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Medical Officers of Schools Association.

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The Use of Shower Baths in Schools in England and on the Continent

BY

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of the London County Council

A Paper read before
THE MEDICAL OFFICERS OF SCHOOLS ASSOCIATION
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A Paper read before
THE MEDICAL OFFICERS OF SCHOOLS ASSOCIATION
at their meeting on 10th May 1906

THE MEDICAL OFFICERS OF SCHOOLS ASSOCIATION

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THE USE OF SHOWER BATHS IN SCHOOLS IN ENGLAND AND ON THE CONTINENT.

MR. CHAIRMAN AND GENTLEMEN,

I must thank the members of the Medical Officers of Schools Association for the honour they have done me in asking me to read this paper before them to-day. The valuable work carried on by the agency of the Association in the interests of school hygiene is a matter of common knowledge, and I trust that the facts which I intend to lay before them to-day will induce them to accord their support to the movement for the provision of a system of shower baths in all the elementary schools of the United Kingdom.

I must also crave your indulgence, gentlemen, in dealing with the purely medical points in my paper, as I labour under the disadvantage of not being a member of your honourable profession, and am dealing with the question more from an educational than from a purely medical point of view.

It is only during the last twenty-five to thirty years that the movement for the provision of shower baths for elementary school children has been in existence, principally in Germany. Attention was previously directed to abundance of light and fresh air. As soon as the just demands of the eye and lungs had been satisfied, the claims of the skin to consideration began to be urged. It may be safely asserted that the benefits of good light and pure air in schools will not be fully utilised until they are supplemented by a systematic treatment of the skin. The same might be said of the feeding of poor school children, but this is already under serious and practical consideration at the present time.

Shower baths will, without doubt, contribute in some degree to the decrease of infectious diseases propagated at schools by raising the general standard of cleanliness and health, thus rendering the children less liable to contract infection. They will be effective in the struggle against verminous conditions in schools. Increased care and cleanliness of clothes and underclothing must inevitably result in a consequent further improvement of the air in schools.

Of further importance is the invigorating influence of shower baths, suitably applied, and the consequent increased power of sustained mental effort. These are the benefits which will accrue to our school children during their school life. But the educative effect of shower baths will accompany the great majority throughout their lives. Cleanliness in body brings in its train cleanliness in surroundings, cleanliness in eating and drinking, and purity in all the functions of the body. Viewed in its ultimate aspects the introduction of shower baths will, therefore, in course of time, prove of great value to the individual, to the community in general, and to the future race.

It was with deep significance that the founders of the religions of the Indians, Assyrians, Egyptians, Jews, and others enjoined upon their followers the necessity of daily ablutions and frequent baths, and raised these duties to the level of religious observances.

I intend in my remarks to confine myself to the question of shower baths in schools. I maintain that they are the most suitable kind of bath for the purpose in view—the provision of at least one bath per week for all children in elementary schools. Shower bath installations or centres are comparatively cheap to equip or build, require no great space and little water, and permit of the greatest number of baths being given per hour. The cost of swimming baths is much greater; they require more space and water, and it is a popular error to regard them as a means of washing instead of confining them to their true sphere, that of a physical exercise of a complete description, combined with a gentle invigoration of the skin. The warm shower baths with soap, followed by a moderately cold douche, is the ideal system for cleansing and stimulating the bodies of school children. The cleansing process is more thorough than in any other practical system, the dirty water is instantly carried off, fresh water constantly supplied, danger of infection obviated, and the physiological action of the water rendered most effective. Slipper baths are out of the ques-

tion for large numbers of children, being too slow, costly, ineffective, and capable of conveying infection; the invigorating effect is entirely wanting, as the bathing takes place in practically stagnant water of a constant temperature. In Scandinavian countries hot vapour baths followed by cold douches are often used, but these are impracticable for large numbers of children.

Shower baths have been adopted for schools in Germany, Austria, France, Switzerland, Belgium, Holland, Norway, and Sweden. Many of these countries have also introduced them into their armies, factories, and public baths.

Perfection in school bathing will be attained when every shower bath per week is supplemented by a swimming bath per week, but this is a question for the future; the vital question for the moment is the provision of shower baths.

It may be urged that the provision for shower baths in school lies outside the province of education, and that, if introduced, it would be difficult to find time for it in a curriculum perhaps already overburdened with various subjects.

The first objection can scarcely be upheld at the present day, when the educative influence of personal cleanliness can no longer be disputed and the scope of education has been greatly extended. The only place for the systematic inculcation of this principle is at school, the only suitable age that of school children. I must repeat this, gentlemen, as it forms a cardinal principle of the scheme for the provision of shower baths. *The only place for the systematic inculcation of this principle is at school, and the only suitable age that of school children.* Like other subjects whose inclusion was not contemplated in the code of 1870, but which have since been unanimously adopted, school shower baths should be included, either openly as such, or under the ægis of some other subject.

The regular practice of bodily cleanliness is the result of custom or instruction, or both combined. No child is born with a sense of the necessity of the care of the skin, nor does it, later, develop this sense spontaneously. The minority who have been accustomed or trained in their youth to the habits of bodily cleanliness, adhere to them throughout life. This power of adherence to a cleanly habit also applies to the unfortunate majority who have not been so accustomed or trained, and who cling tenaciously throughout their life to their uncleanly habits.

The State made elementary education compulsory, and undertook its direction, because the majority of parents were unable to provide the elements of instruction which every member of a civilised community ought to possess. For similar reasons physical exercises, manual training, and domestic economy were included. One of the things still wanting is systematic and practical instruction in the care of the skin, the great regulator of the body.

It is not generally recognised that the skin not only serves as a protective cover to the body, but is, in its functions, just as important as heart, lungs, and kidneys; further, that the care of the skin is most important during the years of growth.

The second objection, that of want of time, can be easily met. One of the striking advantages of shower baths is the comparative rapidity of the washing operation. Where a school is provided with a shower bath installation of about 40 to 50 douches, no more than 25 to 30 minutes per week are necessary for the bathing of a whole class. Where the children attend a shower bath centre, more time will be required according to the distance. An installation of about 40 to 50 douches is imperative for a centre, in order to enable a whole class to bathe at once, and thus save time and any dislocation of school work. In the case of schools with a smaller installation of from 10 to 20 douches any dislocation of the instruction can be avoided by carrying out the bathing during the hours devoted to writing, drawing, or drill, or similar work where the thread of the instruction is not affected by the temporary absence of part of the class.

A great obstacle which stands in the way of the introduction of shower baths must also be mentioned. It is the present legal interpretation of "education" with regard to the lawful expenditure of public money on its behalf. This obstacle must be surmounted or modified in some manner, and that without much further delay. In connection with this, Part III., Clause 35 (b) of the new Education Bill is of importance.

"The powers of a local education authority under Part III. of the Education Act of 1902 shall include :—(b) Power to make such arrangement as shall be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools."

I trust that this clause of the Bill will become law, and that this great obstacle to the introduction of pressing

reforms in school hygiene will be soon removed, being, as it is, of a less contentious nature than certain other clauses.

It is not perhaps generally known to what an extent England, once regarded as the foremost exponent in matters of personal cleanliness, is being gradually displaced in this respect by Continental nations, more particularly Germany. I refer more especially to broad organised efforts to inculcate the virtue of cleanliness amongst the great masses of the labouring population, who lack time and opportunity for its practice, than to the habits of personal cleanliness of the more favoured minority.

In support of this assertion, I append results of inquiries addressed to various educational authorities in the United Kingdom and on the Continent, showing the extent to which shower baths have been introduced into the schools under their administration :—

London.—The sole provision of school shower baths in the London schools is an installation of four douches at the “Pulteney” School, Shaftesbury Avenue, presented to the school some years ago by the Hon. Dudley Campbell. In spite of its insignificance, it provides some 6,000 to 7,000 shower baths per annum. The headmaster of the school bears eloquent testimony to the benefits it has conferred upon the poorer class of children who attend the school. The London school baths at Lyham Road, Marlborough Street and Albion Square are used solely for swimming purposes, and not for the special purpose aimed at by shower baths.

Edinburgh.—Four elementary schools are provided with baths, in which a large number of children receive swimming instruction. There are no shower baths.

Glasgow.—Classes VI. and VII. of the Glasgow elementary schools receive, if regular in attendance, a free course of swimming instruction in the Corporation baths.

Govan.—Six schools have been provided with swimming baths, and two others are in course of construction. No shower baths have been provided.

Bristol.—Some swimming arrangements have been made, but no shower baths have been provided.

Liverpool.—A number of elementary schools have been provided with baths of various dimensions. Two of the larger ones have been provided with douches which are used before and after swimming. No attempt has been made to introduce shower baths.

Birmingham.—The Municipal baths are reserved on certain days for the elementary school children. Two baths in very poor districts are provided with two small washing baths. No shower baths exist.

Newcastle-on-Tyne.—Very little provision for swimming instruction, and no shower baths. As a Tynesider I much deplore this condition of affairs.

Manchester.—Systematic instruction is given in swimming, but no shower baths exist.

Bradford.—Is well provided with swimming baths, and instruction in swimming is given to a very large number of school children. The swimming baths are provided with a small number of douches, and all persons are required to use them before entering the pool. But no system of shower baths has been introduced.

Nottingham.—Four elementary schools have been provided with swimming baths. The children also use the Corporation baths. No shower baths are provided, but in two establishments there are slipper baths for the use of children who require them before swimming.

Halifax.—The same conditions prevail at Halifax as at Nottingham.

Leeds.—Some instruction in swimming is given, and a slipper bath is provided for those children who require it before swimming. There are no shower baths.

Ireland.—No steps for the provision of shower baths have been undertaken by the Commissioners for National Education for Ireland.

The result of my inquiries in the United Kingdom shows, therefore, a decidedly negative result. I now turn to the Continent, and commence with Germany, which has been the pioneer in the movement of this important branch of school hygiene.

Berlin.—Out of 283 elementary schools, 62 are provided with shower-bath installations. In the year 1902, 400,000 shower baths were given; in 1903, 480,000 shower baths; and the present year the number reached some 600,000. The cost of the baths is about 1d. per bath.

Stuttgart.—All Stuttgart elementary schools have been equipped with douches, and the children receive one bath each per week.

Frankfort-on-the-Main.—Of the 30 elementary schools at Frankfort-on-the-Main, 26 are provided with shower

baths. All classes bathe except the lowest. This rule is fairly general in Germany. The douching takes place in school hours, during the time devoted to gymnastics. The schoolkeeper attends to the boys, his wife to the girls, and the general supervision is exercised by the men and women teachers. Baths and soap are free. A register of attendance is regularly kept. This gives details concerning the total number of children in the class, those who are dispensed from bathing because of illness or home objections, or other obstacles, and finally, the total number of douches given. The shower baths are either situated in the basements, or only a few feet below the level of the ground.

Nuremberg.—Shower baths were introduced into Nuremberg schools about twelve years ago, and every new school is now provided with them. At the present moment, 19 out of 68 elementary schools are equipped with shower baths. The pupils bathe by classes, the boys over ten under the charge of the schoolkeeper, and the girls and little boys under the charge of his wife. Each class bathes once a week, half an hour being allowed for the total operation. In one bath, dressing and bath rooms are heated. The showers are started at 95° F., and the temperature of the water is gradually reduced to about 55° F., so as to avoid any violent shock to the system by too abrupt a change in temperature. 400,000 baths were given in 1905, being an increase of about 55,000 upon the previous year; 50 to 80 per cent. of the total number of children bathe, the number varying according to the age of the pupils, and to the locality in which the school is situated. I was informed that the appearance of the children was much fresher, and their health better, since the introduction of shower baths; further, that their condition of their underlinen had improved. The authorities were also of opinion that the children's capacity for work had increased, although it was difficult to adduce proofs for this. At the present time, systematic observations are being made for the purpose of investigating whether verminous conditions have decreased in consequence of the introduction of shower baths.

Munich.—At Munich 35 out of 53 elementary schools have been provided with shower baths.: 840 000 baths were given in 1903, 940,000 in 1904, and about 1,000,000 in 1905. The percentage of children availing themselves of the baths in 1905 ranged from 90 per cent. in the poorer districts, to 45 per cent. in the better districts. In 1901 the attendance

was only 60 per cent. in the poorer districts, so that in the following four years it has risen by 30 per cent.

Mannheim.—All elementary schools, with the exception of four older ones, have been provided with shower baths, and the authorities show the greatest zeal in promoting the use of shower baths amongst school children. At the beginning of every school term a long notice is inserted in the principal papers on several successive days calling the attention of the parents to the advantages of shower baths. Not content with this, the authorities despatch some 30,000 circulars, with the same notice, to the parents and guardians of children. This action has raised the number of baths given from 242,000 in 1904 to 431,000 in 1905. The system of shower baths in Germany seems to have originated in Mannheim, some eight years before Göttingen, which is popularly supposed to have been the pioneer of the movement in Germany.

Cologne.—At Cologne a large number of elementary schools are fitted with shower baths, and during the last three years an average of over 200,000 shower baths per year has been given. The shower baths in the new schools have been installed regardless of expense.

Bremen.—All the newer elementary schools of Bremen (11 in number) are provided with shower baths. The last school built has been provided with installation capable of washing 70 children at a time. From four to five hundred baths are given in every school per week, amounting to a total of about 40,000 baths per annum for each school.

At Wiesbaden all the schools are provided with shower baths; at Hanover, nearly all schools; at Carlsruhe, nearly all schools; at Halle, all except four old ones, and so forth.

I forbear, Gentlemen, to trouble you with any further details concerning individual German towns, as the shower bath system has been practically established all over the Empire.

The shower baths are completely free, and no compulsion is used. Children of tender years are excluded, and no charge whatever is made for the baths. In a great many cases soap, towels, bathing garments, and brushes are provided free. The bathing takes place during school hours, the principal work being performed by the school attendants, the duty of the teachers being merely that of maintaining discipline. The installations generally consist of a dressing-

room, a douching-room, a washing-room for bathing garments, and a combined drying and boiler-room.

In some cases, difficulties on the part of the parents have been experienced, but these are being gradually overcome. In some towns the children bathe with bathing garments, in other towns without. In some towns they bathe entirely in common, in other towns a certain number of undressing and douching cells are provided for the older children, and in a few towns, notably Cologne, separate undressing and douching boxes are provided for all children, without exception. To prevent any possibility of contracting chills, the bathing is seldom carried out during the last school hour of the day. The teachers are greatly in favour of school bathing, as it materially better the conditions under which they work. The average duration of a bath seems to be from 20 to 30 minutes, and the showers are generally started at about blood-heat, and gradually reduced to about 70 to 60 degrees. As a rule, the children stand in a large shallow trough during the douching operation, and the douching itself is carried on either by means of single sprays to each child, or by sprays which cast the water further apart, and thus form a kind of rain under which the children stand. In many cases long tube douches are employed; these are long pipes perforated with a threefold row of holes along their entire length.

Amsterdam.—In Amsterdam a good number of schools have been supplied with shower baths. At one school, 7,000 baths per annum are used; at another school, 9,000 baths; and at a further school 25,000 baths per annum. The Amsterdam installations are inferior in quality to the German installations, but they are worked in an extremely efficient and sensible manner. One teacher, for example, whenever he hears of objections on the part of parents, asks the parents to the school, explains the advantages of shower baths to them, and invites them to try a shower bath themselves. The special feature of school bathing at Amsterdam is the shower bath centre opened in 1903. This shower bath centre provides about 90,000 baths per year to the children of 20 surrounding schools. It cost £1,500 to build and equip, and the annual maintenance expenses run to about £300. It has been so successful that the erection of a second centre has been decided.

Paris.—The movement for the provision of shower baths for schools in Paris is already twelve years old. A resolution

was passed, 27th December, 1894, requiring that, in order to combat the prevalence of epidemics in Paris elementary schools, each child should receive at least one shower bath a week. Since then, it has been decided to build all new schools with a complete installation of shower baths, and to instal shower baths in all the already existing schools, where this is feasible. In the meanwhile, many already existing swimming baths have been fitted with a large number of shower baths for the double purpose of providing shower baths *per se*, and for washing purposes before entering the swimming baths. It does not appear however, that much progress has been made in already existing schools, but in the plans of all new schools provision has been made for shower baths.

Belgium.—The introduction of school shower baths in Belgium was warmly recommended in a circular issued in 1892 by the Government, which promised to contribute to the expenditure incurred for this purpose.

Christiania.—The introduction of school shower baths in Christiania seems to date from the year 1886, and resulted from a discussion which took place at the Norwegian Health Society, whose attention had been drawn to the experiment made in Germany in one of the public elementary schools in Göttingen in 1885. It was immediately decided to make a similar experiment at Christiania. In advocating the introduction of these baths, great stress was laid upon the educative power of cleanliness in children, and the possibility of combating vermin and skin diseases, and the spread of infectious maladies. Shortly afterwards a similar experiment was inaugurated at Bergen.

Since then the movement has made rapid progress, so that in 1905, out of 23,000 elementary school children in the various schools at Christiania, about 16,000 were taking school shower baths. The number of children not taking school baths is a somewhat high one, but it is explained by the ascertained fact that they bathe at home instead of at school.

Sweden.—Baths are now installed in nearly all the schools in the larger Swedish towns. In Stockholm there are very good baths in all the elementary schools, and every pupil receives a regular bath (steam bath, shower bath, or swimming bath) every other week, or at the very least every third week. Bathing is obligatory, and each

class, about 30 to 40 pupils, bathes at the same time under the supervision of a trained bath woman.

Basle.—The movement for the provision of school shower baths in Basle dates from the year 1886. The first school bath was not installed until 1890. It proved itself a success at once, being attended by about 73 per cent. of all the children. Three further baths were installed in 1893, and between 1893 and the present day ten further in elementary and secondary schools. At the present time, there are only two schools in Basle unprovided with shower baths.

Bathing regulations were issued in December, 1895. Bathing takes place during the whole year, every child receiving a bath at least every two weeks, between 9 and 11 a.m. The bathing of the children in the lower classes is supervised by the teachers; the older children are not always under supervision, as this has been found unnecessary. No charge is made for the baths, and every healthy child is eligible for the same. The bathing is not obligatory, and the attention of parents is called to the advantages of bathing. At the present time the percentage of children who are bathing is a very high one. In 1902, for example, ten classes of children showed an average of 100 per. cent. The expenditure per 100,000 baths is about £500.

Geneva.—The movement for the provision of school baths in Geneva followed the experience gained in Basle and Zürich. The first experiment was made in the Necker School, and was a great success. The douches, 12 in number, were installed in the basement. The pupils were given at least two baths per month. The total expenditure amounted to £150.

In the absence of any such system or progress at home, the result of these inquiries is most disquieting for the United Kingdom. It amounts to this: that the movement for the provision of shower baths has become practically universal within the German Empire; that all new elementary schools, and a very large number of the older elementary schools, are provided with shower baths, and that they are being installed wherever feasible in all schools not yet provided with them.

In Austria, Switzerland, Belgium, Norway, and Sweden, good progress has been made, though not to such an extent as in Germany; in France the progress has been less marked; Holland, Italy, and Denmark have begun well.

Germany is the country which has initiated this great movement in school hygiene. During the past thirty years,

altogether unnoticed in England, shower baths in German schools have undergone a gradual period of development, and have now reached their final stage.

The first stage was represented by installations in dark basements, about 10 feet below the level of the ground, provided with large zinc tubs, and generally insufficient equipment. They were badly lighted and ventilated, and not very accessible.

In the second stage, troughs let in the floor were substituted for the zinc tubs. Ventilation, light, and general equipment were improved.

In the third and final stage the installations are either on the ground floor, or only a few feet below. They are splendidly lighted, efficiently ventilated, easily accessible, provided with tiled troughs, marble or tiled walls and cells, and fitted out with the most modern douching arrangements.

From 60 to 90 per cent. of the total number of children above seven bathe, and shower baths may now be considered as an integral part of physical education in German schools.

For the convenience of those members of the Association who may be travelling in Germany, and may wish to personally inspect some shower baths, I recommend the following elementary schools in the following towns :—

WIESBADEN		Blücher School.
FRANKFORT-ON-MAIN	..	Comenius School.
MANNHEIM		Wohlgelegen School.
KARLSRUHE		Schiller School.
MUNICH		Fluhr School.
MUNICH		Elisabeth School.
NUREMBERG		Bismarck School.
HALLE		Thor Strasse School.
COLOGNE		Frank Strasse School.
COLOGNE		Lindenburger Allee School.
DÜSSELDORF		Stoffler Strasse School.

After viewing the shower baths, visitors would do well to inspect the school buildings and equipment. They may probably find that London cannot compete with the type of elementary schools which has been erected since 1900 in German towns, even in those with populations of 150,000. This is no careless assertion, but the result of a careful and thorough comparison.

London is reducing her expenditure on elementary schools, Germany is adding to hers. The Germans, with that breadth and depth of thought which characterises

their educational policy, hold that as about 75 per cent. of the nation receive their first instruction in elementary schools, these must be erected in a style commensurate with the dignity and extent of the task allotted to them. They wish their elementary schools to stand in the forefront of municipal buildings, to be provided with the best educational appliances, and to be finished and decorated in the interior in such a manner as to awake the sense of beauty in children by the artistic forms and colouring which surround them during the impressionable period of their school life. And yet Germany is about 50 per cent. behind England as regards national income and wealth.

It must not be inferred from these facts that Germany has neglected swimming baths and the art of swimming, in which a certain amount of progress has undoubtedly been made in England. On the contrary, I think that just as much progress, if not more, has been made in Germany in the erection of swimming baths and the teaching of swimming. It must be remembered that Germany, in addition to ordinary town swimming baths, possesses an extremely large number of river and lake baths, the latter being generally floating wooden erections. Swimming is a matter of necessity in Germany, as all those boys who are unable to swim are compelled to do so during the period of military service, and efforts are made to induce them to learn swimming at an early age so as to avoid the greater discomfort to themselves, and the greater trouble to the military authorities, of teaching it at an advanced age. School children are admitted to the town swimming baths at one penny per head; if they are poor, no charge is made. They often attend in whole classes during school classes, accompanied by their teachers. Every soldier in the German army is required to pass an examination in swimming before he is dismissed from the military swimming schools. This generally consists of his showing his capacity to support himself in the water by swimming and floating for the space of half an hour. In this manner it may be fairly safely asserted that all the efficient male units of the German Empire are able to swim; I might add that every fourth or fifth man is able to ride.

As far as I have been able to observe town swimming baths in Germany are carried on in a much more sanitary manner than in England. In the newer German town swimming baths, no persons are allowed to enter the swimming pool without having previously soaped and washed themselves under the douches provided for this purpose,

and the water is renewed as often as possible, generally every day in the summer. In many towns children are not only required to douche, but are sent to the offices before entering the pool. In England I am afraid there are very few swimming baths where compulsory previous douching is required. On the contrary, a great deal of perverse ingenuity has been expended in ridding the water of the scum and sediment which naturally accumulates when dirty persons use the swimming pool. I know of one bath in London which is fitted with a steam pipe, perforated with holes placed about an inch above the surface of the water at one end of the bath. The object of this pipe is at stated times to blow off the scum to the opposite end of the bath for purposes of removal. At another bath, a long wooden pole was provided and was dragged across the surface of the water to collect the scum. At an Edinburgh school a few years ago, the water was only renewed once every three weeks, although 400 children used the swimming pool per week. The sediment which naturally collected at the bottom was carefully coaxed by means of a long handled broom towards the lower part of the bath, and then drawn off by an ingenious suction apparatus, in order to prevent any appreciable loss of water. A little common sense in the shape of the installation of a few douches and making douching compulsory before entering the swimming pool would have been much simpler than this interesting application of perverse ingenuity.

I am afraid, Gentlemen, that in spite of what has been done in Germany and on the Continent in shower baths and swimming baths, and in England in swimming baths, the twentieth century is still far behind antiquity. At the time when Constantine removed his residence to Byzantium, Rome possessed no less than 860 public baths, with a daily consumption of some two millions of gallons of water.

Now, what has been done in England for the systematic inculcation of bodily cleanliness on a broad and comprehensive scale? Here, again, I must strictly differentiate between shower baths for the purpose of washing and powerful invigoration of the skin, and between swimming baths for the purpose of physical exercise and gentle invigoration of the skin. With the sole exception of the installation of four douches at the Pulteney School in London, no attempt, as far as I am aware, has been made anywhere in the United Kingdom to grapple systematically with this problem, the result being that even little German provincial towns, with populations under 20,000, are far in advance of London. There are even districts in

Germany where shower baths have been installed in the village schools. To be brief, Gentlemen, it appears that the sting of the contemptuous remarks uttered so glibly for many years by Englishmen with regard to the personal cleanliness of certain other Continental nations is being slowly but surely turned against us.

It is not impossible that shower baths may be made compulsory in all elementary schools in the German Empire, as one of the measures for the promotion of national efficiency. It would seem, however, that any compulsion would be unnecessary, as at the present moment the attendance without compulsion has reached a very high figure. The probable effect of compulsion would simply be to accelerate the installation of shower baths in older schools not yet provided with them.

No complete compendium of the results achieved by shower baths in Germany has been published, but the reports that are available up to the present date are altogether in favour of the system. The half-hour devoted to shower baths per week has amply repaid itself in the diminution of verminous conditions, in the improvement of clothing, of the school room air, and of the health of the children. And although no methodical observations have been carried out it seems probable that it has also resulted in an increased zest and capacity for learning, and in some diminution of skin diseases and infection.

This most important development of school hygiene and of public health is one in which England has apparently made no progress for the past generation. It seems to be one of those branches of public work which has been completely neglected owing to the lack of any particular authority for its furtherance.

Such an important movement in school hygiene in foreign countries should certainly have been watched by the Board of Education, but here again matters that are really essential, the scientific methods of educational work, and the care of the development of the faculties of children have languished from lack of rational attention, chiefly, perhaps, on account of the absence of expert advisers at the national educational headquarters. This authority, as at present constituted, performs only part of the functions lying within the legitimate province of a Ministry of Education.

I will now deal with the all-important question of expenditure. In Germany and other continental countries, the sums expended for school shower baths vary considerably

according to the general quality of the installation, the number of douches, and the provision of common dressing and douching boxes or of separate dressing and douching boxes.

Thus there exist in German schools small basement installations with common dressing and bathing rooms which have only cost about £150 to £200, and others again at Cologne with separate dressing and bathing boxes which have cost from £500 to £750. The shower bath centres at Amsterdam (40 douches) cost £1,600 inclusive of the site. As far as can be ascertained, the shower-bath arrangements installed in many already existing German schools seem generally to have cost from £150 to £300. Many, however have cost considerably more. With regard to the provision of shower baths in new buildings, it is very difficult to obtain separate figures, as these are generally included in the total estimates, as far at least as the necessary space and walls are concerned. In many of the newest schools up to £800 has been expended for installations.

In England, more especially London, we have to deal with different conditions. Few of the London schools are so constructed as to permit of the introduction of a suitable shower-bath installation in their basements. It will be necessary, therefore, to erect separate buildings to serve as shower-bath centres. To avoid the heavy expenditure for building sites, it will further be necessary in the majority of cases to utilise the playgrounds. The buildings themselves will cost more than on the Continent, owing to the requirements of building regulations, dearer materials, higher wages, and so forth, and also on account of the provision of separate dressing and bathing boxes, if it is decided to adopt this system. The last provision seems necessary to conciliate the parents of many children who might object to joint dressing and washing, but it materially increases the expense. I make no comment upon this beyond saying that while perhaps desirable in the case of girls, especially older girls, it seems unnecessary in the case of boys. This difficulty could be met by the provision of common undressing and bathing rooms for the younger children and a number of separate dressing and douching boxes for older girls and boys.

After careful consideration of the necessary estimates, it appears that a suitable shower-bath centre could not be erected in London under £2,350. This centre would consist of a douching room, an undressing room, washing and drying room, and so forth. The douching room would provide 50 douches in separate boxes, corresponding to 50 boxes in the

undressing room. If only 10 or 12 undressing and douching boxes were necessary, a considerable reduction might be made, but for the present I adhere to the original estimate for separate douching and dressing boxes throughout. Such a shower-bath centre could provide at least 100 baths per hour, or 600 per day, or 3,000 per week. With a little management the number could be raised to 3,500 per week.

Now at the present time there are some 495,000 children and 265,000 infants in the London elementary schools. The former alone are to be taken into account, as it would probably be advisable to exclude infants. Of the 495,000 children about 30 per cent. must be deducted in the case of children whose parents do not wish them to bathe, or who are forbidden to bathe on account of their health, or who possess ample bathing facilities elsewhere. This leaves, then, some 345,000 children to be dealt with. On the basis of 3,500 children, or, roughly, of 10 or 12 schools, to one shower-bath centre, about 100 centres costing £235,000 would be necessary. Further expenditure for bathing garments, towels, &c., will bring the total expenditure capital to £240,000. The expenditure for maintenance for each centre would scarcely be less than £500 per annum, for an attendant, laundress, water, coal, repairs, &c. This would give £50,000 annually for the 100 centres. This sum, together with the interest on capital expenditure, would give, roughly, an annual increase of £60,000 on the education account. It would provide all eligible children in the London elementary schools with one bath per week at the cost of about 1d. per bath. The total annual number of baths given would amount to something like fifteen millions.

It may be objected that this sum could be materially reduced by the utilisation of London swimming baths. This is entirely out of the question. London is ill provided with swimming baths—there are, I believe, only about 70—compared to its great size, and the swimming baths are not there for cleansing purposes but for physical exercise. At least 50 spray baths would have to be installed in every swimming bath, and it is very doubtful whether this would be structurally possible. Even if this difficulty were solved, the use of the baths by the general public, their unsuitable position with regard to contributory schools, their insufficient number and size, and many other organisation drawbacks render this suggestion utterly impracticable.

These figures are tentative, Gentlemen, and although they may be reduced by future estimates, the expenditure necessary

for the introduction of systematic shower bathing into the London schools will always be of a formidable nature.

It is useless to close one's eyes to the fact that the introduction of a measure of school hygiene of such magnitude cannot be effected without a corresponding sacrifice. If the local authorities cannot provide the money, then Government aid should be solicited for such a measure for the promotion of national efficiency. A grant of two millions and an annual maintenance of half-a-million would enable the school shower-bath system to be introduced throughout the United Kingdom. I have little faith in any help from private sources. Our English millionaires, unlike their brethren in the United States, seem to be deaf to appeals on behalf of education.

There remains the final question as to whether the idea should be abandoned. I think we dare not arrive at this decision in view of the great benefits which will undoubtedly be conferred by the system and the extent to which it has been adopted by other and poorer nations who have realised its importance. I refer, of course, more particularly to Germany, our great rival in so many fields. For the present the solution of the question seems to be this: To adopt the system in principle, to introduce it gradually into existing schools, and to decree that all elementary schools, without exception, to be built in the future, must be provided with a suitable and efficient shower-bath installation.

I add some remarks on the general principles to be followed in the erection, installation, and use of school shower baths.

The installation of shower baths in the basements of schools, although economical, is not without objections. The height of the room is often too low, and light and ventilation are defective. The last is important because it may cause dampness in the passages and in other parts of the school buildings, besides preventing the thorough drying of the towels and bathing garments. I see no reason why the baths should not be installed in the ground floor, with large windows, the lower halves of which should be of frosted glass. With a little care any interference with the general architectural effect could easily be avoided. The space occupied in this manner would not be excessive. It should be remembered that where a school is provided with an installation for its own exclusive use a much smaller number of douches is necessary. For example, in a school of 700 children (including infants), where about 500 children bathe, 15 douches will amply suffice. Taking one half-hour per bath, 90 can be

given per day of three hours, or 540 per week. Where, however, a shower-bath centre is established attended by several schools, a separate building will be required.

It will be necessary to construct shower-bath installations and centres of strong and durable materials on account of the constant wear and tear to which they will be subjected, and the disintegrating and decaying action of water and vapour. Wood must be banished from the douching-rooms, and superior hard and chemically impregnated wood used in the dressing-rooms. The dressing-boxes should be brought down to within six inches from the floor so as to permit of their being flushed with water once or twice a day. The whole building should be lighted by windows in the roof or large ordinary windows, and capable of the most thorough ventilation. The attendant's room in centres should be so placed as to command a view of both dressing and douching-rooms. Provision for warming the building in the cold months of the year will be necessary. Small troughs about six inches in depth should be let into the floor underneath the douches of bathing cells, so that the feet of the children remain under water during douching. When the bathing is carried on in common one long trough should be supplied.

Special precautions must be taken to prevent any scalding of the children. To this end it would perhaps be best to place the manipulation of the warm and cold water supply entirely in the hands of the attendant. To ensure complete safety in this respect some automatic mixing arrangement ought to be adopted, so that even in the case of negligence on the part of the attendant the temperature of the water would never exceed a certain degree. Some few douches might be provided with an alternative arrangement enabling a few older and more experienced children to provide their own warm and cold water independent of the working of the majority of the douches. It will also be necessary to cut off the supply of water at will from any given number of douches, in case only a limited number are needed at any particular time.

A few douches should be placed at such an angle that children who cannot endure warm or cold water upon their heads may bathe their bodies whilst their heads remain outside the spray.

The dominating colour of the douching-room should be white. The walls of the dressing-room should also be white, a light blue or green. The woodwork of the dressing-room should not be painted, but varnished in light red or yellow.

Dripping-boards should not be used to cover the floors of the dressing-rooms, because they accumulate dirt and gradually decay, giving off a mouldy odour. The floors should not be of cement, which is too cold for the feet, and, from its grey colour does not show dirt, but of some composition of sawdust and mineral, of which several exist; they should also be ribbed to prevent slipping. A specially prepared kind of linoleum could be used for part of the flooring principally trodden upon by the children. I have seen linoleum in German baths which has been used for five years without deterioration. The walls should be covered with white glazed tiles from floor to ceiling. If separate douching cells are installed they must be of marble, white glazed tiles, or very thickly enamelled iron. Zinc or painted iron divisions must be strictly avoided. No sharp edges and projecting corners must be allowed; everything must be rounded, and every precaution devised against slipping.

Great care must also be taken to prevent the children contracting a chill during the bathing operations. Good ventilation must be effected without unnecessary draught, and the children's clothes in the dressing-rooms must be kept dry. A small ante-room or convenient passage must be provided where the children, after bathing at a centre on a cold day, can remain, before leaving, for about five minutes, at a temperature between that of the dressing-room and the outside air. Small offices will also be necessary.

It is also of the greatest importance that the presence of vermin should be rendered impossible within the precincts of the bathing premises by careful choice of building materials, the greatest possible avoidance of seams, crevices, corners, and crannies in the internal equipment, and by thorough daily flushing and washing of the bathing and dressing-rooms. Whether it will be necessary or feasible to include apparatus for the sterilisation of particularly verminous clothing is a question for future consideration.

The use of the shower baths should not be compulsory in any way. They should be regarded by the children as a benefit and a pleasure, and those children who do not wish to participate should not be allowed to feel that they are more wanting in the principles of bodily cleanliness than those who elect to bathe. It would be advisable to exclude infants and many children who are suffering from disease or whose nervous system is unable to bear the stimulative effect of hot and cold water. Special care should be devoted to those children who are lame or who suffer from some malformation of the body

which might make them the butt of thoughtless remarks ; for such afflicted children the provision of separate cells would be very suitable.

In pursuance of the non-compulsory character of the baths, a certain latitude in bathing, within the necessary limits, might be permitted. Children should not be forced to use soap, nor should they be compelled against their will to take the cold douche. The latter, of course, should never be too cold, and should always be regulated in relation to the outside temperature, colder in summer than in winter. Shouting and shrieking should be forbidden, but conversation carried on in an ordinary tone and a certain amount of sportive play should be permitted. Anything that may make the children nervous, such as obscure light, the hissing of vapour, chilly or mouldy air, being unduly hurried in bathing, and so forth, should be carefully avoided. Many children are essentially timid, and the unfamiliar operation of douching, with the unwonted surroundings, is sometimes sufficient to disturb their nervous equilibrium. All these considerations indicate the suitability of placing the bathing premises on the ground floor, or, at most, a few feet below the level of the ground.

If the spirit of the above remarks is carried out no compulsion will ever be necessary. Children who bathe will report their favourable experiences to those who abstain, and will thus bring new recruits. In the cases of those children who cannot be reached in this manner, the kindly tact of the teacher will be of the greatest value. When teachers notice that a child who abstains from bathing evidently requires it, either from its personal appearance or from their knowledge of the absence of such facilities at home, they should take the child apart, and persuade it in a friendly manner, perhaps even speak to the parents should the opportunity offer. The last step, however, should be taken with great care ; some parents who object to their children bathing are not seldom themselves " water shy," and others object because they fear their children may contract cold or infection.

Here the efforts of the teachers must be aided by systematic action on the part of the local education authorities. Leaflets, setting forth the advantages of the shower baths, and refuting absurd and puerile objections to them, should be supplied to the parents of all children at the beginning of every term ; in addition to this, public announcements to the same effect should be made in the leading papers.

One final word. It should be clearly understood that school bathing is only to be carried on during school hours, and that the participation of the teachers is to be limited to the ordinary maintenance of discipline. In the bathing premises the teachers must have full authority over the bathing attendant and all preparatory and bathing operations, and must not be required to undertake any of the duties of the bathing attendant. The co-operation of this great army of trained and devoted public servants is necessary for the success of the movement, and the conditions under which they are to participate in the work must be clearly defined and understood, and their enthusiasm for a great national reform aroused. I have seen schools abroad provided with excellent installations, but where the bathing is carried out in a perfunctory, careless, and languid manner, owing to lack of intelligent appreciation and enthusiasm on the part of the staff from the head to the youngest assistant. Once the system is introduced, and I hope and trust the day is not far distant, it is to them that I look for its thorough execution and final success. The work undertaken by teachers in this respect will be amply repaid to them in the improved atmosphere and more agreeable surroundings which must inevitably result, and by the knowledge that they are assisting in a work of the greatest physical, mental, and moral value to the children and the community in general.