

INSTRUCTION IN HYGIENE IN UNIVERSITIES AND SCHOOLS.—A PROPOSAL.*

By G. A. HERON, M.D., D.P.H., F.R.C.P.

MR. PRESIDENT : Before entering upon the subject we are here to deal with this evening, I wish, Sir, to thank you very warmly for the honour you did me when you invited me to open a discussion, or to read a paper before this Society.

Of the great importance of our subject there can, I am sure, be no doubt; and the members of this Society are men whose criticism of what I have to say will be of great value.

Every medical man who has studied the subject, must have been surprised to find how deep is the ignorance of many people, in all ranks of life, concerning what ought to be common knowledge of the laws of hygiene. If need be, it is easy to convince oneself that this is true. There are frequent lapses from what should be, even among those best informed about the laws of health. As we all know, in Harley Street and Wimpole Street, on almost every door, a name upon a brass plate tells that a doctor lives in the house. Indeed, on not a few of the doors in those streets, there are many brass plates with names on them. In those houses, more or less filled with doctors and their families, there are to be seen of a night very, very few open windows in the bedrooms. Seeing this, one cannot but think that if doctors, who are the great teachers of hygiene, prefer to shut out, especially of a night, fresh air from their bedrooms, one should not be surprised to find that the other classes of the community also, and to an equal extent, deny themselves the use of fresh air—one of the very few things necessary to life which, if certain politicians had their way, might possibly remain untaxed in this country. If you want to see other examples of how stuffy rooms are beloved of men, take a walk down St. James' Street and Pall Mall, and count the windows that are open in the clubs where are gathered together those who represent wisdom in politics, in literature, and in science. If you do this, do not forget to count the windows which are open in the Royal College of Physicians! It will not take you long to do all this counting, even if you extend your walk down Parliament Street, and there count the open windows in the Government buildings, where toil those who guide the affairs of this great Empire.

Again, what odd notions people have about "taking a chill," and

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"catching a cold"! I think that people who are wont to wax eloquent about these two popular bogies are, for the most part, those who regard an open window in a sitting room or a bedroom, or in a carriage on a railway, or elsewhere, as something of the nature of a social pest.

Yet again, it would be difficult to find a medical man, whose professional experience was even of the smallest, who did not know something of the depths of ignorance among mothers, and especially among young mothers, concerning how young infants and children should be fed. Of the value of milk as the only food suitable to young infants, very many mothers know little; but their faith in the worth of artificial foods for young infants and children is unbounded. It ought to be a matter of common knowledge that evil, and even fatal effects, are only too often directly due to putting into practice these oddities of popular belief.

To say that a disease is communicable, is to admit that it can be prevented. When people clearly grasp the meaning conveyed in that sentence, and act upon it under the guidance of the medical profession, they will then know that the prevalence in it of communicable disease is discreditable to a community. And we doctors must ever keep prominently before people the fact that communicable disease is the greatest cause of death save one, and that is ignorance, which is the chief cause of disease. Now there is but one way of getting rid of disease, and that is by preventing it. This, in no small measure, the medical profession has already done. For example, to mention only some of the modern achievements, cholera, typhus, small-pox, relapsing fever, malaria, typhoid, scarlet fever, and last, and most important, tuberculosis, are diseases more or less, but distinctly, under control. Give the medical profession such powers as are rightly given to the Civil, Naval, and Military authorities in time of need; give us freedom to use to the full, and in the best interests of our fellow men, the knowledge we even now have, and it is as certain as anything can be that, within the lifetime of the next generation, a reward in the shape of diseases and deaths prevented, will be reaped, that would make an epoch in the story of human progress.

But, Sir, we must do one thing first of all, and above all, before we can hope to reach this great end. We must educate the people in the laws of health. In no other way known to me, can we get the support of that public opinion which, in every free country, is the foundation of all true progress. And how are we to do this in the surest and quickest way? Well, Sir, I believe the surest and quickest way is to educate the children in our schools, and all students in our universities, in the laws of hygiene, or at least in some of those

laws. The need for widespread knowledge of matters touching the public health has been strongly felt, and often expressed both at home and abroad. Besides this, there is ample evidence to show that the medical profession in most, I think in all countries, is strongly in favour of the teaching of hygiene being made a compulsory part of the lessons taught in schools, and of the work done in universities.

But why discuss a subject about which we are in agreement! To this I reply, as in effect I have already said, that the chief object of this paper is to try to bring out the opinions of those who are here to-night, as to the best way to secure for school children and university students this particular kind of teaching. It was some years ago, in a paper I was invited to read at the Southampton Meeting of what is now the Royal Sanitary Institute, that I first dealt in public with this subject. At that meeting my proposals were unanimously adopted. So far as I know, there the matter ended; at all events I never heard that the Council of the Institute took any notice of that unanimous vote, though by it the Council was asked to take action.*

Next I wrote one or two papers, and so tried to urge these views upon any one who might care to take an active interest in the subject. No doubt the usual fate of their kind befell these papers, and I suppose nobody read them.

In Paris, in May, 1903, I brought these proposals under the consideration of what is known as the Inner Council of the International Society for the Prevention of Tuberculosis. Among the members of that Society are medical men from every country of importance in Europe and America; and in its Inner Council every important country on those continents is represented by medical men. It would, I think, be very difficult to get a better expression of cosmopolitan medical opinion, than is to be had from a representative gathering of the Inner Council of this International Society; and the Paris meeting of May, 1903, was a representative gathering. My colleagues on that Council, after having heard what I had to say, appointed a committee of their number to report on the matter, with a view to its being considered at the next congress of the members of the Society. The committee-men appointed for this purpose were Blumenthal, Calmette, Landouzy, Linroth, Lorentzen, and myself. The report of the Committee was favourable and unanimous, and I was directed to submit my proposals to the next Congress of the

* After this paper had been printed, Mr. Whitaker, Chairman of Council of the Royal Sanitary Institute, wrote to tell me, what I had not before heard, that his Council, after the Southampton meeting, sent the first and second of my proposals to Sir John Gorst, who was then Vice-President of the Council of Education, and proposals 4 and 5 to the Local Government Board.

Society. This took place in Copenhagen, in May, 1904 ; and perhaps, Sir, you will allow me to read these proposals now in the words in which I submitted them to the Copenhagen Conference, by which they were unanimously accepted :—

1 “That this Conference approves of the proposals relating to popular education in matters of public health made by the Committee appointed by the Inner Council at the meeting held in Paris on May 5th, 1903.

2. “That at least one person in each nation, represented in the Central International Bureau for the Prevention of Consumption, be authorized, either now or at the earliest possible opportunity, by the Central Bureau, to devise for his own country the measures he believes most likely to secure for those having jurisdiction over the affairs of education in schools and universities, assistance in putting into practice the principles indicated in the report adopted by the Committee

3. “That the person so authorized shall, as soon as possible, obtain the assistance of at least two of his fellow countrymen, who, from their public position, may be able to help him to carry out the work entrusted to him by the Central Bureau.

4. “That each of these National Committees shall report upon their work and its results to each ordinary meeting of the Inner Council, and to each Congress and Conference.”

The Copenhagen meeting unanimously accepted these proposals, and resolved, “That delegates be appointed by the Conference to promote in each State education in elementary hygiene in schools and universities, to be followed by an examination in that subject.”

Well, Sir, can these proposals be put into practice in our schools and universities ? In our universities this could, I think, be done by leaving the matter where it always must remain, in the hands of the authorities of each university. Additional lecturers, perhaps additional professors, would be required ; and if, as I submit ought to be the case, attendance upon a course of instruction in hygiene were made compulsory on every student of the university, the resulting fees would more than meet the necessary expenses. The success or failure of this movement, so far as the universities are concerned, will depend upon the amount and kind of public support given to the demand for instruction in hygiene. I incline to believe that the universities will not come forward to help in this matter until hygiene has been taught for some years in our schools, and the public opinion so formed will come to the help of the universities and encourage, and by grants of money enable them, to open to all their

undergraduates this new departure in university work. As a matter of course, the work of the undergraduate who studied hygiene as a part of his medical curriculum, would be kept quite distinct from the teaching in hygiene given to the student who did not intend to take a degree in medicine. The knowledge of the laws of hygiene required of the student of medicine would, naturally, be much wider and deeper than that required of other undergraduates.

I think it is in our schools that we should begin the popular teaching of hygiene. The universities would fall into line later on, when the demand for this kind of teaching became marked. Now as we are, I believe, all agreed that the school children should thus be taught, it should be well worth while to consider where the necessary teachers are to be found. My proposal is, that an effort should now be made to induce the medical profession to help on this movement by teaching hygiene in our schools. It is true that, even were they all willing to undertake it, doctors are too few to do all the needful teaching. I do not know how many thousands of schools there are in the United Kingdom. So far as I can ascertain, that information is known to no one. Certainly, counting our schools of all kinds and conditions, there are thousands of them. Of medical men now in practice in the United Kingdom there are, according to the Medical Directory for this year, 30,422. The inhabitants of the United Kingdom numbered in 1903, 42,372,556. A little sum in division shows that, were work equally distributed, each doctor would have less than 1400 persons from whom to draw his practice. It needs but a short experience of the struggle for work, and especially for remunerative work, in the profession of medicine, to convince doctors that practice is very far from being equally divided amongst them. Some have much more than their share of it. Indeed, of by no means few doctors, including a fair number of those who are no longer young, it is true to say that, after having seen all their patients, there remains to them on most days a substantial residue of spare time. Now, there can be no doubt that doctors are, of all men, best fitted by education and by their everyday work to give instruction in the laws of health. Many of them, and especially the younger men, are highly educated in sanitary science. Out of their enforced leisure not a few doctors would, very likely, willingly take time for the teaching that is wanted. Also, teachers could, I think, be had from among doctors who had retired from the active practice of their profession. There is a large number of students of medicine in their fourth or fifth year of study who, probably, would gladly undertake the work at certain seasons of the year. The offer of the post of teacher of hygiene in a school should, unless there is good reason to the contrary, be first made to

the medical adviser of the school, next to the Medical Officer of Health for the district, and failing both these, to a general practitioner or to a consulting physician. Failing all these, an effort should be made to secure the services of a senior student of medicine, recommended for the post by persons entitled to express opinion on such subjects.

Those who aspire to become school teachers by profession, should be required, before they begin to teach, to give satisfactory proof that they have a sufficient knowledge of hygiene for teaching purposes in schools.

Sir, when I accepted the invitation to come here to-night with which you honoured me, I made up my mind to ask the Society to give real help to this movement. Would it not be doing a service to many a man who is a Medical Officer of Health, if you could help him to add to the good he does in the community in which he works, by letting it be known that Medical Officers of Health, if only the offer be made to them, are ready and willing to carry out teaching of this kind in schools and in universities? Is it not possible for you to-night to entrust to a small committee of your number the consideration of this question, and if the committee approve of these proposals, perhaps they would suggest a plan by which to elicit the views of Medical Officers of Health as to their taking up this teaching. This would be a beginning; and that step once taken, I think our Boards of Education should be approached, and an assurance given to them, that it will not be the fault of the Medical Officers of Health if the medical profession, so far as they represent it, does not heartily lend itself to teaching the young how important to the individual, to the family, to the nation, is a working knowledge of the laws of health.

I have mentioned the Boards of Education. Sir, I have good reason to know that the English and Scottish Boards are fully alive to the importance of this subject. Without the help of the Departments of Education in England, Scotland, and Ireland, it would be useless to attempt to carry out these suggestions, or to try to bring members of the medical profession into active sympathy and touch with this new departure in education.

If you will give the question your favourable consideration, and, in the form you think best, convey your approval of these proposals to the Departments of Education, you will, I am sure, there find your suggestions and your views listened to with attention, and considered with care.

It is, I think, a statement of fact to say that in sanitary progress our country leads the way. If we wish to keep this proud place, we shall not neglect to note what other nations are doing to secure teaching in hygiene for school children.

So far as I know, the country which has done most in this direction is Prussia. There pupils in the National, Middle and Higher Schools, in the Gymnasia and in the Polytechnic Gymnasia, are now taught something of the laws of health. The younger children are taught a little about the structure of the body, and about how to eat, and play, and work, and rest. The older pupils are taught more in detail, and on broader lines. The oldest pupils have to give special attention to the subject of hygiene, as it affects the individual, the family, and the State.

In 1902, the Prussian Minister of State who looks after national education, ordered that in every school in Prussia the evils of alcoholism were to be brought before the pupils in an emphatic way. I confess that, when I read this announcement, I could not but admit that there are moments when one longs for a touch of a form of government, which should give a free hand to Ministers of State, provided they are of one's own way of thinking! In this country we need this teaching about the evils of alcoholism quite as much as they need it in Prussia.

In America an elaborate plan for teaching hygiene in schools is under consideration, and has already received substantial support. According to this plan the teaching is to begin in the very first year of school life, and is then to consist of oral instruction about play, sleep, eating, drinking, clothing, cleanliness, etc., etc. Each year of school life is to see this plan widened and deepened, until in their last year pupils are taught in some detail about the structure of the body, the evils of drink, the meaning of fermentation, the work of bacteria, disease and its prevention—and so forth.

In Norway, Sweden, and Denmark, very considerable attention is given in schools to the study of hygiene by, I understand, children of all ages.

In France some progress has been made, by way of getting the subject of hygiene noticed in certain schools; and I imagine the lines of instruction in hygiene will eventually be laid in France on the plan now being suggested for America.

Under No. 2 of the proposals to which I have already referred, and which were unanimously passed by the Copenhagen Conference last May, the Central Committee of the International Association for the Prevention of Tuberculosis has asked me to act under their authority in this country.

Well, Sir, I am here to-night to beg you to help in this matter. In my opinion, three factors are essential to success in this crusade against ignorance: (1) A favourable public opinion; (2) The support of the Departments of Education of the United Kingdom; (3) The help of the medical profession throughout the British Isles.

Sir, I believe that among the Medical Officers of Health of this country are those best able to teach hygiene in our schools and universities. Will you take action of the kind, and in the way you think best suited, to show the Departments of Education that you heartily support the movement for bringing a knowledge of hygiene within the reach of every boy and girl, and young man and young woman in this country? Do you believe you can overrate the worth of such an education? Put its worth no higher than its value in pounds, shillings and pence, and I say you cannot overrate it. Knowledge is power. Yes, and it is a mightier power to-day than it was when the youngest of us was a boy; and it is the power that is going to rule and guide mankind in the near future, as nothing else has yet ruled and guided our race.

DISCUSSION.

THE PRESIDENT, in declaring the discussion open, said that he was pleased to find that they were honoured with the presence of a number of distinguished visitors, whose views would be very welcome to the Society, and he trusted that they would take their part in the proceedings.

SIR HENRY CRAIK, K.C.B., LL.D., Secretary of the Board of Education for Scotland, said that he was very glad indeed to be present that evening, and that he had listened with very great interest to Dr. Heron's paper. He could only offer some suggestions that occurred to him as to the educational administration. For the present he would pass over the question as to whether it was possible to carry on this teaching both in the Universities and the elementary schools. Was it feasible to expect from the whole of their students in the Universities, knowledge, even of a not very advanced kind, which had to be acquired by them not for professional purposes but merely as students at the Universities? Would they not be asking that of the students who were about to enter other professions? Were they not building upon the present state of things when they had not got at the school that elementary knowledge which Dr. Heron had shown to be necessary for every well equipped citizen? If a boy had given to him a fairly good system of hygienic instruction, what more could he do at the University, unless he was going to be a medical man? The next question that occurred to him was that they spoke of teaching this subject in schools, and Dr. Heron rightly showed that the principle of the subject was recognised by the Boards of Education. He, the speaker, spoke for his own Board; they felt every day more the need for the intervention of medical science and the active aid of the medical profession in the schools. They had been all along of the opinion that their aid was wanted, but he had some doubts whether it was to be supplied by an attempt to make all their teachers into doctors. It was a matter of considerable difficulty. If they tried to give a man that little knowledge which is a dangerous thing, he might perhaps set up his opinion against the real expert and scientific man. What they wanted was the intervention and the aid of the doctor in the school, for supervising, for seeing that the proper rules of health were observed; for advising and reporting upon the subject of hygiene for which they were specially fitted. No doubt there was a difficulty. They wanted to give certain instruction to the younger scholars, but they should remember that instruction to

the younger scholars must be largely dogmatic. Obviously, they could not teach infants reasons for all the laws of nature. They must teach them what they have to do. That instruction could probably be given by the teachers, if they could give to the latter that elementary knowledge and sound common sense which was to be gained by attending a course of lectures on hygiene. Not attempting to make them experts, but giving them clear instruction as to the rules they have to observe in the care of their bodies and in daily life. For this he pointed out there were opportunities open of the most ample kind under the Code which he administered. They had established classes for the teachers throughout their schools. Classes for giving teachers instruction in subjects which they would not learn in the training colleges. Among the special subjects they found useful in their schools was physical instruction, in which subject a number of classes had been opened. He, personally, would exceedingly like to see more classes opened in hygiene, and suggested they should induce local authorities to assist. He advocated the system adopted by his Board, which paid three-fourths of the expenses of their classes, even including the travelling expenses of the teachers to go to those centres for instruction. This arrangement left a very small burden on the locality, and he personally was surprised that more classes had not been established. That system would, he thought, give them men fairly trained, so that they could impart to their scholars that common sense and clear enunciation of rules which were, in his opinion, the best thing for the scholars to learn. Later on they could go to the scientific rules upon which the basis rests. He thanked them sincerely for being allowed to express his views.

MISS RAVENHILL said that she spoke with much diffidence as a humble member of the teaching profession. She desired to express her great sympathy with the movement which she hoped would be initiated that evening, and considered that they had a lot to learn from the long experience of hygienic instruction which had been carried on in America. Three years ago, as the result of a Commission, she had been sent to the United States to study the methods of hygienic teaching in American schools. She had found that, mainly owing to the efforts of women, the one compulsory subject in American schools was some instruction in the laws of health. Reading, writing and arithmetic need not be taught, but instruction in the laws of health was compulsory. Further, the text books were required to include some chapters on the evils of alcoholism and narcotics, yet head teachers in conjunction with medical men had found it undesirable to accentuate that side of alcoholism. However, about two and a half years ago, in consequence of the action of a number of large temperance organisations, legal measures were taken to ensure the teaching of the evils of alcoholism and narcotics to children, but not under the age of twelve years. It had been found that dogmatic teaching fails to influence habits, unless the teaching is closely associated with life. That is to say, they should correlate their instruction with the right conduct of life. Otherwise the instruction merely goes in at one ear and out at the other, and has no direct influence on the life. It was felt that there had been time to form this influence after twelve years of age. She was of opinion that where teachers are carefully trained, hygiene can be most admirably correlated with every subject. She had had the great privilege of undertaking the training of teachers in practical hygiene for some years past. She had been given a free hand, and had submitted her method to all the authorities in the country. It consisted chiefly in submitting every form to observation. The child at an early age is

interested in the simple requirements of plant life. It then passes on to insects and to animals, quite naturally, up to the age of ten or eleven years. It is then led on to more advanced subjects. She felt that it was the normal, not the abnormal, the positive and not the negative, that must be impressed everywhere to form character. With regard to teachers, they all knew that medical men were most admirable experts in their subjects, but the course of medical training did not include teaching how to teach. They would, she thought, all admit that a member of the medical profession entering a school would not even be able to bring down his teaching to the level of the rest of the school programme, or to put it in words, or use methods suited to children. Such methods required simple, practical demonstration. Then she would remind them that the remuneration of teachers was not so excessive as to tempt medical men to do the work. As to physiological principles, not only was it wrong to bring them to the notice of children before they could understand, but such a proceeding only disgusted them. In regard to hygiene as a subject for University teaching, it had attained that position in America for some years past. As to the demand upon the student, she considered that in conjunction with his physical training he should continue such a further study of physiological principles of hygiene as were inappropriate in the lower grades of education. In conclusion, she would like to state that at the Chicago University, and also at the Columbian University, no student was admitted to the course of economics unless he could show that he had studied sanitation. She thanked them for the kind manner in which they had listened to her remarks, and sincerely hoped that some benefit would result from the evening's discussion.

DR. A. NEWSHOLME was strongly of opinion that dogmatic teaching does not influence the habits of the individual. It appeared to him that the main thing was that the teachers themselves should know the elements of the laws of health. Although he was of opinion that a very large proportion of the medical profession were incapable of teaching children, he thought that doctors should be entrusted with the teaching of hygiene in the training colleges, and he ventured to hope that Dr. Heron's paper would be followed by some practical steps in that direction. A large amount of hygiene had been taught in the past in connection with the Science and Art Department, but he did not think it had always been good. For many years he had been an assistant examiner in connection with that department, and he had had an opportunity of collecting some answers which occasionally afforded considerable amusement. They were no doubt aware that the course included ambulance work as well as hygiene proper. A student replying to a question as to the proper treatment for a scald, said that the best thing was to rub in vinegar for three minutes, or croton oil. A reply as to what should be done in a case of carbolic poisoning was that an emetic should be given, then artificial respiration performed. Another, in reply to a question as to a dog-bite, said, "If any person is handy and foolish enough to suck the bite, let it be done." "Burn it out with a cosmetic" was the answer of a third. Another candidate said that the best way to avoid impure water was to have it direct from the main sewer. A small boy's idea of a cistern was "a receptacle in the maid's bedroom, for slops." "Nitrogenous foods help to build up the waist of the body." "Coffee is adulterated by adding brick-dust, and sometimes by ground cayenne pepper, but chiefly by additional chicory." They had all read various descriptions of the method of boiling meat, but the following was a novelty: "Let the meat simmer until finished." Again, "Icebergs are not a desirable

source of water supply, as they may not be made of pure water." "Cess-pools are among the chief sources of water supply," and "Some water supplies come from artisan wells." These were illustrations of the kind of teaching that had been given. No doubt many young people acquired an elementary knowledge of hygiene, but what was wanted in schools was not so much the teaching of scientific terms as the hygiene of actual daily life. He did not recommend practical teaching on the principle of Mr. Squeers, of Dotheboys Hall—"Spell winder, and go and clean it." They might notice the opening of a window in the intervals of teaching. A great deal might be done in teaching children to be clean and the importance of fresh air, but the teaching must influence habits. Mere dogmatic teaching would not do unless it could be associated with practical illustrations. He was heartily in sympathy with Dr. Heron's views, but was not clear on the point of doctors teaching children. He would have the pleasure of proposing a resolution at a later stage of the meeting, which he hoped would tend to help forward the movement.

SIR PATRICK MANSON said that he was particularly interested in the subject, as he was at the present time urging upon the Colonial Office the desirability of giving some instruction in hygiene in the elementary schools throughout the colonies. It was obvious that disease was a most expensive item to the State, and that anything that would tend to prevent disease would be of enormous value to the community. He alluded to the terrible mortality resulting from easily preventable diseases. The difficulty the Government had to face was the ignorance of the natives. If the negro and the Indian could realize an intelligent idea of hygiene, the Government would have very little difficulty in getting important hygienic measures carried out. In his opinion the only way to convert the aged negro or aged Indian to the benefits of hygiene was by a miracle of some sort, and therefore he thought it was useless to attempt anything in their direction. But if the young negro was caught early in life, and educated in the principles of sanitary science, he, the speaker, thought that later on he would be more willing to accept any measure suggested to him for his benefit. Acting on that idea he had suggested that sanitary science should be a part of the teaching in all the schools throughout the Colonies. As a first step, he suggested that some elementary form of paper should be written and properly illustrated, a paper in which conclusions founded on facts were carefully and picturesquely laid out. Not, as one speaker had suggested, by a policy of dogmatic teaching. He considered that the teachers should themselves be primarily taught by Medical Officers of Health. In this way he thought that the Chinese, Negroes, and Indians, might be educated so that they would become willing to accept hygienic measures. He thought that in teaching hygiene they got quite as good an opportunity for the education of the mind as in the teaching of Latin or Greek, or any similar subject. By the observation of nature, by teaching the child to see and reason and remember, it might be educated quite as well as by teaching Cæsar's Commentaries, and the knowledge was infinitely more useful. As regards the tropics, there were so many object lessons that could be applied in the teaching of hygiene. For instance, let them show the child that a mosquito bite is as dangerous as a tiger's bite. He believed in teaching, not by dogmatism, because it always tended to provoke a contradiction. He considered that "Thou shalt not steal" rather stimulated a thief to do so.

DR. KERR, Medical Officer of the Education Department, London County Council, said that they had such a very artificial life that if they took the trouble to teach children reading, writing and arithmetic, they

ought also to teach them the methods and conditions under which they lived. There was no doubt whatever about the general ignorance of these hygienic conditions. Dr. Heron had already spoken of it in connection with doctors and physicians who ought to know much better. In school teachers he thought the knowledge was equally rare. At the last examination of physical work in the London School Board, the question was asked, "How much air is taken in at each breath?" The answers were given in square inches, in cubic inches, and in feet. They varied from '6 cubic inches up to 6,000 cubic feet. These figures, he thought, illustrated the ideas which the teachers had of what had been taught to them. Another serious matter was the question of the conditions existing amongst the public schools of England, which he characterized as a disgrace. There were dirty schools, and some of them were getting the highest grants, yet no attention was paid to their disgraceful condition. That very day they had been trying to make a beginning in the cleanliness of the people, and they had at length got the necessary machinery to work with. In future parents must either clean their children's heads, or they will have to go to the Police Court and be fined a sovereign. That morning he had received a letter from the head mistress of a school, describing the verminous condition of the place, and asking if it could be disinfected by washing. That was the condition of a school under the London County Council. There was no doubt that the way to remedy this was to teach the children. The question of teaching was a difficult matter. They must put medical men out of consideration as teachers. He agreed that the ultimate teaching must be derived from medical men, but the medical man as a medical man was not a good teacher. If they were to teach the children, they must have the teachers taught, and to ensure that they must so arrange matters that the teachers entered into the subject *con amore*. There was only one way in which teachers would make themselves fit for the inculcation of sanitary science, and that was by carrying it out in their everyday work. The school should be examined and reported upon as a sanitary school. The inspectors should know what a sanitary school was. At present they knew practically nothing about it. For the younger teachers they must have hygiene as part of their certificate. If necessary, other things should be displaced to make room for it. For instance, they might drop French. The head of a school should be a person of such a capacity that at the age of thirty she should have qualified for a first rank teacher, while all the others who had been toiling away for certificates should be put on one side. As to the teaching of children, they could not teach those under twelve unless they dogmatized. The younger the child the more dogmatic they must be. They must say something will happen if they do this or that. The child must be taught to live properly. It must pass its life, physically at least, in healthy surroundings. That very day they had had to stop a teacher from going up for an examination because she was too dirty. One could not help being impressed in some cases by their slatternly ways, their dirty rags of dresses, and he had often thought that it would be a good thing if a proper uniform were worn.

DR. HENRY ARMSTRONG commended the practice of the Society in inviting other opinions than those of the members. He considered it an eminently desirable practice and of great utility. He personally had listened with much pleasure to the excellent speeches that had been made. At the same time he must confess that if he had allowed all the views that had been expressed to weigh with him, he would have been in a delightful state of chaos. For instance, one speaker said that dogmatism

was a desirable thing, while another said it was not. Then, in the next instant they were told that it was not desirable to teach children reading, writing or arithmetic, but they must be taught hygiene. He had not yet heard any one suggest that the children with whom they were going to reason should be consulted in these matters. It seemed to him that they had a notion that education was going to govern the world. In his opinion some of these children at least were over-educated already. If they were to give them a little fresh air before they began to cram them it would be better. If they kept them from school till they were seven years of age it would be better still. A few minutes previously a speaker had quoted Mr. Squeers, and it had set him thinking of Sir Thomas More's *Utopia*, and he could not help saying that he did not think they would get hygiene until they got *Utopia*. He would also remind them that Dickens, who had been quoted by one of the speakers, had referred to a lady, a Mrs. Pardiggle he thought, who introduced her children in some such words as these: "Alfred, my youngest (five), has voluntarily enrolled himself in the Infant Bonds of Joy, and is pledged never, through life, to use tobacco in any form." The same author also remarks that such dissatisfied children had never been seen. He confessed that he failed to see the point of the whole of Dr. Newsholme's remarks, and he did not think that he had established anything favourable. He was, however, much amused at some of his stories, which had put him in mind of some examination papers he had had before him. One candidate stated that "tuberculosis was a disease occurring in an emancipated cow." He considered they were rather apt to lose sight of the meaning of education. The great evil of the day was to cram instead of teach. At the same time he did think that the remarks made about inspecting the heads of the children were very pregnant. The speaker referred to the outside of their heads. He would remind them that the teachers had to do with the inside, and in asking the teachers to look after both the inside and the outside, he thought they were expecting too much.

DR. HERBERT McLEOD said he thought they were rather uncertain as to the method of teaching. He was of opinion that the best people to teach the teachers were medical men, and in this way the knowledge should be transferred to the children. He considered it would be a mistake for medical men to teach children. He had had some experience in teaching medical men. There were many lecturers appointed who were quite incapable of lecturing. A man might be a Senior Wrangler, but perfectly impossible as a teacher of mathematics. Therefore, if a medical man was going to teach, he must be able to transfer his information to his audience. To transfer it to young people they must peptonize their food. They must arouse the interest of their hearers. Dogmatism was one thing, and the faculty of assimilating was another. If they interested their audience they would find that they would assimilate this matter. In any case, if they were going to do so, they must choose their staff. Referring to the late London School Board, he said they were very much averse to the teaching of hygiene. The question first came up when they were discussing "first aid" at a meeting. He brought forward hygiene, and was told by the Chairman that first aid was the first thing and that hygiene was the last thing that they had thought of. He, the speaker, ventured the opinion that the first should be last and the last first. Later on hygiene was taken up and had been continued. In conclusion, he repeated that they should first pick their staff, and then he was convinced that excellent results would follow, otherwise the result would be unsatisfactory.

DR. E. WALFORD drew attention to the fact that there were two local authorities in the United Kingdom that had already taken the matter in hand. He referred to the University of Wales, or rather the College of South Wales and Monmouthshire, which had already established a course of hygiene for the purposes primarily of school teachers. Both the Glamorgan County Council and the Cardiff Corporation had assisted by contributions towards the expenses of the course. The course had been started with a fair amount of success. The first lecture was attended by about a hundred students, and the course would continue through the whole of the University terms, and consist of thirty-six lectures. The idea was that a certificate in hygiene should be given at the end of the course, and the further expenses of those teachers who attend will be paid by the local authorities, provided they attain the certificate. It was thought better not to make the teachers experts in hygiene, but to interest them in the subject so that they should understand the object of the many sanitary appliances which they had at hand. The fee charged was £1 ls.

DR. H. MEREDITH RICHARDS said that he personally would find it very difficult to teach a child attending the elementary schools. He thought that the people they should first approach were the parliamentary representatives of the Board of Education, then there would be some hope of obtaining a curriculum for the training colleges. Dr. Walford, of Cardiff, showed that there was a solution of the difficulty to be had. He was afraid that if the Harley Street doctors could not apply hygiene to opening their own windows they would not teach children to do so. Unless they could make a child feel the importance of hygiene it would have no influence on its conduct. It seemed to him that if they talked of things like the black hole of Calcutta, of things children could understand, they might make them realize the importance of things in their own life.

PROFESSOR KENWOOD said he desired to call attention to a matter that had been referred to by Dr. Heron in his paper. Dr. Heron referred to a meeting at Southampton of the Royal Sanitary Institute at which he read a paper. He wished to say that the Council of the Institute had taken action on the unanimous adoption of Dr. Heron's proposals at that meeting. The resolution was agreed to by the Council and sent to the Board of Education. Unfortunately that action did not appear to have been communicated to Dr. Heron. It seemed to him, the speaker, that the matter that called for criticism, was the suggestion that medical men should be appointed to teach scholars. The teaching must be done either by the school teachers or by medical men who have some knowledge of hygiene. The school teacher is not an expert in hygiene, and he did not think that the teacher was required to be one. The necessary matter could be put on two pages of foolscap. On the other hand, the medical man was not a teacher, and of the two he considered the latter to be by far the greater drawback. It was easier to teach the teacher hygiene than the doctor to teach. In connection with the evening continuation classes he had recently looked in at two classes unobserved, and he had been much struck by the inadequacy of the lectures in each case. The fact that the lecturers themselves had not the training nor the experience to teach was the obvious reason of the failure.

DR. MUSGRAVE CRAVEN said that it was the intention of the Society that the masses shall learn hygiene. They did not want to teach the children, but to educate those whose duty it was to teach the children. Therefore they should put before the Board of Education the fact that it was the desire of the Society that hygiene shall be a compulsory subject for teachers.

DR. FRANCIS J. ALLAN said that what was wanted was not that they should teach hygiene by dogmatism, but by example. As an instance of his meaning he mentioned that some years ago Mr. Alexander, the Chief Inspector in Shoreditch, had tried to get proper closets with water appliances put in the schools there. At that time they were nearly all trough closets, and the inspector's idea was that if the children were taught to use the closets properly at school, they would do so properly at home instead of breaking them. He, the speaker, did not agree with Dr. Armstrong's criticism of Dr. Newsholme's stories. He considered that they pointed to the fact that the children had been taught incorrectly. He thought that perhaps Dr. Heron was a little hard on the West-end practitioners. He, Dr. Allan, was not there to defend them, but from what he had seen in the Marylebone papers they appeared to have some excuse for keeping their windows shut. He believed they would be only too glad to have their windows open, if it were not for the noise and dust.

COLONEL A. M. DAVIES said that the War Office had realized the importance of teaching hygiene in the army. Although it was felt that it would be impossible to teach all the officers at home and abroad, they had to make a beginning with the young officer, the cadet at Woolwich and Sandhurst, where several courses of lectures had been given. They had been well received, and a great deal of interest had been taken in them. The men in the ranks were also being taught in regard to the cleanliness of the body, the use of the tooth brush, and so on. They were also beginning to teach the children. No order had actually been issued, but he, the speaker, knew that it would be done as soon as the matter could be managed. There would be short lectures on hygiene for the army teachers. He thought that the teaching should be by example and explaining the reasons for things. The most important point was that the teachers should have a love for the subject, and be able to excite the interest of those they were teaching. In this case some of the information would be certain to remain in the minds of their hearers.

DR. MEREDITH advocated a system of district visiting in which the services of women and young girls who had been taught hygiene were enlisted. They went to the houses in their district, to tell the occupants matters connected with healthy living, and distributed leaflets dealing with various things. The system had been worked in a very practical way, and had been very successful. The leaflets were of a very practical description and interesting. He thought there was plenty of scope for hygienic work. Even at Oxford, in Christ Church for instance, he had found the ventilation atrocious, and it was equally as bad at some of the larger colleges. He desired also to support the remarks of Sir Patrick Manson, having himself lived many years in the tropics. He was glad to hear that there was a movement on foot to exterminate the mosquito.

The PRESIDENT (DR. J. F. J. SYKES) said that the point he wished to lay emphasis upon was one referred to by most of the speakers, the kind of teaching that should be given. He called their attention to the series of articles on "Infantile Mortality" that had recently appeared in the *Times*. It had been pointed out in that journal that Infantile Mortality was as a matter of fact the result of the neglect of teaching hygiene. It was shown that owing to education, our girls no longer remained at home to tend the younger children, as was the custom of their forebears. They were packed off to school where their domestic economy knowledge had

been supplanted by class knowledge and the system was very largely the cause of neglect of hygiene in the present generation, to which neglect was undoubtedly due the high rate of infantile mortality. He considered that what was required was to replace what had been lost. He had great pleasure in calling upon Dr. Heron to reply.

DR. HERON, in reply, said that if at so late an hour he were to attempt to deal with every criticism of his paper, he would have to occupy their attention for a very unreasonably long time. He wished, however, to reply to Professor Kenwood, who had drawn attention to an apparent inaccuracy in that portion of his paper which referred to certain resolutions carried some years ago, at the Southampton meeting of what is now the Royal Sanitary Institute. He (the speaker) had said that he never heard that the Council of the Institute took any notice of that unanimous vote. Only that afternoon had he received a letter from Mr. Whitaker, who is Chairman of the Council of the Royal Sanitary Institute, drawing attention to the fact that certain action had been taken. He, Dr. Heron, had made the statement in his paper without having any knowledge of the action taken by the Sanitary Institute. Continuing, he remarked that in the first place much had been said that evening about methods of teaching. He himself had refrained from discussing any particular method of teaching. His object was a very simple one. He did not much care how it was accomplished, whether they decided to teach teachers or children, or teachers and children. What he wanted was the Incorporated Society of Medical Officers of Health to bring their section of the medical profession into sympathetic touch with the educational authorities of this country, and so initiate the intimate personal association of medical men with the teaching of hygiene in schools and universities, which he came there to advocate. He was sure that the Medical Officers of Health were the proper people to approach the Government, to offer to do what they could to help on the cause of school education in hygiene, and to help to get the matter put into shape and carried out. No one supposed doctors to be perfect teachers; but he was convinced that there were, so far as the teaching of hygiene was concerned, more incapable teachers amongst professional teachers than there were amongst professional men. He knew no persons more capable of teaching hygiene than doctors. He deemed it the duty of the medical profession to do what it could to help on this matter. No, doubt they would find some unsuitable teachers in the medical profession; but they could eliminate the unfit as opportunity offered. There had been a good deal said during the discussion about dogmatic teaching. For his own part he thought there was nothing worse in teaching the young than what was called a lecture. He said they had all suffered from the lecture. Take, for instance, the lecture on anatomy. What is the use of it to the student? The student either learnt anatomy in the dissecting room or not at all. Then, again, what was the use of a lecture on *materia medica*? Had any one ever got any good from it? He considered they should bring children face to face with facts in pictures, under the microscope, in the magic lantern, or in test tubes. A demonstration was what they wanted, not a lecture. Indeed, the teacher should get as far from a lecture as possible, but as near to the teaching of the laboratory as he could. That, in his opinion, was how children of all growths could best be taught. The notion of getting doctors to teach hygiene was suggested to him about twenty years ago, when he was working at bacteriology in a house in which were a few children, ranging

in age from eight to fifteen years. They became interested in watching him at work. He showed them that diseases grew like plants; that each disease had its own seed; that it could not grow from anything else. He was surprised to find how quickly they realised all he told them, how interested in it they became, and, as they grew older, what a marked effect it had on their apprehension of the meaning of infection and of the prevention of disease.

As to school classes, if they were to teach effectually, they must have small classes, numbering about six or eight, so that each individual might be personally taught by the teacher, and all difficulties explained.

If he (Dr. Heron) understood Sir Henry Craik aright, Sir Henry had said there was no need to teach elementary hygiene to University students. Sir Henry said, in effect, that the subject could be sufficiently taught during school life. Dr. Heron was sure that if one thought about this view of the matter, he would arrive at the conclusion that the teaching of elementary hygiene would, if well done, have to be taught in universities as in schools. For instance, could school children be taught, with advantage, the real meaning and consequences of alcoholism? Dr. Heron thought few subjects were more worthy of being openly discussed before young men and women than that of drunkenness and its consequences; and this could nowhere be better done than in a University. Again, the young men of every country should have pointed out to them the evils that inevitably follow upon the degradation that is inseparable from a falling birth-rate in a healthy and prosperous community. This could best be done while teaching elementary hygiene in a University. Many and most important questions relating to the public health could not be touched in schools, which could in universities be taught with great advantage to the students. Miss Ravenhill, in an admirable speech, to which he had listened with very great interest, had reminded him that hygiene was a compulsory subject in American schools. He was under the impression that he had said that a much larger scheme was being considered in America.

In conclusion, he thanked them sincerely for the kind manner in which they had listened to and discussed his address that evening. His object had NOT been to discuss systems of teaching. He did not care what methods of teaching were adopted, provided the result was achieved. He did, however, want the Medical Officers of Health of this country to help the matter along by bringing pressure to bear on the authorities, and he felt that the medical profession was the only body which forthwith could initiate the teaching of hygiene in this country with greatest advantage to all concerned.

DR. ARTHUR NEWSHOLME moved that the Council of the Society be asked to form a committee of members of the Society, together with Sir Patrick Manson, Miss Ravenhill, Dr. Heron and Dr. Kerr, to consider how best the teaching of hygiene in schools, and particularly the teaching of hygiene to teachers, can be promoted.

DR. ARNOLD EVANS seconded the motion.

DR. JOSEPH GROVES, in supporting the motion, said that this Society was the first to make strong representations to the Board of Education on the matter. The Board were in favour of it, but did not know how to go to work about it, as they had no books and no one to teach. He thought the appointment of such a Committee was an admirable way to deal with the matter.

The President having put the motion to the meeting, it was carried unanimously.

DR. SEATON proposed a vote of thanks to Dr. Heron for the exceedingly interesting and important contribution to the transactions of the Society. At the present day, he said, nothing could be more interesting to them than school hygiene. It was not the first time that they had been indebted to Dr. Heron, for nearly twenty years ago he had given them a paper on cholera. He, the speaker, thought they should express their great indebtedness to Dr. Heron for having introduced the subject of hygiene that evening, and for the able manner in which he had dealt with it.

DR. H. ARMSTRONG having seconded the motion, it was carried by acclamation.

PROFESSOR ROBERT KOCH is to be the recipient of the Nobel Prize in medicine this year.

ENTERIC FEVER AND ICE CREAMS.—Dr. Barras, Medical Officer of Health for Govan, reports that during September a sudden and sharp outbreak of enteric fever sprung up, the majority of the cases being directly and conclusively traced to the consumption of ice cream, and no fewer than twenty cases were due to this source, including the maker and vendor of the article who for two weeks was attending his business with the disease upon him.

SMALLPOX AND TRAMPS.—Smallpox was brought into the county of Derby during 1903 some forty times by tramps. The term "tramp" in this connection includes a fair proportion of decent labourers, such as navvies, a larger proportion of inferior labourers, who either have not sufficient strength of mind or are physically too weak to keep work when they get it, and a still larger proportion, quite half of the whole, who are habitual "won't works" wandering from workhouse to workhouse. That legislation is necessary to deal with the tramp problem is now admitted, and the Departmental Committee appointed by the Local Government Board is the first step towards solving this problem. All three classes of tramps must be legislated for. Labour bureaux worked by the police of the counties and county boroughs should be provided, so that a labourer need not walk from one end of England to the other on the chance of getting work. A man who has been in constant employment for a certain length of time, and who has to travel to get work, should be able to obtain a railway pass, or at any rate a decent bed at a police station on producing a certificate from the police of the district in which he was in regular employment. In this class, tramping about the country at the present time are a large number of army reserves. To keep a steady man of this class, who is travelling in search of work, two nights in the casual wards, and impose upon him the task of breaking stone in a dusty atmosphere, is unscientific and futile, and much greater discretionary power should be put in the hands of the workhouse masters. Any scheme should deal with all classes of tramps: (1) Labourers travelling after work; (2) Inefficient and weaklings; (3) Habitual "won't works"; (4) Women and children. It will not be sufficient to deal merely with the workhouse casuals; the common lodging-houses harbour an even larger number of undesirables. Something ought to be done to improve the condition of these places, either by some social movement or by the authorities themselves erecting lodging houses under the Housing of the Working Classes Act.—Sidney Barwise, *Ann. Rept.*