Report.

THE SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE, LONDON, 1907.

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This Congress was held in the early part of 1907, but for various reasons the published Transactions were not able to be issued until the latter part of 1908. The record of proceedings, occupying about a thousand pages octavo and divided into three volumes, has been produced under the joint editorship of Dr. James Kerr and Mr. White Wallis. These volumes form almost an encyclopaedia of present-day knowledge on all branches of hygiene and physiology as applied to educational matters, as may be seen from the titles of the reports on the various sections into which the Congress was divided. These were: Physiology and Psychology of Educational Methods and Work, Medical and Hygienic Inspection of Schools, Hygiene of the Teaching Profession, Instruction in Hygiene for Teachers and Scholars, Physical Education and Training in Personal Hygiene, Out of School Hygiene, Contagious Diseases, Ill-health, and other Conditions affecting Attendance, Special Schools for Feeble-minded and Exceptional Children and, Blind, Deaf, and Dumb Children, Hygiene of Residential Schools, and, lastly, the School Building and its Equipment.

In all Congresses it is difficult for any conscientious member to put in an attendance at all, or even nearly all, the meetings that he wishes to be present at; a selection must necessarily be made where several are held simultaneously. At this Congress the difficulty appeared to be very great, there being eleven sections, and therefore, as a rule, eleven separate meetings being held concurrently. Although certainly no fault could be found with the management of the Congress as a whole, because it was a conspicuous success, with regard to some of the sectional meetings there seemed to be occasionally a waste of time in one way or another, and the scientific work had sometimes to give way to the imperious demands of a congressional excursion.

The Inaugural Address by Sir T. Lauder Brunton on August 5th was commendably brief and to the point. Two subjects specially dealt with by the President may be here alluded to, and his own words cannot be profitably condensed: "The great advantage of a Congress like this is, that the systems employed in various places are brought together and compared, so that each country may learn from the others the useful
plans they ought to adopt, and the errors they ought to avoid. One of the most important subjects of all in this respect is that of medical inspection of schools, because this is the keystone of physical education. Without it, the defects of eyes, ears, nose and teeth, which affect individual scholars, cannot be ascertained; and so those children remain backward in their learning, suffering in their bodies, and so much damaged in physique, that they are unfitted for many occupations, cannot enter the Army, and go to swell the numbers of the criminal classes. Moreover, such defects are most expensive to the country. It has been found in New York, as I am informed by Dr. Gulick, that "it is far cheaper to see to it that these children have eyes and ears, noses and throats, which permit of their progressing through the school at the regular rate, than it is to keep them in the lower grades of the school where they do not progress, furnishing them school-room and expensive instruction year after year, when they are not taking advantage of such instruction." Equally important are those hidden defects of heart and lungs, which render the physical exercises (suitable for others) harmful and dangerous to the child with a weak heart, and make a child suffering from phthisis unsuitable for school life, and a source of danger to its companions. By early recognition of phthisis in a child, it may not only be prevented from spreading the disease, but, by proper treatment, it may be cured and grow up to be a useful citizen. By the early detection and isolation of infected children the necessity for closing schools may be, to a great extent, prevented, the spread of skin diseases completely checked, and even a fatal disease like diphtheria may be almost stamped out.

"One of the most useful stimulants to the circulation and nutrition, both of children and of grown-up people, is pleasure, and anything that adds to it helps to develop both mind and body. There is a great fear in this country of militarism, and I doubt if there is anyone in this country more desirous of peace than myself. But one cannot watch children without seeing what an enormous pleasure a pop-gun gives them, and I doubt if one could find three peoples freer from the military spirit than the American settlers, who beat our armies a little over a century ago; the Boers, who nearly did the same a few years ago; and the Swiss, who spend more on education and less on military training per head than any nation in Europe; yet they were all trained from childhood to the use of the rifle. Shooting with rifles, properly adapted to their size and strength, is an exercise which tends to bring out many of the best qualities of boys, as some of you have perhaps seen a day or two ago at Bisley. But what one would hardly imagine is that it has sometimes a powerful moral effect for good on a household. One street boy won a prize at Bisley, and from that moment his home changed for the better, because the pride his father and mother took in him enabled them to become sober and industrious, and live up to
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the level of what they thought their boy had attained. If boys are trained to shoot, many of them will, I think, when they leave school, join the ranks of the volunteers instead of becoming hooligans. Moreover, if they once get a liking for shooting they will not become intemperate, because intemperance would make their hands unsteady and spoil their chances of successful aim.

Three lectures were given to the Congress as a whole, of which one by Bishop Welldon on "The Effect of School Training on Mental Discipline and Control in Adolescence" appealed to all, and was listened to with great attention. The others, by Dr. Doleris, of Paris, on "Les Sports au point de vue de l'Hygiène chez la Femme et la jeune Fille"; and on "The Relations between Medicine and Pedagogy," by Professor Griesbach, of Mulhausen, were of a more special and technical character. Dr. Welldon spoke from his forty years experience as a schoolmaster, dealing chiefly with general principles. He quoted Kant and Locke as to the humouring of children. Kant wrote: "The custom of nurses and mothers to hurry to a crying child and sing to him, &c., is very injurious. This is usually the first spoiling of the child; for if he sees that he obtains everything by crying for it, he cries all the more." As to corporal punishment, it is, he says, "indeed dying out in English schools; and, by a curious paradox, it lingers in the schools of the rich when it has been abolished in the schools of the poor. How touching a sign of the times it is that Mr. Charles Booth in his house-to-house visitation of the streets in the East of London, should have come upon a man who described himself as a vendor of canes, reduced to poverty by the abolition of corporal punishment in the board schools!" Dr. Welldon says: "At whatever cost, the habit of unquestioning obedience must be created in the young. When I was headmaster of Harrow School, I used to say to my colleagues, 'Begin by making the boys feel that you are prepared, if need be, to grind them to powder; then you may safely grant them as much liberty as you will.' The quality which affords the best promise of success in the teaching profession he would call 'sympathetic severity'—the absolute strictness which is yet recognised by pupils as being the basis of a tender heart, like a rock with sunshine playing upon it." Selfishness he considers to be the most frequent and potent of the moral causes which blight the child's character: "Unselfishness is the result of disciplined habits, and the habit is one which needs to be encouraged in every house as well as in every school." It is possible that education itself has been made a little too easy. "All true education," says Professor Sadler, "involves and is the better for sacrifice." This must be deliberate and habitual; early rising, punctuality, plain living, high thinking. Long ago Locke complained that "Most children's constitutions are either spoiled, or at least harmed, by cockering and tenderness"; what would he have said to the heated rooms, the luxurious accommodation, the richly
furnished tables of some modern fashionable preparatory schools? "There is certainly," says Dr. Welldon, "greater temperance in drinking among public school boys now than in former years"; but he is afraid that this is more than balanced by indulgence in eating. He is rather against the present prize-seeking motive that prevails in educational systems. It seeks the reward of learning, not in the learning itself, but in the honour attached to it. The whole idea that a person should do his duty, and should do it, if need be, at great personal cost and without any anticipation of reward, is alien from modern educational theory. But the desire of beating others is not a motive which generally needs to be encouraged; ambition has been the scourge of human history, and it has been a surprise to Dr. Welldon that schoolmasters and mistresses should show so little scruple in proposing ambition as an object to their pupils. The lecture concluded with a comparison of the patriotism of Japan—where the Rising Sun waves in the breeze upon every tramcar, and in the schools the veiled portrait of the Mikado hangs upon the walls—with that of ourselves, who "are but now beginning to appreciate the spell which the national flag, displayed as a symbol on school buildings, may exercise over ardent youthful spirits." Dr. Welldon's address was equally full of sober wisdom and pleasant humour, and was received with much applause.

There were four set discussions for the Congress as a whole; the first was on School Work in its Relation to Duration of Lessons, Sequence of Subjects and Season of the Year; the second was on the Lighting and Ventilation of Class-rooms. This latter was introduced by Sir Aston Webb, who was followed by Messieurs Courtois and Dinet, and Professor Wilhelm Prausnitz.

Sir Aston Webb stated at the beginning of his paper that he claimed no originality for his remarks, merely recording, his own experience, and what he believed to be the present practice in England. With reference to the size of class-rooms in regard to lighting and ventilation, the Board of Education's regulations determine the area but not the shape of the room. Sir Aston considers that the nearer the room approaches a square the better; with the limitation that it can hardly be lighted satisfactorily if it is wider than 24 feet, while 22 feet width is better; for height 12 feet is generally sufficient, though (for a large number) 13 or 14 feet may be necessary. It is assumed that the lighting "is, as it should be, from one side only"; and again, "it seems hardly necessary to mention that it should be lighted from the left hand of the scholar only."

As regards aspect, it was advised that class-rooms should be so placed that they have sun in them during part of the day, but not always; north, west, and south-west, if unprotected, should be avoided. From the point of view of health, everyone will agree that a north aspect should be avoided; but if the only reasons for avoiding west and south-west aspects
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be that they are too sunny (and it is difficult to see what other reason can be advanced), probably most hygienic authorities would consider that we do not, as a rule, have too much sun in this country; that any excess can be overcome sufficiently by blinds; and that to avoid a west or south-west aspect might involve choosing one towards the east or north-east, which would be cold and comparatively cheerless. Of course, in an exposed situation a south-west aspect might be too wet and too windy.

Sir Aston Webb alluded to the importance of the class-rooms being thoroughly "aired-out" between each class; but in his description of the window arrangements he did not appear to contemplate the provision of any windows at all in the wall opposite to that in which are placed the main lighting windows. It would be impossible to flush out a school-room with fresh air, if there are windows only on one side. He seemed to speak uncertainly in regard to the heating and ventilation. He admits that there is much to be said for the open fireplace and open window in small schools; but for larger ones this system is impracticable. He recommends either mechanical extraction of foul air at the ceiling level, with hot water radiators under the windows, fitted with bafflers, behind which the fresh air is admitted; or propulsion of warm air into the room by a fan, the air being admitted about two feet below the ceiling. "Each system has its advantages, according to the size and special circumstances of the building, and with mechanical means now so readily at our disposal there should be no difficulty in providing either the temperature or change of air" that may be necessary or advisable. Unfortunately, in practice there does seem to be great difficulty in attaining this result, i.e., in securing fair purity of air in combination with a suitable temperature.

Dr. George Reid adduced the Staffordshire experience, which showed that, from a lighting point of view, it was quite satisfactory to have windows on opposite sides; with this arrangement adequate ventilation could be obtained without mechanical means. "Year by year we are becoming less afraid of fresh air, and a school which complied with open-air conditions as far as possible was the ideal type for the future."

Messieurs Courtois and Dinet consider it impossible to lay down fixed rules for the orientation of class-rooms; but for France in general prefer an aspect between north-west and north-east, the lighting being from two sides, but derived mostly from the best lighted aspect (whichever it may be). They admit the importance of ventilation by the open window, but do not believe that it is always possible to carry it out, and therefore recommend mechanical means; renewal of the air of the class-room being effected three times an hour.

The third set discussion, on The School in Relation to Tuberculosis, was introduced by a short but admirably condensed paper by Dr. News-holme, who dealt with the question from the following standpoints: (1) Whether tuberculosis is spread in elementary day schools, and to
what extent; (2) whether the conditions of life and work in such schools tend to bring into activity latent tuberculosis; and (3) as to such schools considered as important means for teaching and training children so that we may obtain the aid of the next generation in the rapid elimination of this disease. To begin with, Dr. Newsholme showed that tuberculosis of all kinds is, as a fatal disease, relatively uncommon at school ages (5 to 15); also that pulmonary is of less frequency than other forms of tuberculosis at these ages; whereas from 15 years onward pulmonary tuberculosis accounts for the vast majority of all tuberculous deaths; it being granted that, as a means of spread, the pulmonary form is far and away the most important (expectoration, spray infection), also that there are constantly ten non-fatal cases for each annual death. Dr. Newsholme calculates that there are not more than about three in every thousand children attending elementary schools suffering from this form of the disease. From the results of actual examination it appears that there is not, on an average, more than one in 300 "showing revealed or diagnosable" pulmonary tuberculosis. It is not, therefore, likely that there is much spread of infection from scholar to scholar; teachers and caretakers are more likely sources.

Latent tuberculosis is nearly always non-infectious, but is undoubtedly frequent in children (the offspring of consumptive parents), and has important bearings on school hygiene. With a view to prophylaxis as regards these children there are two procedures available; the children may be removed, temporarily or permanently, from their own homes to homes or schools at the sea-side or in the country; or the consumptive parent may be treated in an institution. Dr. Newsholme holds that, if there is a choice, "the balance of good lies on the side of measures directed towards removing the patient himself [i.e., the parent] rather than of measures for removing the children from the domestic circle."

The principal preventive measures as regards schools may be summarised as follows: (1) Medical examination of children on admission, and afterwards periodically; (2) exclusion of children with revealed tuberculosis; (3) special care as to feeding and general hygiene of children from tuberculous families, including avoidance of fatigue; (4) frequent wet cleansing of schools; (5) reduction of overcrowding; (6) improvement in ventilation and warming; (7) attention to personal hygiene, particularly adenoids and carious teeth; (8) examination of teachers and caretakers, and avoidance of voice-strain and over-fatigue by the former.

Thirdly, Dr. Newsholme says truly that "public opinion is formed in the schools; and if each teacher and scholar is taught to practise the laws of health, a much more rapid decline of tuberculosis can be secured." Domestic infection is of supreme importance; if good habits are inculcated as to coughing, expectoration and scrupulous cleanliness, and knowledge
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is obtained as to the relative value of foods, and the dangers of alcoholic
drinks, the school will be a valuable aid in preventing tuberculosis.

The fourth set discussion was on The Examination of School Children.
Dr. Leslie Mackenzie, Medical Member of the Local Government Board
for Scotland, detailed the objects and extent of this examination, emphasising
the points, that it is not possible "to separate the personal examination
of the child from the examination of his home environment; that
"when the three primary facts—occupation of parents, size of house,
and number of inmates—are recorded, the school becomes an important
connecting link between the public health authority, the poor law authority,
the police authority, and the education authority"; and that "the school
is always the largest single depot of public health material we have access
to." He attaches great importance to the part played by the teachers
in this examination, and testifies to the readiness and competence of
the teachers in Scotland in regard to it. He is inclined to use the existing
public health service for the work, and has little doubt "that, at least
in Scotland, the authorities for public health and the authorities for
education will amalgamate their medical services until it will be
impossible to draw a line between the health service and the medical
service of schools."

Dr. H. Méry, Professor in the Faculty of Medicine in Paris, presented
a report, detailing a standard method of examination, and called on the
Congress to constitute an International Commission for the collection of
information and the establishment of standards of anthropometric data,
&c. His propositions were, shortly, that the examination should be in
three parts: (1) Weight, height, and thoracic measurement; (2) hearing
and sight; (3) general body condition—skin, hair, teeth, circulatory
system, and especially the lungs and the vertebral column. Abnormal
children should be examined more particularly; normal children should
be measured half-yearly. Dr. H. Kokall, of Brunn, described the methods
of examination of school children in that city and furnished statistics
of the principal defects observed.

The proceedings in Section I., which was concerned with the Physiology and Psychology of Educational Methods and Work, opened with a
characteristically eloquent and interesting address by Sir J. Crichton
Browne, on "Mind, Brain, and Education." The subjects dealt with in the
papers varied much in scope. Professor Sully discussed the "Bearing of
Schoolwork on Healthy Mindedness"; the Headmaster of Eton drew a
"Comparison between the Training given by Classics and Modern
Languages" (the meaning is plain, but surely the form of expression is
open to criticism). There were papers on many topics; and in particular,
a plea for return to the method of sloping writing by M. Desnoyers, of
Paris, who maintains that, although when sloping writing is done with
the book in the same position as for vertical, then the body has to be twisted; nevertheless, if the book is twisted, then the body can be kept straight. The straight position is more easily maintained than with upright writing, as there is less displacement of the right arm. This view does not seem to have elicited criticism or to have met with acceptance. In Section V., however, Dr. Gagniere read a paper on the same subject in its relation to curvature of the spine. He recommended a sharp look-out for the early signs of these curvatures, a curtailment of work in the sitting position, and the use of a seat that would reduce to a minimum the flexion of the thighs on the pelvis; but he did not consider that the method of writing, either vertical or inclined, had any preventive action against the development of curvature.

Professor C. S. Myers, of King's College, spoke on "School Fatigue." It is most apt to occur among slum children who receive insufficient sleep and food, the former cause being the more important, as seen in children who are wage-earners out of school hours: they do worse at school than the other children; while children coming hungry to school do not do worse. He believes that the average elementary schoolboy does not get sufficient sleep. Dr. Baur, of Wurtemberg, described the measurement of fatigue in children by "Scheiner's experiment." Two fine holes, about the width of the pupil, or less, distant from each other, are made in a card with a needle. The eye, held closely to the card, observes the point of a pin, looking at the same time through both holes, at a distance of about 20 cm. Within the limits of accommodation the pin's point appears single; when approached nearer, or removed farther, the eye will see it double. The more perfect the power of accommodation, the nearer to the eye will the pin appear single; or, the lower the accommodation sinks, the further must the pin be removed, in order to be seen single. The investigation can be done in one minute. Miss Ravenhill gave the results of an enquiry into the hours of sleep of 9,000 elementary school children; whereas the standard allowance should be thirteen hours at 7 years of age, falling steadily to eleven hours at 13, the actual hours of sleep were—for boys, eleven hours at 7, falling to eight hours at 13; and for girls, eleven hours at 7, falling irregularly to nine hours at 13.

Professors Myers and Edgar corroborated Miss Ravenhill's statements, and emphasised the importance of the enquiry; deficiency in sleep is one of the main causes of physical degeneration. A distressing paper was read by Professor Chlopin, of St. Petersburg, on "Suicide and Attempts at Suicide in School Children." Dr. J. C. McWalter spoke on "Physiological Sins and a Health Conscience," a short but important contribution, from which a sentence may be quoted: "Ideas of parental duty are being rapidly recast; and fathers and mothers, who are now inclined to deride us as faddists because we insist on medical inspection of schools and scholars, will shortly be called on to render a terrible account to their
offspring who find themselves the victims of defects of vision, or hearing, or health, or of deformity, which the parents could have had corrected, if they had listened to our warning in time. Nothing is more certain than that in a few years children will demand satisfaction from their fathers for every evil or inconvenience from which they suffer, and which might have been averted by timely care." When, however, Dr. McWalter states that "It is a physiological sin to build a school, or to inhabit one, on a damp clay soil," we should like to ask him where we are to build it, if we live on a clay formation. A school air-ship at anchor would appear to be the only alternative, but this can hardly be intended. A short paper by Herr Rolier, of Darmstadt, should send many teachers and school doctors to a study of John Locke, who in the seventeenth century devised a practical code of school hygiene, well worthy of attention at the present day.

Section II. of the Congress was concerned with Medical and Hygienic Inspection in Schools. Professor Osler presided, and opened the proceedings with a few introductory remarks, pointing out the difficulties of the subject, acknowledging that we are far behind Austria, Sweden, the Argentine Republic, Hungary, Norway, Switzerland, Servia, France, Japan, Roumania and Russia; in all of which countries medical inspection is in force by legal enactments, which have come into operation in the several countries, in the order named, between 1873 and 1889; and defining the ideal conditions, viz., first, a central department at the Board of Education, which would supervise and co-ordinate work throughout the country; secondly, at each school, an intelligent woman, preferably one who has had experience as a nurse, who would carry out anthropometric observations, and assist the doctor in matters relating to the hygiene of the school and of the children; thirdly, the school dentist, who would make a quarterly inspection and put the teeth in order; and lastly, the school doctor.

Thirty-one papers were contributed to this Section, a larger number than in any other. Most of these papers, and the discussions arising from them, referred to the following points: the relations between the teachers and the newly appointed school doctors and nurses; the scope and methods of medical examination of children, especially with regard to the teeth and the eyesight; treatment at school; school anthropometry.

Dr. Hayward, of Wimbledon, strongly advised enlisting the active co-operation of the teaching staff in regard to the medical inspection: "The doctor should invariably, before an inspection, interview the head teacher and arrange his work as best suits the convenience of the school. He should receive a general report as to the health of the scholars and the hygienic arrangements, and discuss any points of difficulty or doubt." He considered that "the efficiency of an inspection and the results obtained are almost entirely dependent on the attitude of the class teachers and the share of zeal with which they enter into the work." He found
that the keeping of a medical class-book in each room was a great help in an inspection; the teacher would enter beforehand the cases to be brought forward, and any points on class-room hygiene, appliances, &c. A personal interest and pride in the physical welfare of the children should be initiated at the training colleges for teachers, especially for men teachers who have not the same instinct for this kind of work as women. With regard to infectious diseases, Dr. Hayward considers that a large responsibility must fall on the teachers; they have their classes under constant observation, and can, with a little training, become acquainted with the prodromal symptoms of the ordinary infectious complaints and take the necessary steps for excluding any suspicious case. As to cleanliness, he says that the attitude of the teacher and the zeal of the nurse are the real factors in securing results. When they are keen, the children are clean, and a high tone in this respect is maintained. The weak point in medical inspection, after all, lies in the fact that it brings to light conditions over which we have very little control; a well-trained nurse, however, can do much by instruction and influence. In the discussion there was a general agreement that a cordial and sympathetic co-operation between the school doctor, the teachers and the nurse was essential.

Mr. J. W. Willis Bund, Chairman of the Worcestershire Education Committee, one of the most experienced and progressive of the non-medical authorities on public health and education in this country, contributed an exceedingly practical paper, in which he laid stress on the point that thorough inspection means economy for the ratepayers for two reasons: (1) the amount of the Government grant depends on attendance; (2) the attendance can only be kept up by keeping the children free from infectious complaints. Abnormal children should be separated and properly treated as far as possible, for "if these abnormal children are allowed to grow up without some attempt at cure, it means that it is only a question of at what time in their lives they will have to be included in the class supported by the rates. Taken young, it is possible that they may never come upon the rates, but able to maintain themselves; left to develop their abnormal tendencies, they will certainly at some time cease to be able to maintain themselves even if they can temporarily do so." It is the proper application of this argumentum ad crumenam that really forms the basis and justification for the whole system of medical inspection of school children. Of course it is costly, but it is money well laid out, and will result in a saving in the long run.

The medical supervision of schools in Sweden was described by Dr. Gottfrid Jornell. Besides the ordinary duties as now generally understood, it is the duty of the medical officer to attend indigent children free of charge, and to spend at least one hour per week on the school premises for the purpose of offering advice, if it be needed, to the masters or pupils.

Mrs. Watt Smyth gave an account of the system of inspection in
Bulgaria, which, as regards secondary schools, she considered might be copied with advantage in England. "It was interesting to note that during the past three years in the girls' secondary schools at Sofia no case of infectious disease from among the day scholars had got further than the doctor's consulting-room, and there had been no cases among the boarders. This shows what immense benefit can result from careful inspection.

The special subject of Children's Teeth was dealt with by Dr. Edward Wallis, and by Professor Jessen, of Strasburg. Dr. Wallis gave the results of his inspection of the Michael Faraday London County Council School, Walworth. Out of 245 children between 7 and 12 years of age that were examined, only four were found to have the normal number of healthy teeth; only three possessed tooth-brushes of their own and used them regularly; these three were practically free from caries. The teeth of most of the remaining 242 were coated with tartar and the débris of past carbohydrate meals and bacterial growths; 62 per cent. of the children had chronic enlargement of the submaxillary glands, due in great measure to the oral sepsis that existed in so many of them.

"The condition of the teeth of these children, that is to say, the children of an ordinary representative school in a poor district, is so bad that not only are they suffering from their purely dental affection, but owing to the secondary effects produced by these affections, their bodily nutrition is-impaired, and their physical and intellectual development hindered."

Dr. Wallis's chief remedial suggestions are: First, to obtain the co-operation of teachers and parents, to give instruction in care of the teeth as part of the general curriculum in training colleges and pupil teacher centres; also in evening schools, where the management of children is dealt with. A simple object-lesson is suggested—viz., to show that a tooth soaked in vinegar becomes so soft that it can be cut with a knife; this demonstrates the ill-effects of pickled cabbage, an article of diet that is working havoc among the teeth of the factory girl class. The need for, and right way of using, a tooth-brush should be explained. There are many difficulties, and Dr. Wallis thinks that the only possible plan is for each child to be provided with a numbered tooth-brush, to be kept at the school and used on arriving morning and afternoon. Finally, the greatest difficulty is the treatment; how to deal with half a million children, of whom about 90 per cent. require dental treatment of some kind. The appointment of school dentists seems to be the only course possible. The existing dental hospitals and dental departments of general hospitals are totally insufficient for the work required.

Dr. Jessen gave an account of the work of the Municipal School Dentistry at Strasburg, founded by combined private and municipal effort—the first institution of its kind in Germany. He said that "in Germany, at the present moment, at least 90 per cent. of all elementary school children suffer from decayed teeth. In some districts with plenty of chalk the
percentage of decayed teeth is somewhat less. In a large number of towns it rises to 95, 96, and 97 per cent." The number of children treated in the four years 1902-1907 increased yearly, and the cost increased from £115 to £450; but "in no part of the public medical service have such results been obtained with such small expense." The work of the children improved, also their general health. The attitude of the teachers was most sympathetic. The children took the greatest interest in the instruction given them about the care of their teeth, and "liked to be treated by the dentist" (sic in original). The benefits of the school dentistry are experienced by the children at once; the advantage to the community can be demonstrated in the course of a few years.

Dr. Wright Thomson recorded the results of his examination of 52,493 children, mostly of working-class parents, attending Glasgow schools, as to their acuteness of vision. He found that 35 per cent. had vision below the normal; 14 per cent., although unable to see well, had nothing apparently wrong with their eyes; the defect seemed to be functional. He found that in country schools the vision was much superior. He advised that in the infants' department an effort should be made to provide definite visual training, and that sewing and all other work involving close use of the eyes should be abolished.

In Section III., dealing with the *Hygiene of the Teaching Profession*, Dr. Macnamara, M.P., gave the Presidential Address, in which he insisted on the necessity for free ventilation of the school-rooms ("the air should be changed at the middle of each session just as regularly as the registers are marked at the opening"); deplored the practical difficulties involved in opening the windows, as in schools facing on noisy thoroughfares, where the teacher's "human voice is all day long in hopeless competition with the incessant and relentless uproar of rumbling drays, rattling omnibuses, jangling tramcars, and groaning motor-buses"; and urged on all teachers that they can be most impressive when they speak most softly. Lessons should be given in the open air as far as possible during the summer months. Provision should be made for the teacher, particularly the woman teacher, to sit down from time to time. He urged that the teacher, unless it was absolutely imperative, should resolutely decline to take his work home with him at night; recommended athletics in due moderation, especially golf; and advocated travel as the best way of taking a holiday. It would be a good thing if this short, common-sense address could be read by every elementary school teacher throughout the country.

Mr. Walter Todds gave statistics of the diseases incidental to the teaching profession. Influenza, throat complaints and chest affections are the most frequent causes of illness; while breakdown chiefly results from nervous diseases. Dr. Hulbert spoke on the care of the teacher's voice; and declared that "voice-production," that is, "the physical education..."
of the muscles of the vocal apparatus directly, and indirectly of all those muscles of the body which help the vocal muscles either directly or indirectly—therefore, physical education generally . . . is the one and only remedy for the loss of the voice-user's voice." Dr. Permewon believed that one cause of voice trouble in school teachers was the per­nicious habit of holding several classes in the same room. Mr. T. W. Williams said that the first necessity of voice-production was "deep breathing."

Sir William Collins presided over Section IV., dealing with Instruction in Hygiene for Teachers and Scholars, in which papers were read by Professor Carstairs Douglas, of Glasgow; Mr. K. A. Knudsen, State Inspector of Gymnastics for Denmark; Dr. Helen Putnam, of Providence, Rhode Island, and others. A resolution was passed "That all schools having courses for the training of teachers should give instruction in (a) personal and school hygiene, and (b) the principles and practice of physical training; and that to each of these subjects should be given as much time as to the major subjects in the course." Another resolution was carried, "That this Section is of opinion that the principles and practice of hygiene should form part of the education of every citizen."

(To be continued.)

Lecture.

THE SANITATION OF THE FIELD AMBULANCE.¹

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Royal Army Medical Corps (R.).

The practice of sanitation in the field ambulance is favoured by the knowledge of the principles of hygiene which is (or should be) possessed by every member of its personnel. It is, however, much more difficult to carry out efficiently than in the case of an ordinary camp, because in addition to the drawbacks common to all military camps, the field ambulance will contain sick and wounded, and these often in sudden and overwhelming numbers. Yet in no part of the system of the Field Army is good sanitation of more absolute importance, for without it the field ambulance will rapidly become a pest-house to its patients and a centre of contagion to the force to which it is attached. Look, for example, at accounts of hospitals in the Crimea.

¹ A lecture delivered to officers attending the East Anglian School of Instruction, R.A.M.C.T.