POST-GRADUATE TRAINING IN EYE-WORK FOR THE SCHOOL MEDICAL OFFICER.

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THIS article has been headed with the word "Post-Graduate," and for a very good reason. The work of the medical undergraduate is now so extensive, and the subjects with which he has to familiarise himself so elaborate, that he has barely time in which to get a working knowledge of the nomenclature associated with these several subjects, much less has he time to secure a concrete attachment to the real matter that underlies all this terminology. It is therefore inevitable that those subjects which can only be learned with a maximum of practical work will suffer some sort of neglect at the hands of the overworked undergraduate. This is exactly what happens to the study of eye-work. It is essentially a practical subject, very little can be learned of it from the mere cramming of text-books, the very best and most lucid explanation of any ocular phenomenon or disease symptom can scarcely be grasped without the demonstration of the condition upon the living subject, and the very methods of examination upon which the determination of these conditions rely can only be mastered by long and assiduous practice. If the undergraduate has learned the significance of inflamed eyes coming on at the third day of an infant's life, he has gained something; if he has learned to differentiate between the symptoms of conjunctivitis, iritis, and glaucoma, he has learned much more; and he is safe to be granted a diploma to practise on his fellow-citizens. But for all this invaluable knowledge he cannot hope to tackle the problem of the eyes of school children, the appreciation of that is essentially a matter for post-graduate study.

Eye-work amongst school children may be divided into three main groups. 1. The recognition of external diseases; 2. The recognition of functional disorders; 3. A knowledge of the hygiene of the eye. The importance of the three conditions vary according to the status of the population. In the East the first of these is by far the more important of the groups. In Egypt the greater part of the time of the school medical officer is absorbed in combatting the spread of the trachoma. In this country the better sanitary condition of

the people make this particular disease very rare, and even the milder types of external diseases are less common than are the functional disorders arising out of the constant use in near work of eyes that are congenitally handicapped by anatomical conditions. The time that the school doctor of Egypt devotes to the cure of trachoma is spent by the British school doctor in testing the vision of the children and arranging for the correction of suspected errors of refraction. Again, with the recognition of the ill-effects of much of the work pressed upon the children, especially upon those whose eyes work at a disadvantage owing to these errors of refraction, there has been a change in the stress of the school doctor's work. He is becoming more a hygienist. He is keen on the work of the child, and the conditions under which it is done; and this opens up a line of advance of the greatest interest. For this new line follows out such matters as architecture, illumination, books, paper, printing, desks, posture at work, duration of work, methods of handwriting, styles of drawing, the teaching of sewing—in fact, the list grows so long that one may fairly say that it covers the whole curriculum of the school child.

Where is the aspiring post-graduate to learn all these things? For a school medical officer a diploma in sanitary science is recommended with good reason, but there is no scheme of instruction for such a diploma that even touches such subjects as these. At the present it must be confessed that there is no one and complete scheme of study formulated for this work. The man who is intent on mastering them must be eclectic, he must attach himself to some medical school or special hospital where he can see cases of eye disease, and have the opportunity for carrying on investigation in the refractive errors of the eye. The practical application of this work to the children he will have to make for himself, and if he has the good fortune to be attached to some elementary school during this period of study he will have no difficulty in correcting the impressions he gains at the hospital of the incidence of eye disease by a constant reference to the conditions actually existing amongst the children. I would lay particular stress upon this correlation of the work of hospital and school. Too many of our men when they start work are so obsessed with the state of the patients they see in hospital that they are inclined to consider them a fair sample of the population. Happily this is not so. The

mass of the children are very fair specimens of humanity, despite the high percentage of "defects" that are reported in blue books and elsewhere.

The mastery of the art of retinoscopy, without which it is impossible to do any systematic work amongst children, must lie for the most part within the hands of the student himself. Retinoscopy is at the same time one of the most difficult of arts and yet most easy. It is difficult because no man can see the reflex upon which this practice rests at the same time as his teacher describes it to him. Each must take his turn and one must rely upon the correct description of the other, or else look and learn for himself. The latter is by far the better practice. The man who has made his observation for himself has done something original, and he has made a secure possession. A great deal of the difficulty experienced by beginners is due to the bad practice of the text-books, of which there are a host, in slavishly following the original description of retinoscopy. Cuignet, who discovered the art, was impressed by the black shadow across the light reflex, he saw this in gross cases of error, and in such states it is a prominent feature. But the vast majority of the cases to be examined are but little removed from the normal, and in these the "shadow" is hard to seek, and elusive to the last degree. If the beginner will boldly look at the light emerging from the eye, and consider it and its movements just as he would the movements of a signal lantern waved by a railway man, he would have no difficulty in mastering the principles of the art. The rest lies in assiduous practice. The serious man will be content with one or two cases for a morning's work. He will test the eye subjectively, then retinoscopy without a midriatic, again with homatropine and cocaine, and then on another session under atropine, and repeat the subjective examination. He will note each result; and lastly sit down to study them and see what differences he gets under the several states. Such study will give him a security that no hurried survey can.

The study of the hygiene of the eye. This is truly a matter for the exhibition of glorified commonsense. I strongly recommend the student to start this work by visiting a number of schools, both old and new. Let him take an ancient public school, some of the earliest board schools, and then some of the recent council schools. Let him write a

critical review on the plan of the buildings, the class rooms, the set or position of the windows, their aspect, their relation to the floor space. Next let him do the same for artificial illumination, making his examination at dark by measuring the light with a photometer. Desks, school material, and methods of work should all come under a similar review. He should write out his observations, giving plans or drawings and where possible collecting samples of work, and the whole should be set out in such a manner that an intelligent layman could understand all. If he can get such an one to criticise his observations, so much the better. When he has done this "pioneering" work for a few weeks he should begin to read. There is no text-book to turn to, he must search the files of blue books, London County Council orange books, "Public Health," "School Hygiene," the reports of the Society of Illuminating Engineers, of the British Association Committees. To the novice such discursive reading is impossible, but to one who has made a practical essay into the work, and exercised his primitive and unbiased wits on the matter, such reading will be invaluable. There is no branch of work which enhances the value and dignity of the school medical officer's position than does this. From a mere hack he develops into a judge of the court of final appeal in all matters relating to the school work of the child.

PRINCIPLES AND METHODS OF INDUSTRIAL CONTROL.

AN industry is responsible for the conditions existing in its establishments.

It is the duty of an industry to take care of and to improve the sanitary conditions of its factories and workshops.

Good sanitary conditions of industrial establishments are a debt which the manufacturers in an industry owe to the public and to the workers.

Efficient and permanent improvement of industrial conditions can be brought about only by industrial self control, by a co-operation of manufacturers, workers and the consumer.

Humane and decent industrial conditions mean good sanitary conditions of the shops, living wages and hours of labour that do not cause over-fatigue.

No detection of sanitary crimes, but prevention.

No threats, fines or penalties, but friendly counsel, agitation and education. *Bulletin of the Joint Board of Sanitary Control, New York.*