office, and also as a mouth rinsing and instrument washing and sterilising room, a suitable water supply being provided; when these rooms are not required for dental purposes they are used as part of the general medical clinic.

There is a side door leading into a passage with a room at the end which is used as a waiting room, and which is out of earshot of the surgery.

The door of what was the shop, but which is now used as a surgery, provides for a direct exit for those children who have been seen, and obviates the objection to those who have been already treated meeting and comparing notes with those waiting to be attended to.

In the case of the dental clinic at St. George's Dispensary, Blackfriars Road, a disused public-house has been made use of, which answers the purpose admirably, as the total rent is but £50 a year, and the arrangement of rooms enables all the essentials mentioned above to be carried out.

The rooms not required for dental purposes are used as an ordinary general school clinic for the treatment of adenoids, enlarged glands, and so forth.

In some cases a suite of rooms can be obtained in a centrally situated school building, but, as already pointed out, it is essential that the operating room should be out of earshot of the rest of the school.

It may not appear a matter of great importance to those unaccustomed to such matters, but it is highly desirable that a school dental surgery should not be exposed to the heat of the mid-day sun. Treating the teeth of children is at the best of times somewhat trying, and for any degree of comfort it is essential that the place should be reasonably cool in the summer time, especially if the room happens to be what is called half-studio lighted—that is to say, with a considerable expanse of glass roofing.

It is also advisable that the dental clinic should be located in a well-known, readily accessible locality, preferably on a tram or 'bus route. In one of the leading provincial cities the clinic is so situated as to be almost "non-findable" to those not well acquainted with its neighbourhood; and, moreover, the difficulty is utilised as a ready excuse on the part of parents not too willing to send their children for treatment.

Having, then, obtained the necessary accommodation, and

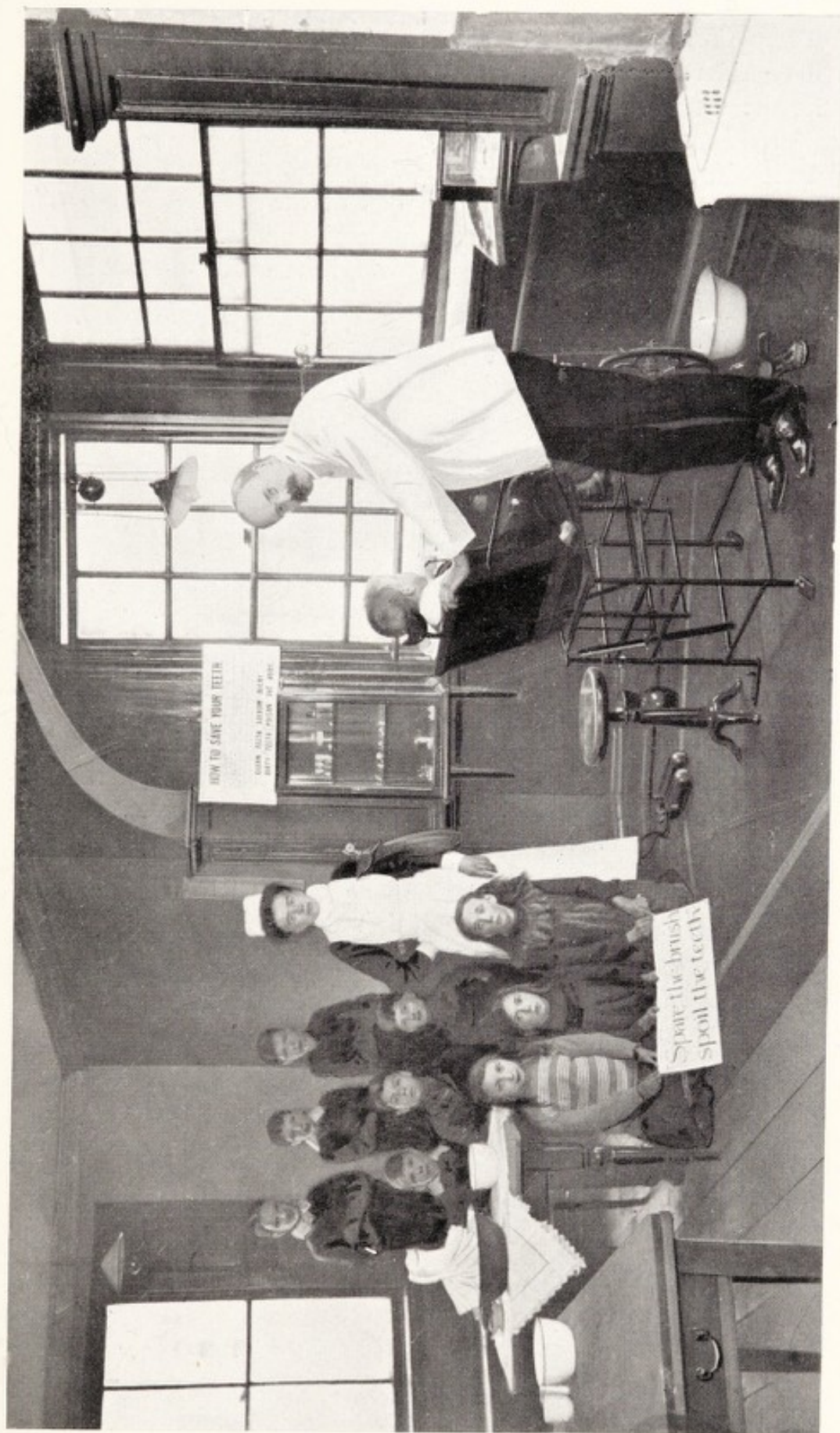


FIG. 2.—SCHOOL DENTAL CLINIC AT ST. GEORGE'S DISPENSARY, BLACKFRIARS, LONDON.
This was equipped at a cost of under £40.

before proceeding to the equipment of the clinic, it is essential to consider the scope and extent of the treatment to be provided for the school children.

Inasmuch as a very large number of children have to be dealt with, one must at the outset realise that the principle to be carried out is "the greatest good of the greatest number," by which one means that an undue time must not be spent upon individual cases, as, for example, in carrying out elaborate root treatment extending over several visits.

The number of children that can be seen and treated in a half-day works out at an average of between eight and ten new cases.

No regulation work involving the use of apparatus should be carried out, except such as can be performed by judicious extraction or the use of immediate regulation forceps like those designed by Professor Grevers, of Amsterdam.

In addition to the simple stopping work carried out at a clinic, the use of solid or powdered nitrate of silver for arresting superficial caries in temporary teeth is of the greatest service, though it should be emphasised that it must be the salt itself and not a solution, which is well-nigh useless for the purpose.

The point above all others to be borne in mind in the treatment of children's teeth is the serious results that follow oral sepsis, and for that reason the author is a thorough believer in the paramount importance of a "clean mouth" to the health and growth of a child.

Unless a dentist is quite clear in his mind and firm in this respect, he is apt to yield to the persuasion of parents or the fears of the children, and leave unextracted the very septic, perhaps painless, roots that are responsible for enlarged glands and varying degrees of chronic toxæmia.

Anæsthetics.

The question as to whether anæsthetics such as nitric oxide should be used in school clinics has in London now been decided; for some time no anæsthetics were provided, with the result that there was soon an accumulation of cases of oral sepsis arising from highly septic broken-down permanent teeth which urgently needed extraction, added to which it almost necessarily followed that those who had the most unhealthy mouths would remain untreated and sooner or later join the ranks of the physically unfit.

An anæsthetist is now attached to each of the London clinics, and pays weekly or fortnightly visits, on which are collected together the worst cases of oral sepsis; he is paid at the same

rate as the school dentists, namely, £50 per annum for one half-day's work in each week during the school year.

It is highly important that the dentists attached to clinics should not be too ready to give gas to all who ask, or they will soon find every parent and child demanding "gas" for the most trivial operations, such as the pushing out of loose temporary roots.

It must be made clear to parents that anæsthetics are only given for the very bad cases which are collected together, say, once a fortnight. One is often asked how many gas cases can be dealt with in one half-day, and in the writer's opinion twenty is the outside number that should be attempted, and then only when the administrator is a skilled anæsthetist in dental work.

In some cases it may be found desirable to give either ethyl chloride or gas and ether where a large number of broken-down teeth have to be removed at a single visit.

Local anæsthetics, in the writer's experience, have not proved on the whole successful in elementary school work; dentists, however, attached to clinics must decide the question for themselves, bearing in mind the importance of avoiding any difficulties that may arise from local sloughing or toxic symptoms which might lead to litigation on the part of troublesome or cantankerous parents, and thus indirectly bring opprobrium upon the school dental clinic concerned.

Local an-
æsthetics.

CHAPTER IV.

THE STAFF AND EQUIPMENT OF A CLINIC.

THE staff of a clinic such as has been described depends upon the number of days or half-days the clinic is to be open, and here must be discussed the controversial question of whether the dentist attached to a clinic should be a whole or a part time officer.

It is not always realised that the selection of a suitable dentist for a clinic, particularly in its initiatory stages, is a matter of considerable difficulty. It is a common impression that one can easily get a young, recently qualified dentist who can do the work; but those who have had much to do with children and, above all, with the parents of the poorer classes, will generally recognise that the tact, diplomacy, and firmness of character needed to deal not only with the children themselves, but also with their frequently exacting, often suspicious, and occasionally pugnacious parents, are more likely to be found in practitioners of experience.

The dentists attached to the clinics in London have had from time to time very unpleasant experiences in their relations with parents, which have in many instances taxed their diplomacy to no small extent.

Again, it is essential that a school clinic should *be not unpopular*; one can hardly expect such a place to be popular, in the ordinary sense of the word, and it is, therefore, only by the display of infinite patience and tact, as well as firmness, that a clinic can be carried on in a neighbourhood which may be composed of poor and ignorant people.

In view of the fact, moreover, that school dental work is tedious, as well as affording little or no scope for developing the mechanical ability so essential to high-class work in a private practice, it is certainly unwise for a young man who ultimately intends to set up for himself to devote, say, three years to a school clinic as a whole-time officer.

In short, it is the opinion of the writer that a young man is exceedingly foolish to become a whole-time dentist to a school

clinic, and that an education authority would be exceedingly unwise to appoint such a man, unless one can be found who is so public-spirited as to be content to devote his whole life to school dental work, as well as remain at a maximum salary of about £300 a year.

The alternative to a whole-time officer is, of course, a part-time dentist, and, provided he is paid at the rate laid down by the School Dentists' Society—namely, £50 per annum for one half-day's work in each week—there should be little difficulty in obtaining the services of dentists of experience who would be glad to earn a sum of, say, £100 per annum as a substantial contribution towards their house rent.

This plan of employing part-time dentists has been carried on in London, and on the whole has worked well; the main advantage being, as suggested above, that one obtains the services of dentists of experience as opposed to recently qualified young men with no knowledge of the difficulties of dealing with parents and guardians.

Part-time
dentists.

The fewer dentists there are on the staff of a particular clinic the better, as it has been found that where there are several dentists, each attending on different days, and perhaps living miles from one another, the work of co-ordinating the work done becomes exceedingly difficult, and the harmonious working of the clinic may be much impaired.

Beside the dental staff, a nurse must be provided who is not only accustomed to the management of children and parents of the hospital class, but who is also willing to help in the mixing of stoppings and so forth.

Nursing
staff.

In London the nurses who are attached to the so-called "treatment centres" are paid £80 per annum for full-time work, and proportionately less when engaged for only a portion of the school week.

An attendant or caretaker who can keep troublesome children in order is also essential, and who, when the clinic is closed, should be responsible for the general cleaning and so forth.

The nurses who actually assist in the dental work are usually part-time officers, and attached or associated with each treatment centre there is also a local paid organiser who arranges the necessary appointment for the attendance of the children.

The necessary accommodation, then, having been obtained, it remains to carry out the equipment of the dental surgery in accordance with the scope of work previously agreed upon.

Equip-
ment.

Before enumerating what is required, it must not be forgotten

that a level floor is necessary for the proper steadiness of the operating chair and dental engine.

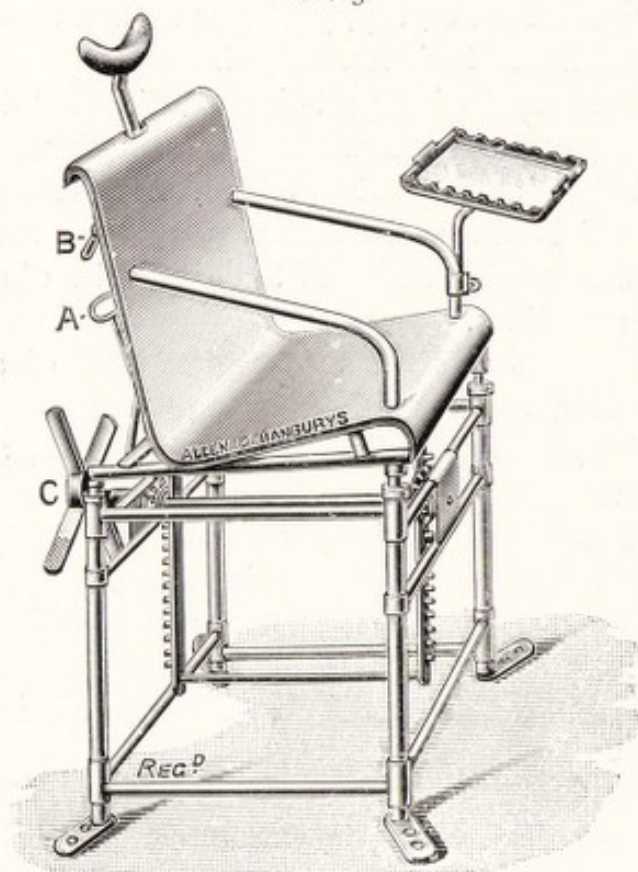
Necessity
of level
floor.

In the case of the Blackfriars clinic, where the floor was very old and worn, the difficulty was surmounted by the use of a patent flooring known as "Durato," which was laid on the top of the rough boards; besides being readily cleanable as well as fireproof, it was inexpensive, and may, therefore, be said to have answered its purpose admirably.

Operating
chair.

The provision of a suitable operating chair, which should

FIG. 3.



be inexpensive and at the same time adapted for school clinic work, has now to be considered.

When engaged in equipping the Blackfriars clinic, the author searched everywhere, not only in the English dental depôts, but also the Exhibition of the International Dental Congress, then meeting in Berlin, for a suitable chair.

None being discoverable, the author, with the assistance of Messrs. Allen & Hanburys, designed the chair depicted here.

It is japanned black, and, besides being readily cleanable, has no recesses for harbouring vermin—a point of much importance when dealing with the poorer children of a large city.

This chair is designed for the use of children only, and

answers its purpose well where rigid economy may be a point of importance.

Since then Messrs. C. Ash, Sons & Co. have, at the author's suggestion, constructed a "pump" chair presenting the following characteristics :—

1. An absence of nickel or other plating.
2. An absence of recesses and crevices for the harbouring of dust or vermin.
3. A seat that is covered with cork linoleum, which, besides

FIG. 4.



being readily cleanable, has the great advantage of being rough and not slippery.

4. Movable foot-rest ; by doing away with the ordinary foot-rest, it has been found that struggling children can be more easily controlled, since they have no longer a support against which to press their feet.

There is no special feature about a suitable dental engine beyond the fact that in order to avoid unnecessary labour the nickel portion should be blacked ; in short, everything in a clinic should be designed to avoid the wasting of time upon polishing metal work.

Dental
engine.

FIG. 5.

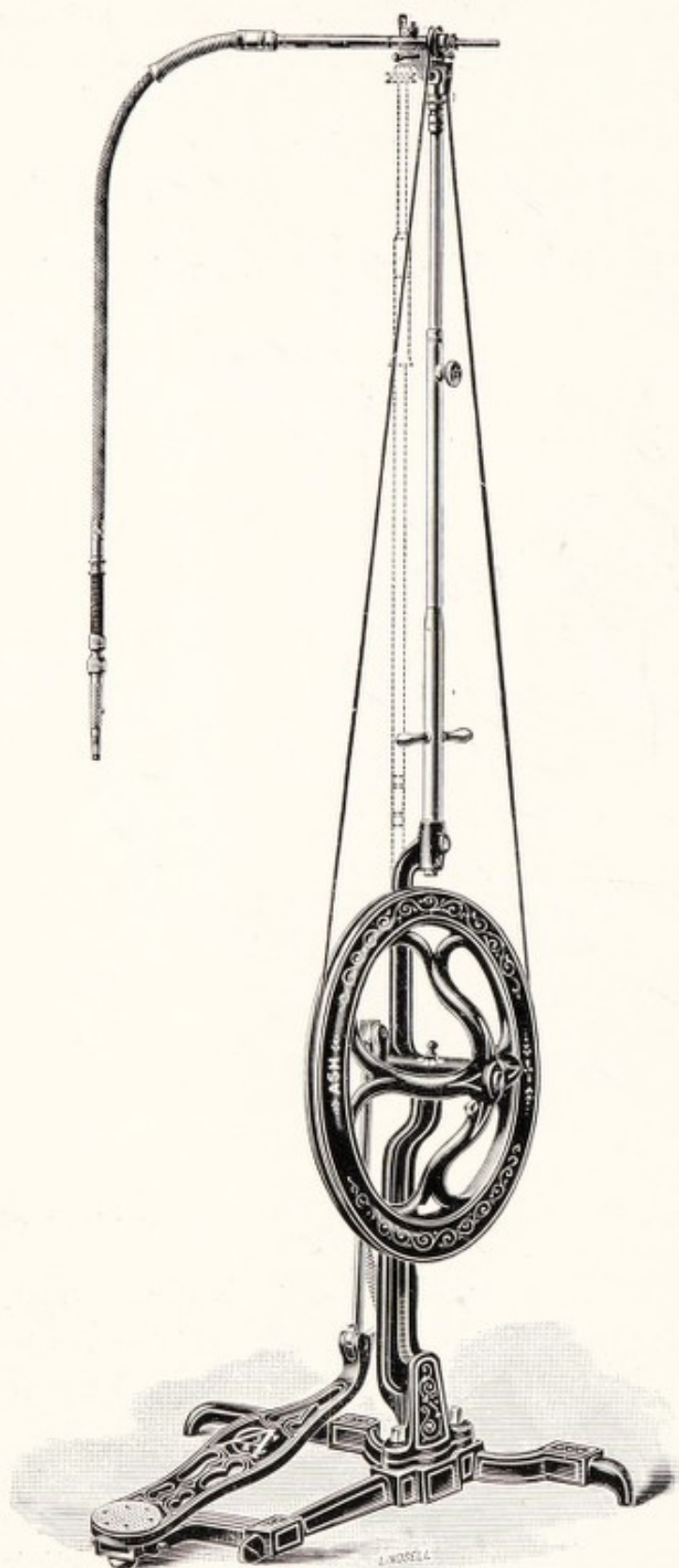
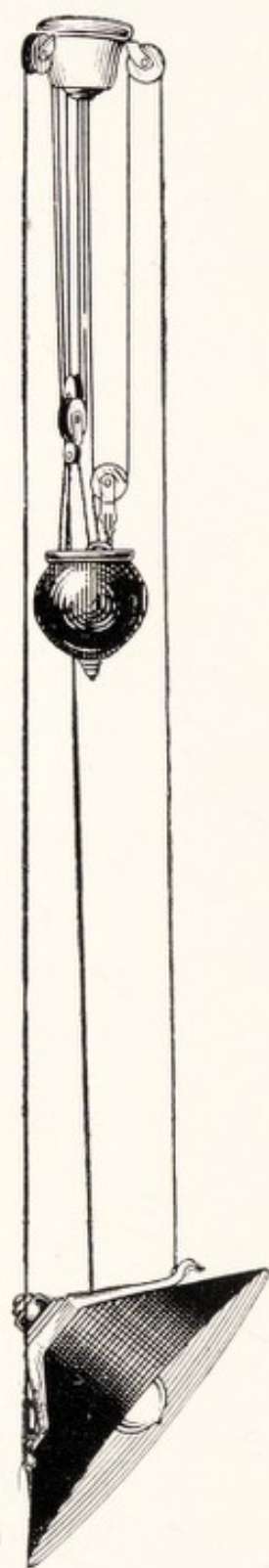


FIG. 6.



An electric engine of the Columbia type is a great luxury as well as a great convenience, and may be installed with advantage where the "equipment allowance" renders it possible.

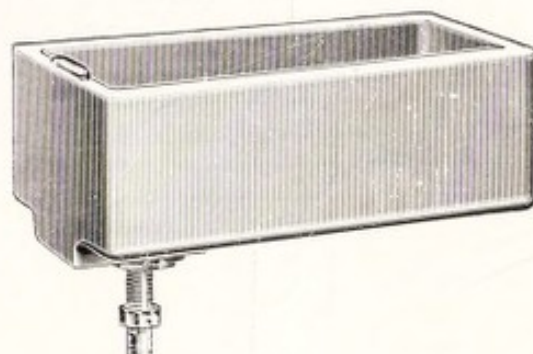
An electric light pendant of some kind is necessary where there is an electric supply, and the type illustrated in Fig. 6 has been found to answer its purpose very well; all bright parts should be blacked, to avoid waste of time over polishing.

With regard to "extraction forceps," the difficulty sometimes arises that where there are several dentists attached to

FIG. 7.



FIG. 8.



a clinic each one has a tendency to order the instruments to which he is specially accustomed; it follows, then, that whenever a fresh dentist is appointed to a clinic he may require additional pairs of forceps, with the result that after a few years one finds an accumulation of extracting forceps, many of which are seldom or never used.

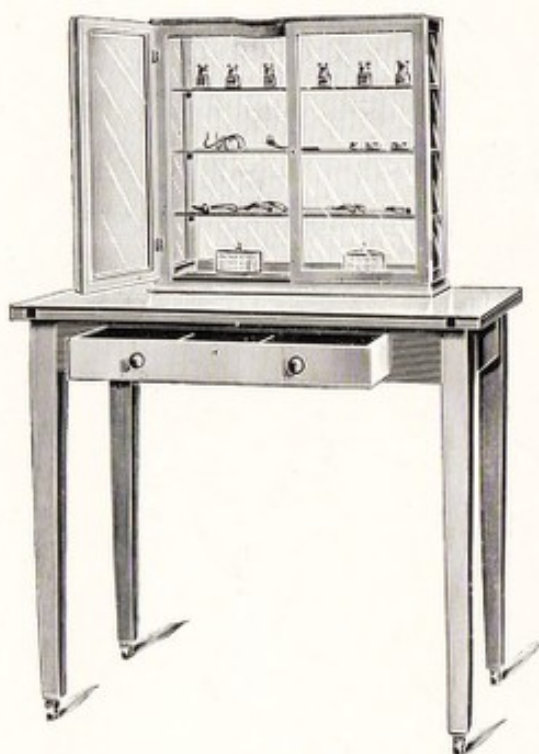
The remaining instruments and appliances, in the author's opinion, should be, as far as possible, of a labour-saving pattern; thus "double-ended" excavators and the four-ended pluggers,

such as those designed by Vajna, are a great convenience where work has to be done rapidly.

A satisfactory earthenware fountain spittoon (Fig. 7) can now be obtained suitable for school clinic use, and as the cost is but £6 it should certainly be installed wherever possible.

An inexpensive earthenware sink (Fig. 8) is also an essential feature of the surgery or its adjacent room, fitted with hot and cold water, supplied preferably through a spray nozzle: the latter can be used for hand washing

FIG. 9.



in running water, and the rest of the sink can be used as a mouth-rinsing trough or for washing instruments, spittoons, and so forth.

Much expense can be saved where desirable by having aseptic instrument cupboards, such as Fig. 9, made by a capable local shopfitter. At the clinic in Norwood, an aseptic mahogany cupboard, and an instrument table 3 ft. 6 in. high, with a top 4 ft. by 2 ft. covered with thick plate glass, and with an aseptic drawer with a glass bottom, were made at a cost of four guineas only.

The amount allowed by the London County Council for the

N.B.—Each page should
be numbered.

SPECIMEN PAGE OF DENTAL REGISTER.

DATE.	NAME OF CHILD.	AGE.	NAME OF SCHOOL.	Number of Tem- porary Teeth or Roots Ex- tracted.	Number of Per- manent Teeth or Roots Ex- tracted.	Number of Stop- pings.	Other Operations.	REMARKS.
Carried forward .								
TOTALS . . Children seen				Tempo- rary Teeth or Roots Ex- tracted.	Perma- nent Teeth or Roots Ex- tracted.	Number of Stop- pings.	Other Operations.	

equipment of a clinic is £50, and in every case this sum has been found to be sufficient for the purpose, though naturally one has to limit oneself to a treadle engine rather than incur the expense of an electric one.

Method of
recording
work done.

In the author's experience there is in many places, particularly in Germany, a tendency to overdo the clerical work of a clinic by charting and recording many points of insufficient importance at the expense of time that might be devoted to treatment or other work connected with the clinic.

A dental record book has, therefore, been devised which, besides recording all really necessary information, is readily intelligible to members of local bodies, who can thereby see at a glance the amount and nature of dental work carried out.

Each page of this book is headed as on the preceding page, and in addition there is a "cut through address book" index for recording the name and address of the children in alphabetical order.

Books of this type are in use at all the London clinics, and have been found to answer their purpose very satisfactorily.

CHAPTER V.

GENERAL MANAGEMENT OF A DENTAL CLINIC.

It is often thought that it is quite sufficient to open a dental clinic for the necessary attendance of school children to follow as a matter of course.

Preliminary working up.

It is, however, the writer's experience that to open a dental clinic and merely direct the parents to send or take their children there for treatment is simply to invite failure.

In order that a school clinic may be worked to the best advantage, it must form part of a general scheme of local dental hygiene which involves instruction of teachers as well as instruction to parents and children by means of lantern lectures given by dentists or medical men who have the gift of expressing themselves in *simple, untechnical* language.

It is only by this preliminary, persistent, and continuous working up that children in sufficient numbers will go to a dental clinic.

Another essential of the highest importance is to obtain the interest and co-operation of the school teachers; they are more in touch with the parents than anyone else, and a word in season from a head master or mistress will work wonders in removing parental misgivings, as well as in promoting the cause of dental hygiene and the success of a clinic.

How, then, are we to ensure the attendance of children at a clinic? Several experiments have been made in L.C.C. schools, and the results have proved to be extraordinarily contradictory.

Attendance of children.

The points that emerge, however, indicate the necessity for a preliminary and persistent working up of the district in which the clinic is placed on the lines above mentioned.

It is found at the present time that, speaking generally, a parent or some responsible person will accompany the child at its first visit, and that after that the child can come by himself.

At a school in Wandsworth one of the elder boys, known familiarly as "father," has become a sort of "local persuader"

of the hesitating boys of the neighbourhood, and his efforts are highly successful in bringing them to the clinic—an occupation in which he appears to take much legitimate pride, and which the school authorities are glad to utilise.

There is always, however, a residuum of recalcitrant parents who decline to allow their children's teeth to be treated; a plan has been devised by the author of inviting the parents of this kind to come to the school on a particular day in order that he and the secretary of the Care Committee may explain matters to them.

A batch of children who have already been to the clinic and thereby made models of dental cleanliness, having been previously collected, is shown one by one to the assembled parents, after which their own children's mouths are shown: the contrast between the healthy and the unhealthy mouths, together with a little diplomatic explanation, usually remove all difficulty, and the attendance of the children follows.

Payment
for
treatment.

In London, in accordance with statute,* a charge is made to all parents of children attending the dental clinic, irrespective of the nature or extent of the treatment carried out.

This sum in no case exceeds a shilling, and may be reduced to a penny in necessitous cases, if thought right by the School Care Committee; the money being collected by the school attendance officer.

Trouble-
some
children.

It is a useful principle for a dentist working at a clinic to see the well-behaved children first of all: he usually finds out almost immediately if a particular child is going to be troublesome, and can then put the child on one side to look on while another well-behaved "non-crying" one is being treated; usually after two or three "non-criers" have been attended to the troublesome one can be proceeded with without further difficulty. If still troublesome, it is wise to keep the troublesome one to the last, in order to avoid demoralising the others; and in extreme cases it is sometimes necessary, after interviewing the mother, to send the child straight away when finally found to be uncontrollable.

Presence
of parents.

It is not usually advisable for parents to be allowed in the operating room while treatment is going on, as it is the experience of most dental surgeons that children behave much better when their parents are not present.

* See foot-note on page 14.

It is, on the whole, a good principle to do as much as possible for each child at one sitting, as repeated visits are a great source of annoyance to parents and, above all, to head teachers, who object strongly to having the school attendances interfered with.

Amount
to be done
at each
sitting.

Again, one cannot always be certain that a child will make a second visit even when so directed; for that reason alone, then, it is often advisable to carry out as much treatment as possible on perhaps the one available opportunity.

No child should be allowed to leave a clinic so long as any tooth-sockets or gums are bleeding.

Bleeding.

It is highly important to obtain *full* consent from the parents for whatever treatment may be required, since otherwise much time may be wasted in arguing with them as to which is and what is not a temporary tooth, or as to whether a painless septic root should be extracted or not.

Consent of
parents.

Though some children can be trusted to come to a clinic unaccompanied, it is usually essential that a responsible person should be with them to ensure their attendance, as it is not unknown for visits to be paid to picture palaces instead.

When the dental clinic in Blackfriars was first opened, certain difficulties of this kind were experienced owing to the numerous counter-attractions that were encountered by the children *en route*.

CHAPTER VI.

THOUGH the London County Council has not up to now established any school dental clinics directly, it has nevertheless given official recognition to several that have been founded in various parts of London, either by individuals or by local associations of medical practitioners; these clinics are subsidised and worked in conjunction with the Public Health Department of the Council.

The following is a list of these institutions in the order of their foundation :—

ST. GEORGE'S DISPENSARY, SURREY ROW, BLACKFRIARS
ROAD, S.E.

This clinic, which owes its foundation to the beneficence of Dr. R. A. Kirby, is located in a disused public-house, three rooms of which have been appropriated for school dental work.

Staff.—Two dentists, working on five afternoons a week; an anæsthetist, who attends on one afternoon a fortnight; a nurse; a caretaker.

The appointments for treatment are made by a London County Council local organiser, whose office is near by.

Equipment.—One operating chair, etc.

DEPTFORD "HEALTH CENTRE," DEPTFORD GREEN, S.E.

This clinic owes its foundation to the efforts of Miss Margaret MacMillan; two rooms are used for dental treatment purposes, but part of the larger room is curtained off so as to provide something in the nature of a third room.

Staff.—One dentist, working on seven half-days a week; an anæsthetist, who attends on one morning a week; a nurse.

Equipment.—One operating chair, etc.

The appointments are made by a local organiser.

POPLAR HOSPITAL, EAST INDIA DOCK ROAD.

By arrangement with the London County Council certain rooms in this hospital have been set apart for the purposes of a school dental clinic.

Staff.—One dentist, working on five afternoons a week; an anæsthetist, who attends fortnightly; a hospital sister.

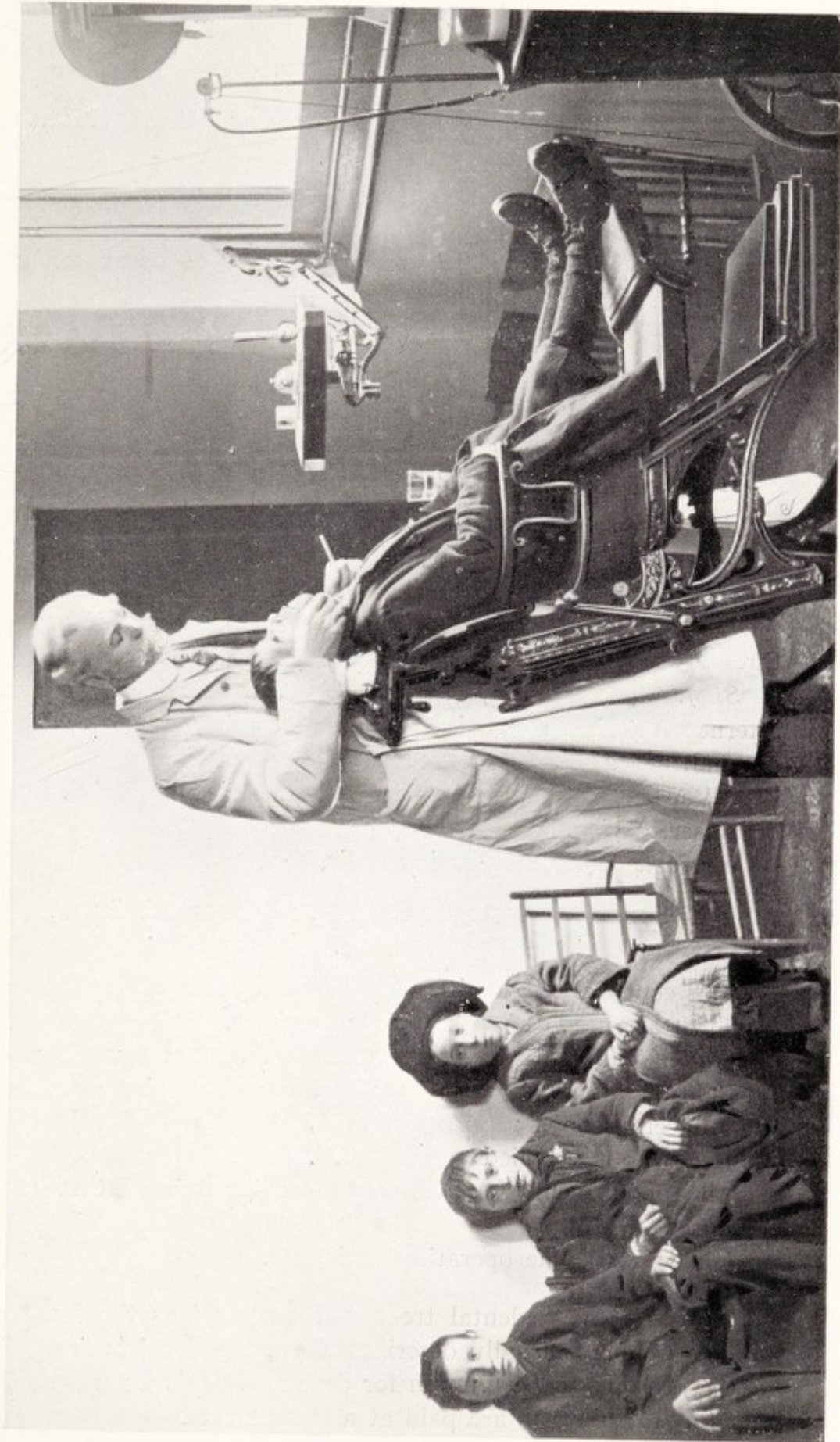


FIG. 10.—THE OPERATING ROOM AT THE DEPTFORD "HEALTH CENTRE."

All appointments for treatment are made by a London County Council local organiser.

Equipment.—One operating chair, etc.

WANDSWORTH "SCHOOL TREATMENT CENTRE," GARRETT LANE,
EARLSFIELD, S.W.

This centre is located in an ordinary suburban shop with its adjacent rooms; it was founded and is managed by an association of local medical men, and three of its rooms are used for dental clinic purposes.

Staff.—Three dentists, working on six mornings a week, each dentist attending for two mornings; an anæsthetist, who attends on one half-day a fortnight; a nurse.

All appointments for treatment are made by a London County Council local organiser.

Equipment.—One operating chair, etc.

NORWOOD "SCHOOL TREATMENT CENTRE," 3, CHESTNUT ROAD,
NORWOOD.

This centre is located in a double-fronted dwelling-house, three rooms of which are used for dental clinic purposes.

Staff.—Two dentists, attending on two mornings and two afternoons a week respectively; an anæsthetist, who attends on one half-day a fortnight; a nurse.

All appointments for treatment are made by an L.C.C. local organiser.

Equipment.—One operating chair, etc.

FULHAM SCHOOL TREATMENT CENTRE, 18, BAGLEY'S LANE,
FULHAM.

This centre is located in a small dwelling-house, three rooms of which are used for dental clinic purposes.

Staff.—One dentist, working on four mornings a week, who in addition makes a fortnightly half-day dental inspection of the adjacent schools; an anæsthetist, who attends fortnightly; a nurse, who is supplied by the L.C.C.

All appointments for treatment are made by an L.C.C. local organiser.

Equipment.—One operating chair, etc.

At the above "dental treatment centres," as the London County Council officially describes them, the dentists are paid at the rate of £50 per annum for each half-day's work a week, and the anæsthetists are paid at a similar rate.

These salaries are provided by the London County Council, besides which it pays a capitation fee of 2s. for each child attending for dental treatment.

Though not always the case, in several instances the nurse is supplied by the Council direct, and she is paid at the rate of £80 per annum, according to the number of half-days a week on which she works.

In order to provide a sufficiency of cases for treatment, weekly or fortnightly visits are paid to schools in the vicinity of each clinic by specially appointed inspecting dentists, who are appointed and paid directly by the London County Council at the rate of £50 per annum for one half-day's work a week.

£50 is provided for the equipment of each dental treatment centre during its first year.

Inquiries have been made by the writer with a view to finding out whether the sums allowed by the London County Council for the equipment and maintenance of these "dental treatment centres" are sufficient to cover the expenses involved; and though insufficient time has elapsed to make a dogmatic statement justifiable, it would appear that the sums provided are, on the whole, sufficient when due economy and proper management are carried out.



FIG. 11.—STRASBURG SCHOOL DENTAL CLINIC.



FIG. 12.—MOUTH-WASHING ROOM OF STRASBURG DENTAL CLINIC.

CHAPTER VII.

GERMAN SCHOOL DENTAL CLINICS.

THANKS to the energy and perseverance of Professor Ernest Jessen, there are at the present time in various parts of Germany no less than seventy-eight places in which special dental arrangements for elementary school children have been made, the provision in the large cities being usually in the form of municipal school dental clinics.

Many others are projected, and before long upwards of 119 towns and cities will have established similar institutions. In 1902 the first of these "Schul-zahn-Kliniks," as they are called, was opened in Strasburg, with Professor Jessen as its first honorary director.

The actual operative work was at that time carried out by a staff of two dentists, who were appointed and paid by the municipality as whole-time officers; their hours were from 8.30 a.m. to 12 noon, and from 2.30 to 6 p.m., making seven hours' work a day.

They were specially active during school holidays, as it was then that the children were able to attend without interference with their school work.

The process of inspection is carried on by one of the dentists attached to the clinic visiting the schools in turn.

A most important feature of the Strasburg school dental work is that every effort is made to instruct and interest the school teachers in the principles of dental hygiene, so that they in turn may impart it to the children.

If a child complains of toothache during school hours, the teacher at once sends a card to the parent requesting that the child may be allowed to attend the school dental clinic.

All children attending the "infant schools" are compelled to attend the "Schul-zahn-Kliniks," and to make matters clear

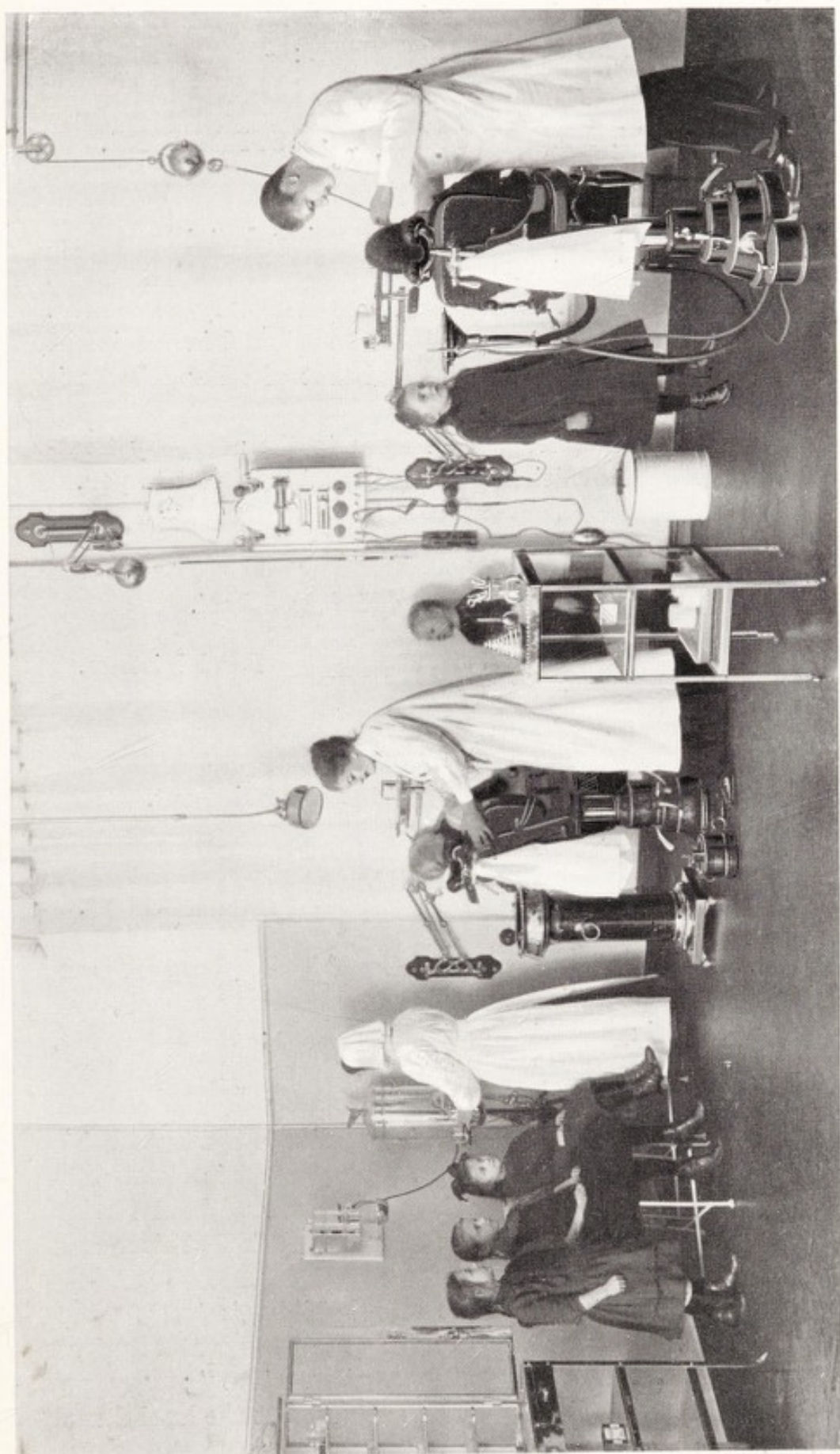


FIG. 13.—FIRST SCHOOL DENTAL CLINIC IN BERLIN.

a notice to the following effect is sent to the parents of each child whose teeth are in need of treatment:—

MUNICIPAL INFANT SCHOOL OF STRASBURG.

TO THE PARENTS OF THE CHILD.

Your child has diseased teeth, and requires dental treatment. This can be obtained in the Schul-zahn-Klinik _____, and there your child will obtain the necessary treatment. Children with diseased teeth will not be allowed in the infant schools, because their own health and that of other children is endangered thereby.

I, therefore, ask whether you agree to the necessary treatment, which will be efficiently carried out free of cost to you.

Strasburg.

Date _____

Infant School.

Head Mistress.

Reply of Parents.

I agree that the necessary treatment be carried out.

Signature:

Parent,

The ages selected for dental treatment in Strasburg are from six to fourteen years in the ordinary elementary schools, and from three to six years in the infant schools; these ages are, of course, ideal, as they cover the whole school lives of the children.

Beside the above certificate, which applies to those attending the infant schools, no child in the ordinary public elementary school is allowed to go to a holiday school without having obtained a certificate from the Schul-zahn-Klinik that his mouth is healthy.

Besides the treatment of the school children's teeth, every effort is made to instruct the parents by means of dental hygiene lectures on what are called "parents' evenings"; they are usually given voluntarily by dentists attached to the local dental society.

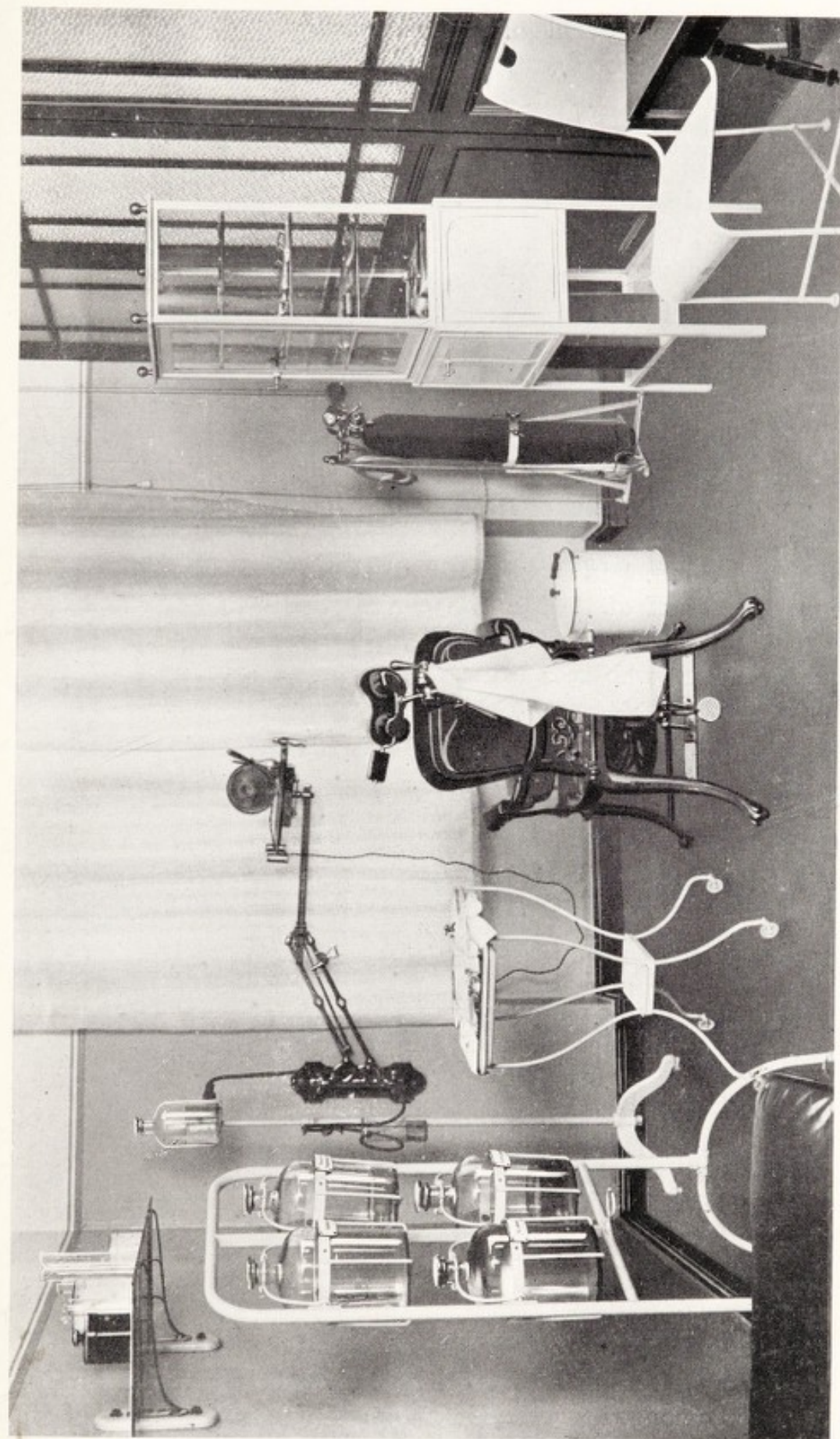


FIG. 14.—FIRST SCHOOL DENTAL CLINIC IN BERLIN.

The original Schul-zahn-Klinik was in a few years found insufficient to cope with the rapidly increasing demand for school dental treatment.

In 1908, therefore, a greatly enlarged and thoroughly up-to-date school dental clinic was opened in the building of the new municipal swimming baths.

No less than ten rooms have been set apart for the work of the clinic, and seven dental operating chairs have been provided, together with a working staff of four female dentists, whose hours of work are from 8.30 to 12 and from 2.30 to 5.

In the accompanying photograph of the chief stopping room will be seen the elaborate and expensive nature of the equipment provided.

Most of the German clinics make no charge for the treatment provided, but in a certain number a charge is made according to the treatment carried out, and in others an annual capitation charge of from $\frac{1}{2}$ to 2 marks (6*d.* to 2*s.*) is made instead.

About half of the German clinics appear to be staffed by whole-time dentists, while the remainder are worked by part-time officers, who devote the rest of the week to their private practices.

The actual cost of dental treatment in the German clinics naturally varies considerably, but in the most representative one, namely, Strasburg, the cost is said to work out at about 1*s.* 7*d.* a head.

It should, however, be clearly understood that salaries generally are on a much lower scale in Germany than in England, and consequently the cost per head in the German clinics is little or no guide to the cost of school dental treatment in England.

Though it is to Professor Ernest Jessen, of Strasburg, that we are indebted for the great advance school dental treatment has made, we must not forget that it was in the year 1885 that Mr. W. McPherson Fisher read a paper at the annual meeting of the British Dental Association on "Compulsory Attention to the Teeth of School Children."

At the last International Dental Congress in Berlin, Professor Jessen stated that up to the year 1885 the care of the teeth was completely neglected in Germany, so that we may in Great Britain feel some pardonable pride that we were not behindhand in calling attention to a matter which, thanks to the energy of Professor Jessen, has now become one of the greatest agencies for good among the public health movements of the day.

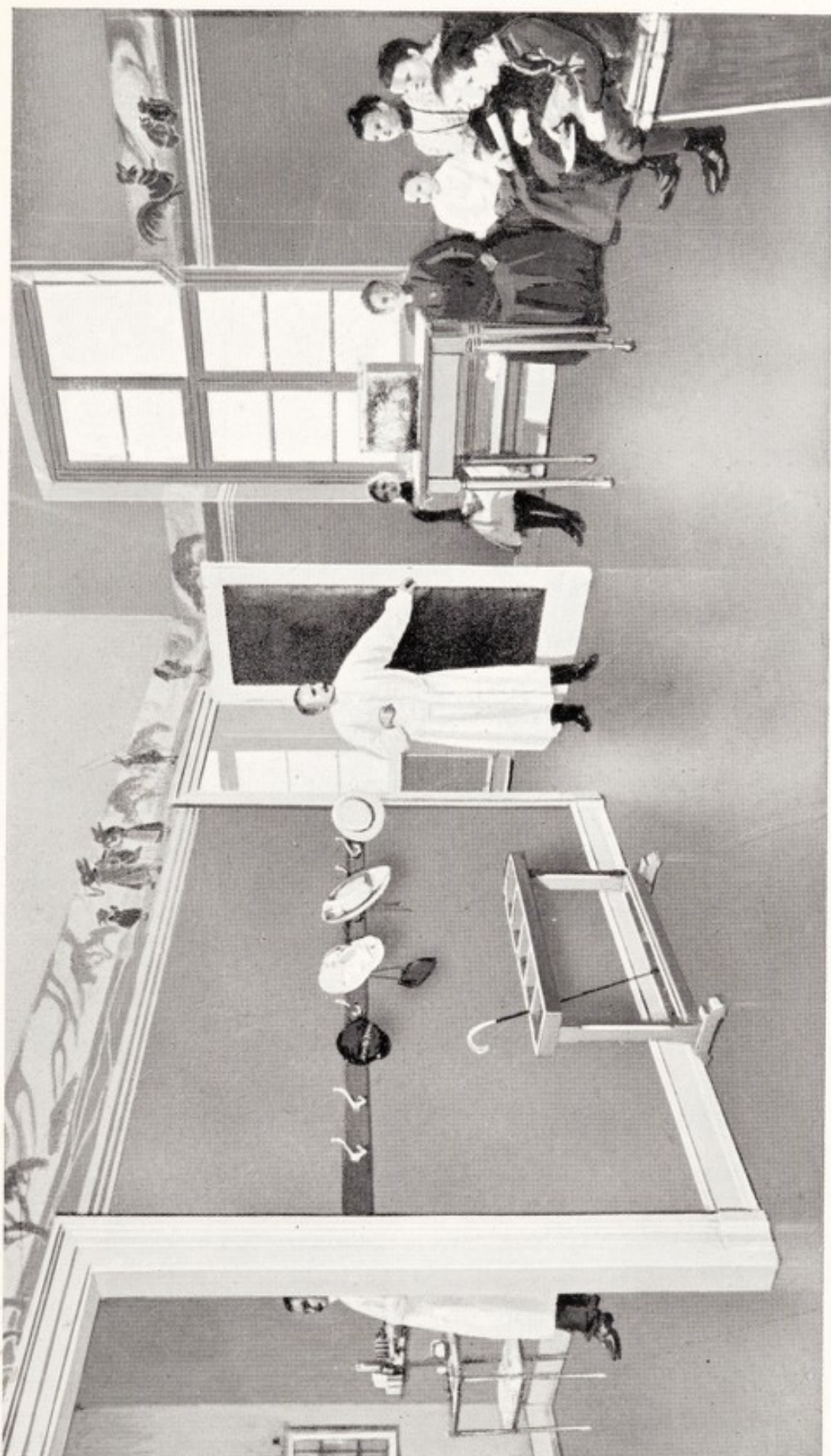


FIG. 15.—WAITING ROOM AT COLOGNE SCHOOL DENTAL CLINIC.

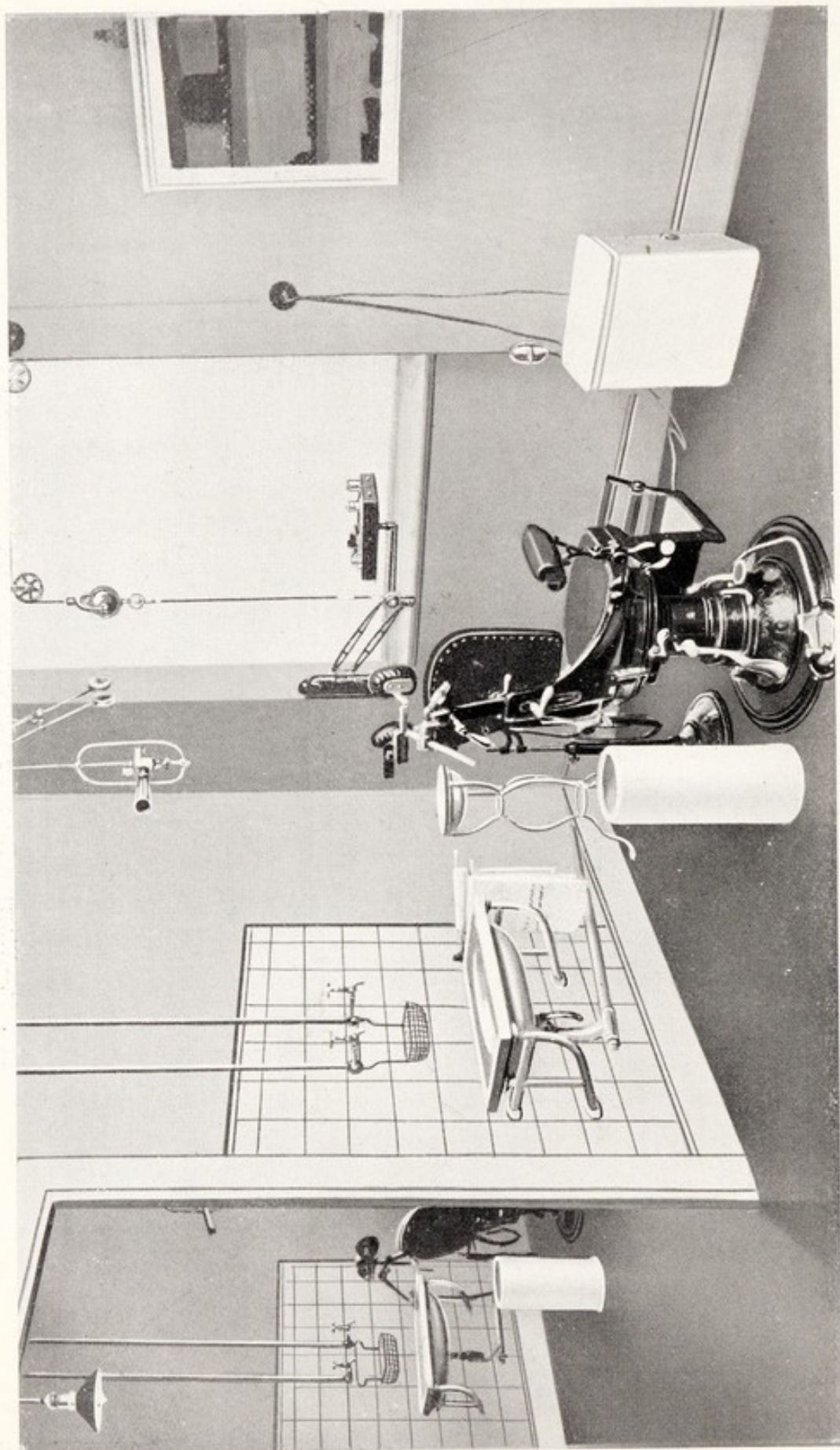


FIG. 16.—A SURGERY AT THE COLOGNE SCHOOL DENTAL CLINIC.

CHAPTER VIII.

PROVINCIAL SCHOOL DENTAL CLINICS.—TREATMENT IN RURAL DISTRICTS.

THERE are in England at the present time upwards of twelve school dental clinics, excluding those in London, and there is little doubt that this number will be greatly increased in the near future.

The pioneer establishment in England was that of Cambridge, which owes its foundation to the energy of Mr. George Cunningham, of that city, combined with the public-spiritedness of Mr. Sedley Taylor, who provided the necessary funds during the first years of its existence.

Since then the Cambridge Dental Institute, as it is called, has been taken over by the municipality.

The following is a list of the school dental clinics established at the time of Sir George Newman's report for 1910 :—

BRADFORD	..	..	Whole-time dentist.
CAMBRIDGE	..	..	" "
CHESTER	..	..	Two part-time dentists, each giving one half-day a week.
COVENTRY	..	..	Whole-time dentist.
HOVE	..	..	Two part-time dentists.
KETTERING	..	..	Part-time dentist on one half-day a week.
GT. CROSBY (LANCASHIRE)			—
NORWICH	..	..	Whole-time dentist.
READING	..	..	Part-time dentist, one half-day a week.
SHEFFIELD	..	..	Whole-time dentist.
TORQUAY	..	..	Two part-time dentists.
WORTHING	..	..	One part-time dentist.

In all these places arrangements have been made based upon local requirements; it is, therefore, unnecessary to enter into details concerning the management of each particular clinic.

SCHOOL DENTAL TREATMENT IN COUNTRY DISTRICTS.

It has been suggested that in some places the difficulty that arises in treating the teeth of school children who are scattered about in small country villages could be overcome by the use of a caravan in which a sort of travelling school dental clinic is located.

In the writer's opinion, however, the case would be met more satisfactorily if a portable dental equipment were arranged so that it could be carted from place to place in the same way that touring theatrical companies transport their scenery from town to town.

A register could easily be compiled of rooms suitable for dental clinic purposes in each village, and due notice sent by the visiting dentist of the dates on which a particular place would be visited.

With a little ingenuity no difficulty should be experienced in getting together an equipment which could at short notice be adapted to any ordinary suitable well-lighted room.

CHAPTER IX.

THE CARE OF THE TEETH.—POPULAR LECTURES.

IN order to excite the interest and co-operation of the parents in the care of their children's teeth, lantern lectures are of the greatest service.

At the same time it is essential that the lecturer who undertakes the work should have the subject at his fingers' ends and, if possible, be able to speak without the assistance of a manuscript.

Care should be taken to avoid the use of long or technical words, and homely expressions such as "a picture of a tooth *split open*" are often more easily understood than such expressions as "a *section* of a tooth," and so forth.

It is of paramount importance to insist on the serious results that follow oral sepsis; this is a matter which is frequently passed over as of little importance compared with the stopping of savable teeth.

It is now recognised by all capable medical observers that septic teeth are a potent cause of preventable disease, and it is, therefore, the obvious duty of dental lecturers to emphasise the fact in the strongest way possible.

The writer generally begins his lectures when children are present by showing slides of animals using their teeth for various purposes—for example, the elephant moving logs with his tusks, and the walrus climbing on the ice in the same way.

The following is the syllabus used by the author :—

LECTURE ON THE CARE OF THE TEETH.

SYLLABUS.

Specimen
syllabus.

STRUCTURE OF TEETH.

Two Sets of Teeth :—(1) *Temporary or Milk Teeth.*

(2) *Second or Permanent Teeth.*

What the teeth are for. How the upper and lower teeth ought to meet together. *If the teeth do not meet properly the food cannot be chewed and indigestion follows.*

Why the upper teeth sometimes project. The harm that is done by the "rubber comforter" and by allowing babies to suck their thumbs. Burn all comforters!

Why teeth decay. Importance of keeping the teeth clean, especially at night.

Why vinegar and pickles are bad for the teeth. Why some sweets make the teeth decay.

How to clean the teeth: common whitening and a piece of clean rag, or a tooth-brush and *precipitated chalk*; a separate brush for each person.

Results of bad teeth: the body becomes poisoned, *bad complexion and skin diseases*, bad breath, poorness of blood (anæmia), indigestion, rheumatic pains, and general bad health.

How to make the mouth healthy: teeth that *can be saved* ought to be *stopped*; teeth that *cannot be saved* ought to be *extracted*, as they *poison the body, especially when they don't ache*.

DENTAL MAXIMS.

Keep your teeth clean. Bad teeth poison the body. Go to bed with a clean mouth. Get your teeth seen to; don't wait till they ache!

The Women's Imperial Health Association, 7, Hanover Square, London, are doing, at the present time, an invaluable work in supplying lantern lectures to Girls' Clubs, Mothers' Meetings, "Adult Clubs," and so forth, and are glad of any opportunities of furthering the work of hygiene, whether dental or otherwise.

They have also "health caravans," which during the summer months visit rural districts and instruct by means of health talks, biograph displays, lantern lectures, and so forth.

Lantern
lectures.

It is now possible to obtain from C. Ash & Co., of Broad Street, Golden Square, a set of fourteen dental hygiene slides for use at popular lectures; these slides are characterised by simplicity and an avoidance of unnecessary technicalities, so that even the least intelligent parent or child should be able to understand what is required to keep the teeth in a condition of health.

School
Dentists'
Society
charts.

For lectures in which no lantern is available a set of three "dental hygiene charts" has been arranged by the School Dentists' Society of England; those numbered I. and III. are specially suitable for lecturing to a poorly educated audience.

They can be procured from Messrs. Ash, Broad Street,

Golden Square, or from the publishers, W. & A. K. Johnston, 7, Paternoster Square, London.

An important feature in connection with popular lectures of this kind is that the audience should always be invited to ask questions afterwards.

The dental hygiene lectures given in London have been of the greatest service in developing an interest in the care of the teeth, and it is to be hoped that similar efforts will be made in all parts of the country.

CHAPTER X.

DENTAL HYGIENE IN SCHOOLS.

IN order that teachers or others may receive information on the care of the teeth, the following "tract" has been compiled and distributed in certain London County Council schools :—

DENTAL HYGIENE.

SUGGESTIONS TO TEACHERS AND NURSES.

Teachers and school nurses are reminded that much good can be done by impressing upon children the importance of keeping their teeth clean, not only for the sake of appearance, but also for the sake of health. They should be instructed that the most important times for tooth cleaning are morning and bed-time ; it is of the utmost importance that one should go to bed with a clean mouth, that is to say, with the teeth free from the remains of past meals.

Acid substances, such as vinegar, pickles, "stewed" tea, etc., are bad for the teeth. Children should not be given bread, cake, biscuits, or sweets before going to sleep.

The interest of the children can be developed by special reference to the teeth in the course of lessons on hygiene in the schools. They should be made to feel that it is as much a reproach to have unclean teeth as a dirty face or hands.

Surprise inspections of the cleanliness of the teeth should be made from time to time ; if children standing in a row are made to show their teeth, little time need be spent in detecting those who are wanting in this respect.

In infant schools much good can be done by making the children, as a part of their daily drill, go through the process of tooth cleaning in dumb show, and, from time to time, telling them how to keep their teeth clean with a piece of clean rag and some whitening, followed by washing out the mouth.

The establishment of "Tooth-Brush Clubs" is of the greatest assistance in promoting dental cleanliness. A member of the School Care Committee is usually deputed to take charge of this work, and she retails the brushes to the children, who pay for them in weekly instalments of $\frac{1}{4}d.$ or $\frac{1}{2}d.$

Tooth-brushes, either of the "Columbus" or "School

Standard " pattern, can be obtained from the L.C.C. sales requisition list at a cost of 2s. a dozen, which allows of their sale at 2d. each. Precipitated chalk costs 3½d. a pound, and should be sold in ½d. packets; these packets could probably be obtained by arrangement with a local chemist.

Children should be encouraged to keep the tooth powder in common tin pepper pots, which cost about 1d. each. There is a risk of infection from one child to another when several dip their brushes into the same box or packet of powder, or where the same tooth-brush is used by more than one member of the family.

Every four weeks the children should be made to bring their tooth-brushes to the school for inspection. They should be instructed that after use the tooth-brushes should always be well rinsed, and then put outside the window to dry, otherwise they speedily become sodden and useless.

The co-operation of the head and assistant teachers in the formation and encouragement of these " Tooth-Brush Clubs " is essential to their success.

Lantern lectures on the care of the teeth, given during school hours or immediately after—that is to say, before the children have left the school premises—afford a valuable means of exciting a proper interest in dental matters.

When possible, lectures of the kind should be followed by compositions to be written by the children who were present on the subject of the lecture.

Lectures of the kind have, during the last two years, been given at St. Marylebone Schools, Southall, with excellent results.

A reference to the relation between a healthy condition of the teeth and the maintenance of a healthy skin has an excellent effect in lectures to Girls' Departments; it is always, however, more difficult to bring about the dental cleanliness of boys, but much can be done where the services of the head and assistant teachers co-operate, the open-air schools of the London County Council being usually shining examples of what can be done in this way.

In the future, it is to be hoped that no scholarships, prizes, or rewards of any kind will be given to children whose teeth are not clean, or whose parents have refused dental treatment, where such is obtainable.

" Tooth-Brush Clubs " afford an excellent means of improving



FIG. 17.—SHEPPERTON ROAD SCHOOL, ISLINGTON, N.

A "Tooth-Brush Club" was formed in this school, which is in a poor neighbourhood, about four years ago. The club is now in a flourishing condition.

Every morning the teacher asks who has cleaned her teeth. Lessons are frequently given on the value of good teeth. Nearly every child has a tooth-brush of her own, which she brings to school on the first Wednesday in each month, when an inspection of brushes is held.

(Miss Wright, who initiated the "Tooth-Brush Club," kindly supplied this photograph.)

the dental cleanliness of schools, and in several London County Council schools where they have been established notable improvement has followed.

An energetic member of a School Care Committee is usually deputed to take charge of the "Tooth-Brush Club," and she, having laid in a store of a gross or so of brushes, retails them at 2d. each to the children, who have previously been exhorted by their teachers to join, and who pay for their brushes in weekly instalments of $\frac{1}{4}$ d. or $\frac{1}{2}$ d.

It is by no means infrequent for the children to buy tooth-brushes for their parents as birthday presents, indicating thereby that even the parents may be influenced favourably in the matter of dental cleanliness.

In some schools dental texts are hung on the walls, in the style of Scriptural quotations ; for example :—

"Go to bed with a clean mouth,"

"Bad teeth poison the body,"

"A healthy mouth means a healthy body,"

and so forth.

A dental hygiene card such as the following is very useful for distribution to school children, or to parents when attending lectures on the care of the teeth :—

HOW TO SAVE YOUR TEETH.

1. Clean them thoroughly every night ; teeth decay because food is allowed to collect on them and go bad.
2. Go to bed with clean teeth ; teeth decay most when you are asleep.
3. Use a moderately hard tooth-brush sprinkled with camphorated or precipitated chalk, both of which are very cheap.
4. If you have no brush the teeth can be made quite clean with ordinary whitening applied with a piece of clean rag.

RESULTS OF BAD TEETH.

The body becomes poisoned, bad complexion and skin diseases, bad breath, poorness of blood (anæmia), indigestion, rheumatic pains, and general bad health.

Teeth that can be saved ought to be stopped ; teeth that cannot be saved ought to be extracted, as they poison the body, especially when they don't ache.

Get your teeth seen to early ; don't wait till they ache.

At certain of the London open-air schools, as well as those for the blind and deaf, where the number of children is limited, the tooth-brushes are kept in racks on the school premises; these racks are put in the open air in fine weather, and every effort is made to instruct the children in the proper method and times for cleaning the teeth.

By such means as these the condition of the teeth of school children can be greatly improved, and there are in London many schools known to the writer where the general cleanliness of the teeth is maintained at a very high standard.

APPENDIX.

*From the Annual Report (1909) of the Chief Medical Officer of
the Board of Education.*

SOME PRINCIPLES AND PRACTICE OF DENTAL TREATMENT.

It may be convenient briefly to set out some of the chief points to which a local education authority should give attention in considering the question of arranging for dental treatment of school children.

Burden of Work.—Two facts must be recognised at the outset, and their recognition will suffice to simplify, in some degree, the dental problem now facing many authorities. First, the vast majority (70, 80, or even 90 per cent.) of children of school age suffer from dental disease in some degree, and it is impossible to grapple at once with such a condition of things as a whole. Local education authorities now giving consideration to this question will do well, therefore, to put on one side any idea of undertaking to grapple with the entire problem of dental disease. The most, and indeed the best, that can be done by such authorities, is *to make a beginning*. The second fact is that the total mass of dental disease can be differentiated, so to speak, into its constituent parts. Evidence on this point has already been furnished, and any initiatory attempts at treatment should be focussed on what may be described as the critical point of attack.

What, then, is the critical point of attack? All statistics show that, in regard to the permanent teeth erupting about the sixth or seventh years, caries is progressive. "The number of decayed permanent teeth increases rapidly up to the age of eight, especially considering the few that are erupted at that age, and the number is nearly double at the age of eleven. About one-third of the decayed teeth were unsavable after the age of eight and nine." Later on Dr. Auden says: "At the age of six years 74 per cent. of children were found to have sound dentition, while 3 per cent. only had unsavable teeth. So rapidly does the proportion of unsavable teeth to sound teeth increase, that by the time the thirteenth year is reached less than 12 per cent. have sound teeth, while nearly 71 per cent.

have one tooth or more decayed beyond possible repair." These facts furnish "an eloquent testimony of the urgency of treatment, for whereas in the seventh year 33·6 per cent. had savable teeth, the number with savable teeth undergoes a progressive diminution with each successive age group until, by the time the children reach thirteen years of age, this percentage is reduced to 11·6."

Dr. Laird (School Medical Officer, Cambridge), speaking of the dental work at Cambridge, remarks: "Certain general conclusions may be drawn from the work which has been carried on in Cambridge since November, 1907, based upon an examination of the teeth of 6,219 children. They are: (1) The early age at which dental caries is found makes it absolutely essential that for school children inspection and treatment should begin *with the youngest*; and (2) To obtain the greatest possible benefit from the work and for the money expended, *attention should be concentrated upon the 'six-year' molar period.*"

Speaking generally, then, it may be said that conservative treatment must begin *early*, partly because that is obviously the time for conservation, partly because the burden of disease beyond the eleventh year is too great in bulk to be grappled with—at present, at all events. We are, therefore, limited to the first half of school life, say five years to eight years. On examination of this period we find that up to the seventh year the child's mouth contains mainly or wholly *temporary* teeth, which are carious in varying degree, whilst in the period of six-eight the permanent teeth are erupting, the six-year molars followed by the incisor teeth, and are liable to early caries.

Without for a moment minimising the importance of the temporary teeth or of their disease, it is clear that the permanent teeth are more important from every point of view, and that preventive and conservative treatment should be applied to the early disease. Granting, therefore, that for the reasons mentioned above some selection must be made, it is evident that the critical point of attack is the six-year molar period, from six to eight years of age. Inspection should begin at the earliest practicable date, but the burden of treatment will be found to fall at about the age of six to eight years. It should be so undertaken not only to strike the critical point, but to be capable of gradual and natural development on either side of that point, both before and after. Probably the most vulnerable period is the few months immediately following the eruption of the molar teeth. Treatment of the temporary teeth at about five

years of age would of course do much to prevent subsequent caries of the first permanent molars and remove sources of sepsis. Without periodical re-inspection much of the value of treatment during the critical "six-year" molar period will be lost. It is hardly necessary to add that in order to obtain effective results the work both of inspection and treatment should be placed in the hands of persons qualified in dentistry. It is incipient and often hidden caries of the permanent teeth which must be sought for (by mirror and probe), and arrested by the timely application of silver nitrate or by fillings.

Administration.—Having determined the burden of treatment work, if any, which they are prepared to undertake, the authority will next have to consider ways and means. There are four possible methods of administration:—

- (a) By private dental practitioners—working under contract, in associations or otherwise.
- (b) By dental hospitals.
- (c) By school dental clinics.
- (d) By itinerant dentists.

In the United Kingdom there are about 5,000 dentists, some of whom, though registered, do not hold a professional qualification (L.D.S.), having been in practice before the 1878 Dentists Act. For all practical purposes there are some 3,000 practising dentists in England and Wales, distributed unequally, and mainly concentrated in the towns. For this reason, if for no other, the provision of private dental treatment is not comparable with private medical treatment, and in many districts is not at present available. The ordinary fees are also, as a rule, prohibitive to the poor. Nor is there any considerable dental hospital provision, and the few hospitals which exist are greatly overtaxed. The scope of arrangements is thus somewhat severely restricted, and, indeed, is almost limited for the treatment of elementary school children to (a) dental clinics as at Cambridge, staffed by whole-time or part-time dentists, (b) contract dental practice in some form or other, or (c) itinerant dentists (as in Dorsetshire), working from centre to centre, equipped with a touring caravan or otherwise. Probably the methods (a) and (b) are the best for towns and urban districts, and (c) for rural areas. Various suitable modifications of these three general methods will suggest themselves, and in large

cities a beginning may appropriately be made in one or more districts. It is better to deal effectively with a few schools than to distribute treatment ineffectively over a wide area.

It may be added that to establish a dental clinic it is not necessary to construct a special building. It will be sufficient to adapt two rooms to the purpose. One room, for operating, should have a good natural light and appropriate artificial light, suitably arranged. The cost of equipment need not exceed about £30. The other room should be fitted as a play-room. A nurse or other person accustomed to the management of children should be in attendance. The expense of materials and upkeep is about £50 per annum for a single clinic in constant use. One dentist working five days a week, or several private part-time dentists who share the whole work of one clinic, may be expected to deal with a school population of 3,000 to 4,000. Mr. Gant (Cambridge) estimates that during the year a whole-time dentist can make 2,500 to 3,000 examinations, treat 750 to 1,000 children for fillings, and 500 for extractions. Provision should always be made for re-examinations, and extractions should not take place at the dental clinic if other arrangements can be made. As a result of his experience in school dental work, Mr. Gant prefers the idea of a whole-time dentist, whilst the British Dental Association is in favour of part-time school dentists as likely to be more experienced. The Association has no objection, however, to whole-time dentists, if circumstances do not permit of part-time officers. Hitherto the payment of a whole-time dentist has been about £300 per annum. Payment of private dentists should, in the opinion of the British Dental Association, be at the rate of not less than £1 per half-day of three hours, together with travelling expenses, or at a somewhat lower rate for quarter-time or half-time dentists.

Whatever method be adopted, the authority should endeavour to secure the support and co-operation of the parents, without whose assistance little or nothing can be done. Alongside any scheme of dental treatment there should also be a definite plan of educational work carried on among the parents and by the teachers in the schools. Part of this educational work should be concerned with oral cleanliness and the cleaning of the children's teeth, beginning with the infant schools, and part of it should deal with the causes of caries. Among the chief of these causes is unsuitable feeding of children from one to five years of age.

Finally, the dental work carried out under an authority

should be administered as a part of the school medical service, co-ordinated under the school medical officer, and available only for those children for whom adequate provision cannot otherwise be made.

From the Annual Report (1910) of the Chief Medical Officer of the Board of Education.

THE TREATMENT OF DENTAL DISEASE.

214. Probably in no form of disease is treatment in the earliest stages more necessary or attended with more satisfactory results. Indeed, it is hardly too much to say that given such treatment the arrest of the disease can be assured, and the many and far-reaching ill effects, in so far as they depend upon dental disease, and not also upon other adverse causes acting in conjunction, can be entirely prevented from development. In no disease, then, is it more imperative to view the actual treatment from the point of view of prevention. Treatment must begin from the first moment disease shows itself, and indeed before it shows itself. The recognition of this fact is of the utmost importance to local education authorities when they come to consider what practical measures of a direct kind they should adopt in order to remedy the serious state of affairs as revealed by medical inspection. It suggests at once certain practical lines of action which are of almost universal application, and which if followed will inevitably lead to the desired end.

First, in order to search out dental disease in its earlier beginnings the inspection of the teeth of the children should preferably be carried out by a dentist.

Secondly, the inspection should begin at latest from the earliest age at which the first of the permanent set of teeth begin to erupt. That is to say, the inspection of the children's mouths should begin not later than during the sixth year of age. Even at the age of five caries may be present. In practice probably the simplest and most satisfactory proceeding for the dentist is to inspect the mouths of all the children in the infants' school. Any attention urgently required in respect of the temporary teeth can then be given, and disease, in its earliest stages, of the newly developed permanent set can be treated by fillings.

Thirdly, the re-inspection of children once treated should

take place at intervals of not more than one year. It is of rare occurrence for a tooth passed as "sound" at one inspection to become decayed to such an extent as to be classed as "unsavable" at the end of a year.

The local education authority which contemplates providing dental treatment will have to consider various practical points. First, whilst inspection should begin at the earliest practicable date, the burden of treatment will be found at first to fall at about the age of six to eight years. Treatment of the temporary teeth at about four or five years of age would do much to prevent subsequent caries, but is not so convenient a period as that between six and eight years. Secondly, there is the question of the number of children who can be treated in return for a given expenditure of time on the part of the dentist. This will depend almost entirely upon the age of the children selected for treatment. In comparing the work of one school dentist with that of another it is important to compare, not the number of children treated, but the number of "fillings" done, which will take less time in the case of young children in whom disease has only just begun to show itself than in the case of children presenting more advanced caries. Generally speaking, however, it may be stated that from ten to twelve fillings can be effected during a morning's work of two and a half to three hours. If young children up to, say, the age of eight are being dealt with, this will represent some four or five children. The time occupied by extractions is not so long. Of the children who require treatment, whether by "fillings" or by extractions, or both, it has been found in practice at Cambridge that on the average one tooth requires extraction from each child treated. Some twenty-five to thirty children can be treated for extraction only in a morning and afternoon session. Where due allowance has been made for the necessary inspections in the schools in order to select the children for treatment it will be found that from 1,500 to 2,500 children per annum can have everything necessary done for them in the way of treatment, by one dentist working for whole time or by several part-time dentists giving an equivalent amount of time. The younger the children the larger will be the number treated in a given time. When children have once received complete treatment they will, whatever their age, be on approximately the same footing as children of, say, six or seven years of age so far as the time they will occupy for treatment on subsequent occasions is concerned. Thirdly, there will be the necessary administrative arrangements.

215. *Administration.*—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. The most appropriate place for them is at the inspection or treatment clinics. All arrangements for, and administration in connection with, dental inspection and treatment must be made under the general supervision of the school medical officer of the area.

SCHOOL DENTAL CLINIC: LIST OF FURNITURE, INSTRUMENTS, ETC.

Operating Pump Chair, specially designed for children, with Attachment and Tray.

Fountain Spittoon.

White Enamelled Wood Instrument Table on casters.	}	Or Aseptic Instrument Cabinet.
White Enamelled Wood and Glass Cabinet.		

Trichord Electric Tilting Ceiling Pendant, with Lamp.

Foot Engine, with Handpiece and Right-Angle Attachment.

6 Enamelled Mugs.

Enamelled Steriliser for either gas or electricity.

Deep Oblong Sink, to be used for hand-washing and mouth-rinsing,
with spray tap.

Enamelled Pail with Lid, for soiled napkins, etc.

Extracting Forceps (five or more pairs).

Fishtail Elevator.

Grevers' "Immediate Regulation" Forceps.

Porcelain Dish for Lysol solution, 18 in. by 10 in.

3 Enamelled Steel Spittoons.

1 gross Assorted Engine Burs.

6 Nerve-Canal Engine Drills.

3 mounted Carborundum Points.

12 Double-ended Excavators.

2 ,, Probes.

Moon's Blunt Probe.

Plastic Filling Instruments.

Double-ended Steel Spatula.

1 ,, Bone Spatula.

1 ,, Trimmer and Scaler.

2 Enamel Chisels.

1 Double-ended Chisel.

3 How's Scalers.

Tweezers.

Amalgam Carrier.

 ,, Spoon.

6 Smooth Metal Handled Mouth Mirrors.

Clamp Forceps.

2 Rubber-dam Clamps, Molar and Bicuspid.

2 Wool Roll Clamps, Molar and Bicuspid.

3-oz. Black Rubber Water Syringe.

Chip Syringe with Red Rubber Bulb.

Pair Pointed Pliers.

Wool Holder.

4 ozs. Absorbent Cotton Wool.

Glass Mixing Block.

„ Pestle and Mortar.

„ Spirit Lamp, large.

„ Waste Wool Holder with card cartons.

Small Porcelain or Glass Dishes for Burs.

Copper or other Amalgam, if required.

6 1-oz. Boxwood Bottles of Mercury.

1 pkt. Copper Cement.

1 „ Oxyphosphate of Zinc.

1 „ Temporary Gutta-Percha.

1-oz. Bottle Creosote.

1-oz. „ Oil of Cloves.

1-oz. „ Carbolic Acid.

1-oz. „ Eucalyptus Oil.

1 2-oz. „ Engine Oil.

1 Bottle Lysol.

1 Box of 500 Assorted Wool Rolls.

1 „ 500 Absorbent Napkins, 6 x 6.

3 dozen small cheap Towels, about 12 x 12 ins.

1 oz. Nitrate of Silver, powdered, in brown glass stoppered bottle.

ANÆSTHETIC OUTFIT.

If Required.

1 Nitrous Oxide Gas Stand, with 2 100-gallon Bottles of Gas, Bag, Tubing, Facepiece, etc.

Gas Apron.

Fergusson's Gag, All-Metal, with spring.

6 German Silver Hewitt's Gags, with lead pads.

3 All-Metal Sponge Holders.

1 Box Cotton Swabs.

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