among you here has left out whole slabs of a textbook with a fervent "hope that we shan't get that in the paper." Faced with this situation, the honest, or I should perhaps say *wise*, student—for here the two adjectives have the same meaning—resolves that, come what may, he will understand what he sees, what he hears, and what he reads before he proceeds to the next stage in his education. This costs him a great deal and entails upon him a rigorous process of self-examination, a determination to know himself, which constitutes his wisdom. There are things which he must know and must never forget. He will go over them until they are a very part of himself, despite the drudgery of the process. There are points which are not clear to him although they appear to be perfectly clear to his fellows. He must not be ashamed to ask, and, if necessary, to ask in public, very simple questions. In this way he lays a solid foundation for future knowledge until he finds perhaps, when erecting some higher structure upon this foundation, that he has not built so well as he thought. Later reading and later clinical experience prove to him that he has not grasped part of his back work; that he has misread it; or that he has accepted it without understanding it. Back he must go to the foundations, and cement them or shore them up, regardless of the labour and expense entailed. Here we have drudgery, accompanied possibly with a dispiriting sense of failure, but the student who is honest—that is, the student who is wise—faces the situation, and is repaid by finding that, when he returns to the higher work on which he was engaged, he can execute his task with an ease and a pleasure unknown to him before he had the support of the feeling of security. The next stage follows, and honours come; such honours as those which we have this afternoon seen distributed, and the significance of which, viewed in this light, becomes quite clear. Prizes are the sign that the student is learning to know himself; that he has subdued the natural tendency to go in the direction of the least resistance, and has determined to attack and master the allotted task. Prizes do not prove that he has succeeded in life, but they indicate that he has properly prepared himself to do so. In the long race many prize winners are passed by those who did not start so brilliantly, but let us not forget that it was the example of the prize winners, their methods, and their conception of mental training which aroused in others a proper spirit of emulation. To discuss whether the man who began as being honest, and who early acquired honour, will, in the end, get on, would be to discuss the whole race of life, and we are here only considering the early stages. But it is my belief, and I hope to carry you with me, that the honesty of purpose, the self-denial, in short the wisdom, of the prize winner, in most cases stays by him during life. Gentlemen, in our education, that education which ends only with the grave, let us echo the desire of David that our days may be so numbered that we shall incline our hearts unto Wisdom.

An Address

ON

WOMAN'S SPHERE IN MEDICINE.

DELIVERED AT THE LONDON SCHOOL OF MEDICINE
FOR WOMEN.

BY

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AFTER some preliminary remarks Mr. Roughton said: The distinguishing feature of this school is that it is for women students and for women only. It is therefore appropriate that I should say something about medicine as a profession for women, and about the suitability of women for medical work. Of late one has heard so much about the equality of the sexes that one can hardly help thinking that in the minds of many people sex distinction is chiefly a matter of costume and political disability. For such, medicine is just one of the numerous occupations which may be taken up equally well by male or female.

On the other hand, there are still some old-fashioned people who believe that woman's place is in the home, and that no occupations outside the domestic sphere are suitable for her. They are apt to forget that owing to the preponderance of the female sex there are not enough husbands to go round; moreover, there is no reason why a woman should get married if she prefers to remain single and earn her own living. Sixty years ago it may have been necessary for Bob Sawyer to engage in pugilism, cock-fighting, wrenching off door-knockers, and such like pastimes in order to make himself sufficiently brutal to be able to perform a major operation whilst the patient was writhing and shrieking in agony. Such a profession was scarcely suitable for the Early Victorian young woman, whose chief occupation seems to have been keeping her hands white and making her mouth a pretty shape by diligently repeating the words "pears," "prunes," and "prisms." The invention of anaesthetics and antiseptics has made surgery a gentle art which can be practised by the most tender-hearted man or woman.

Over and above the fact that medicine is a suitable profession for woman, there is a very cogent reason why there should be a female section of the profession. I suppose that everybody (including even the opponents of medical women) would agree that it is desirable that women should be attended by persons of their own sex, if only one could be sure that the female practitioner was as efficient and reliable as the male. The need for medical women in countries where men are not allowed to attend the female sex is, of course, obvious. Custom accounts for a good deal, and I feel sure that the present custom of women being attended by men has only grown up through sheer necessity, and that when in the course of time there is a plentiful supply of medical women, people will wonder how their grandmothers could have submitted to the services of the male obstetrician and gynaecologist.

Although there are many ailments where the sex question hardly comes in, I feel strongly that the more the sexes are separated in medical matters the better. For my own part, I should be glad to see a complete division of male from female in hospital work. The example set by the New Hospital for Women is an excellent one. I should like to see the male counterpart—namely, a hospital for men, with male officers and nurses; but I very much doubt whether a sufficient number of men would ever be found with the necessary qualities for making good nurses; but that question, though an interesting one, is outside the scope of this address.

I also think that mixed classes of medical students are undesirable, and I congratulate you on having joined a school where there are women students only. I would go even further, and would say that it is desirable that your teachers should all be women; at present such perfection is not possible, but it will come some day.

Granting, then, that medicine is a suitable profession for women, the next consideration is the suitability of women for the profession. Many women will, no doubt, be inclined to dismiss the question by saying confidently, "Of course they are suitable, just the same as men." I crave your indulgence for a few minutes in order to discuss this question, for, although I shall arrive at very nearly the same conclusion, I may be able to lay before you some propositions attention to which may tend to increase your suitability for the profession you are aspiring to enter. First, let me remind you that there are radical differences between the sexes, and that these differences are not comprised by what are usually known as the primary sexual characters; there are other differences between male and female, which are called secondary sexual characters. Some of these are self-evident and therefore well known; for instance, the greater muscular development of the male, the deeper voice, the beard, and so on. These obvious characters have little or no bearing on the practice of medicine.

There are other more subtle differences between the sexes, which are sometimes known as tertiary sexual characters, and which, I think, are more important in deciding the suitability of the sex for the work in question. These characters are especially worthy of attention, because they are not so radical and unalterable as the more obvious secondary characters; they are, to a large extent, capable of being influenced by education and by discipline. In order to understand them, it is

necessary to remember that in primitive races the different parts taken in the reproduction of children by the two sexes has made the occupations of man and of woman essentially different. Of necessity the woman has been obliged to stay at home and nurse the babes, whilst the man has had to go out and procure food by hunting and fishing; having got the food he often has to fight with his neighbours to protect his belongings. Male and female have therefore been thrown amongst different surroundings, and, in obedience to the law that organisms must adapt themselves to their environment, have developed different qualities. Thus the male has developed muscular strength, courage, and cunning in the chase; whilst the female who would rear her children successfully could only do so by unselfishness, solicitude, and sympathy. As an Australian Kurnai is reported to have said, "A man hunts, spears fish, fights, and sits about; the rest is woman's work." One of the most obvious results of this division of labour is the woman's sense of dependence upon the man.

She has so long looked to the man as protector, breadwinner, almost as owner, as the one to initiate, to lead, to control, that her capacities have been dwarfed in these directions, her powers of self-reliance, origination, invention, have found no outlet and have in consequence remained quiescent, or at least have but feebly developed, her mental growth being rather in the direction of such qualities as are comprised under what has, in consequence, come to be called womanly sweetness, or, more briefly, womanliness.¹

Evidently these qualities are more suitable for a nurse than for a doctor; if all women were alike in this sense of dependence upon men it is fairly certain that there would be no women doctors. But the history of the woman's medical movement shows clearly that there are many women in whom the qualities of independence and self-reliance are very fully developed. The mere fact of a young woman desiring to enter the medical profession shows that she possesses these qualities in some degree; but it will be well for you to remember all through your career that there is a tendency to revert to the primordial type; therefore, take every opportunity of increasing your self-reliance by doing things for yourselves as much as possible whilst you still have your teachers to fall back upon in case of failure. Very lucky indeed are those young women who will have an opportunity of strengthening themselves in this respect by holding a resident post at the Royal Free Hospital.

Women appear to adapt themselves mentally to varying surroundings more readily than men. This peculiarity has been attributed to the necessity she has been under of adapting herself to man, always her superior in strength, and always, therefore, possessing the authority which strength confers. This mental adaptability shows itself chiefly in the greater tactfulness which the woman has no doubt acquired through the moulding influence of the stronger sex, for, finding herself opposed to brute force, and being no match for her husband in this respect, she has had to depend on other resources, defensive and offensive.

Closely allied to her tactfulness is another quality which is not so commendable. It is her capacity for dissembling. There are many reasons, which I need not enter into, which account for the undoubted fact that women are more clever at deception than men. There can be no doubt that in the practice of medicine it is sometimes necessary to deceive a patient in her own interest, but as a general rule I strongly advise you to say what you mean and mean what you say. Although this sounds quite simple and easy I can assure you that it is really very difficult and requires a great deal of practice. You will find this out when, as dressers or clerks, you write records of the cases in the wards. You will find it difficult enough to record your own observations accurately, and when you come to writing down the patient's account of his symptoms and history, and comparing it with the answers he gives to the physician or surgeon at his afternoon visit you will realize the truth of what I say.

Another result of the primordial differences in the male and female environments is that the woman's mind retains more of its child-like characters than does that of the man. All through the animal kingdom the adult female is more like the young of either sex than the adult male, and this is so in the human species. Up to the time of puberty the development of the two sexes runs fairly

parallel, although from the earliest age there is a foreshadowing of essentially masculine and feminine traits. At puberty the unlikeness of the two sexes suddenly increases, the male departing much more than the female from the previous childlike characters. Thus it comes to pass that some women are inclined to be weak-willed, acting upon the impulse of the moment without due reflection on ulterior consequences; some, again, are highly emotional, passing rapidly from one phase of feeling to another—from tears to laughter, from frowns to smiles; others are wanting in control, wayward and petulant. These childish women are no use at all in the medical profession, but there are others who possess the childlike qualities of sincerity, modesty, simplicity, honesty, and trustfulness; such possessions should be carefully preserved, lest in the development of the higher faculties they be crowded out.

Coming now to the more purely intellectual powers, there are some interesting points to be noted. There is no doubt that in European races the absolute weight of the brain in men is considerably greater than in women, but when we allow for the greater size of the male and compare the proportion of brain weight to body weight, we find that women's brains are at least as large as men's, and, indeed, often a trifle larger. It is therefore not surprising that our students do just as well as, if not a little better than, the men students presenting themselves for the London University examinations. Allowance must, however, be made for the marked precocity of the female brain in childhood and adolescence. Girls between the ages of 4 and 7 have already gained 92 per cent. of their final brain weight, whilst boys of the same age have only reached 83 per cent. The girl's brain grows but little after the age of 7, and has practically ceased to grow about the age of 20, whereas the man's brain does not reach the maximum size until the age of 30. It is not surprising, therefore, that girls are often intellectually ahead of boys of the same age. It may be fairly assumed that girls of 16 or 17 have arrived at the same stage of mental evolution as young men of 21 and 22.

It is probable that there is very little difference between the intellectual capacity of the average man and the average woman. The boasted superiority of men only shows itself when we pass into the region of genius. Genius of the highest order is almost limited to the male sex, and this is in harmony with the well-known law—namely, that natural variations are more common and pronounced in the male. A genius may be regarded as an extreme natural variation, in a sense an abnormality. In harmony with this view is the fact that the opposite mental type—the idiot—is much more frequently met with amongst boys than girls.

In the matter of rapidity of perception the advantage is distinctly with the female sex; thus it is by no means uncommon for a woman to be able to take in another woman's costume at a single glance, and to do it so thoroughly that she is able to give a minute description of it to a friend. Such powers brought to bear upon the clinical aspect of a difficult case cannot fail to be of the greatest use.

In selecting things for various purposes there is a marked difference between the sexes. As a general rule a man selects a thing because it is useful, whilst a woman chooses an article because it is pretty, or because it conforms to some artificial standard which happens at the time to be in vogue.

I have never been able to find out why a woman usually prefers a delicately sharpened chisel to a screw-driver for turning a screw or for forcing a packing case open; but I am inclined to think it is due to lack of education in such matters. The problem of the screw is also a difficult one to decide, but as I have so often observed a woman attempt to turn a screw the wrong way before turning it the right way, I am inclined to think that the peculiarity must rest on some essentially sexual basis.

Women do not, as a rule, seem to be so handy as men in looking after pieces of mechanism and in keeping instruments in good order. They have a dislike for oil, and a tendency to administer a violent bang to anything that will not work. This again may be to a large extent due to the fact that girlhood has nothing to do with carpentering or any other form of handicraft except dressing dolls. In my operative surgery class I usually have some preliminary

sawing of pieces of wood before we proceed to the amputations.

There are many other points of difference between the sexes which I could tell you about, but it would take up too much time. I think I have said enough to convince you that man and woman are very different persons, and that in some respects perhaps man is at present more suited for medical work than woman, but that these differences are not all of them essential, but are capable of being overcome by education and assiduous practice. There are many men and many women who are quite unfit for the practice of medicine, and no doubt there are fewer women than men who have the necessary qualities. Nevertheless, when I compare the young women of to-day with the young women of Dickens and Thackeray, I feel confident that there will always be a sufficient and a steadily increasing number of women taking up medicine.

Just as there are differences between the medical man and the medical woman, so there must be differences in the kind of work they are most suited for. For many years to come men will continue to attend both sexes as they have done hitherto, but *you* must limit your activities to your own sex and to young children. I do not know any medical woman who professes to treat all comers, but if there is such a person I hold her to be an abomination.

More especially will you devote yourselves to the diseases peculiar to women, for they are indeed the justification for your existence. Obstetrics, of course, is a subject in which our students ought to shine. Any student from this school who failed to satisfy the examiners in obstetrics and gynaecology ought to be heavily fined. Many of you, of course, will eventually go to India and engage in Zenana work, but there is plenty of work in this country for those who wish to stay at home. There are good posts to be had under the county councils and other public bodies. I do not mean that they are very good from the point of view of remuneration, but the work required is admirably suited for the average medical woman. Although it is responsible work, it is mainly of a routine nature, and is not likely to unduly tax the woman's self-reliance by suddenly calling upon her to assume responsibility of the first magnitude.

The teaching of elementary hygiene, especially that part of it concerning the home and the care of young children, is essentially woman's work. You must not be down-hearted if your teaching is spurned by some woman who will boast of having had twelve children and having buried nine of them. You will not find it wise to inquire after the odd three, as it often happens that one is a cripple, another a lunatic, and the third is "doing time."

There are many valuable resident posts in hospitals for women and children, in sanatoriums, infirmaries, asylums, etc., scattered all over the country. Although valuable from the point of view of experience, they are mostly of a temporary nature, and do not therefore offer much opportunity of earning a livelihood.

Many women are now established in general practice in most of the large towns in England, and I understand that all of them are earning a living, and some of them are doing very well indeed. I do not think all medical women are suited for general practice. The successful general practitioner must be able to work hard all day and a large part of the night year in and year out; he (or she) must be able to dispense with regular meals, a full night's rest, and an annual holiday. He must always be ready to listen to anybody's tale of woe in such a way as to give the patient the impression that his is the only interesting case in the world; he must never be impatient or lose his temper, even when, after driving several miles on a cold night, he is told he is not wanted. He must be capable of carrying any amount of responsibility on his shoulders, and of giving people the impression that he knows a good deal about his work. At the present time the majority of women employ male doctors because, having little or no confidence in themselves, they find it difficult to place any in their medical sisters; if, therefore, you have any doubt about being able to do all the things I have just mentioned, you had better think twice before putting up a brass plate. As time goes on the sex will become better educated, and there will be room for more and more women practitioners. The number of women suitable for the higher branches of professional work is necessarily small, though not smaller in proportion than in the opposite sex. Major surgery is

only for the few, and I advise you not to attempt it unless you have confidence in yourself, your apparatus, and your assistants. That there are women whose operative work is of the highest excellence is proved by the statistics of the New Hospital, which, I believe, are as good as those of any other hospital, special or general.

REFERENCE.

¹ *Differences in the Nervous Organization of Man and Woman.* By Harry Campbell, M.D.

An Address

ON THE

EVOLUTION OF SURGERY.

DELIVERED IN THE MEDICAL DEPARTMENT, UNIVERSITY OF MANCHESTER.

BY

WILLIAM THORBURN, F.R.C.S.,

PROFESSOR OF CLINICAL SURGERY.

TO-DAY, gentlemen, we are concerned, not with our personal losses, but with the gains of that art which so many of you will practise in the years to come, and I hope to trace with you something of the evolution of surgery as I have seen it since the time when I had the privilege to be one of Mr. Southam's students. In those days we used as our guide in all surgical matters a textbook which was not only by far the best of its day, but which still in many respects presents a model of what a textbook should be. All of us—even the least industrious—read the first two pages of this work, and there we found the following statement as to the point of evolution which surgery had then reached.

"Operative surgery," says Erichsen, "like every other art, can only be carried to a certain definite point of excellence. There cannot always be fresh fields for conquest by the knife. There must be portions of the human frame that will ever remain sacred from its intrusion. That we have nearly, if not quite, reached these final limits there can be little question. To my mind it appears as if we had already reached something like finality in the mere manipulative art of surgery and in this direction the progress of modern surgery is nearly barred."

These words were written, or at least published, in 1884. The work of Lister was already known, and his methods practised throughout the world; the new surgery had begun, but few, if any, foresaw its rapid evolution. The very word "aseptic" was then not used of operative measures. Local anaesthesia was as far removed from our thoughts as was chloroform from those of Hippocrates; and when we seek for information upon the diseases of those organs whose surgical treatment now constitutes most of the work of our hospital, we find an absolute and complete blank. Let us take but two examples—the familiar and almost friendly adenoids of our childhood, and the appendicitis which brings so much of interest to all our lives and so much of profit to the surgeon. Neither of these diseases is mentioned, or was then known; while, so far as the latter is concerned, probably any attempt at surgical treatment would have been very promptly fatal. Were it profitable it would be easy by continued quotation from the textbooks of that day to show you that the changes which some of us, who are yet far short of the allotted span of human life, have seen with our own eyes and practised with our own hands, have implied an evolution in surgery not less wonderful than the development of rapid locomotion, of distant communication, or even of aerial navigation. But it will, perhaps, be of more interest if I try to indicate to you from a comparatively short personal experience what this growth has been; and although I do not wish to trouble you unduly with statistics, I would first invite your attention to a few figures which may bring home to you what the human race has gained in one quarter of a century.

In the year 1883 I became a house-surgeon at the old Manchester Royal Infirmary, and in 1908 we saw that building closed for ever. With some personal bias in