A Chadwick Lecture

ON

HEREDITY IN RELATION TO MENTAL DISEASE
AND MENTAL DEFICIENCY.*

DELIVERED AT THE UNIVERSITY OF LIVERPOOL

BY

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THE subject of this lecture is an important question to the ratepayer and the race. It can only be answered by a careful consideration and comparison of published statistics, carefully recorded pedigrees, and an accumulation of facts obtained by systematic investigations regarding mental deficiency and insanity, registered and unregistered, in the past and present.

If insanity and mental deficiency be on the increase, as a superficial glance at the rapid rate of increase of registered cases during the past thirty years would indicate, the causes for the increase should be apparent in the answers to the two questions: (1) Have the conditions required for certification undergone any change; has the standard of sanity and mental efficiency been raised so that a larger number of individuals are admitted and detained in asylums? The corollary to this is the rapid increase of provision for housing and maintaining persons of insane and defective mind. (2) If there be a rapid increase of insanity and mental deficiency among the population, as the increase of certified insane and mental defectives, with increased provision, appears to show, what are the causes of this increase?

On the one hand, the eugenists would associate it with the tendency of modern civilization to interfere with natural selection and survival of the fittest, whereby, in the struggle for existence, poor types are weeded out; and to them (the eugenists) the inborn factor is paramount. On the other hand, the social reformer would associate the increase with drink, syphilis, and infectious diseases. As an example I would cite the recent epidemics of lethargic encephalitis, in which the moral sense of children and young adolescents is affected. Poverty, overcrowded dwellings, and all that this entails in improper upbringing, especially in our large towns and cities, must tend to mental and bodily defect. It is the old question of the relative importance of nature and nurture, in which is involved the great problem of heredity and the transmission of acquired characters. The eugenists will allow that good raw material, likewise bad raw material, may be found in all classes, and that there is abundance of good raw material spoiled by bad upbringing and bad conditions of environment. The social reformer should exercise discrimination and recognize the fundamental teaching of heredity that like tends to beget like, and that the most he can do by his efforts is to prevent good raw material being spoiled, and bad raw material being made worse. Undoubtedly education, sanitation, the feeding of the mother and offspring—in fact, child welfare—can, by providing a healthy body, develop and improve such potential mental energy and bodily conditions as the individual possesses. But if there is an inborn failure of mentality, either in psycho-physical energy, educability, or moral sense, then there must be an innate predisposition to some form of mental deficiency. Or if there be a lack of balance and control of the innate potentialities of mind, there will be a tendency towards the development of

insanity at the critical periods of life when the sex instinct matures and wanes.

The increase of registered insanity may be partly explained by a diminution of unregistered insanity as asylum accommodation has increased. Large numbers of this class of patient with chronic incurable mental disease have been admitted and detained for life in asylums. I need only refer to facts regarding accumulation, prior to the war, of 20,000 registered lunatics in the London County Council asylums. Of these, more than 10,000 had been there for ten years, and over 4,000 had been there for twenty years or more. The sheltered conditions under which the inhabitants of asylums lived was doubtless the means of increasing their length of life. During the war, however, there was a great increase of the death rate of the insane owing to low vital resistance, due to an insufficiency of animal fat in the food, and overcrowding, owing to many of the mental hospitals being used for war hospitals, thereby increasing greatly the liability to infectious diseases, especially to influenza, to pulmonary complaints, and to tuberculosis and dysentery.

The fact that a person died in an asylum does not necessarily show that he or she was suffering from a mental disease capable of hereditary transmission. For there are many cases of organic brain disease, such as general paralysis, arterio-sclerosis, and other conditions such as senile decay, which do not indicate hereditary transmission. This necessarily vitiates the value of statistical data and, to a less degree, pedigrees; for, very often, the only information that can be obtained is that the patient's parent or grandparent died in an asylum. There are a great number of cases which are not certified or sent to asylums which are more likely to transmit a neuropathic or psychopathic disposition than many of those who have been certified as insane.

In the past the legal conception of insanity has outweighed the medical conception. Nevertheless, it is primarily a medical question, and it is being recognized by the public that it is undesirable to send acute recoverable cases into asylums, without a chance of their being treated upon hospital lines in special institutions for that purpose. It must be recognized, however, that the great percentage of persons who are sent to asylums suffer with a form of mental disease which is transmissible; for it was found in the London asylums that 28 per cent. of recoverable cases relapsed within five years, and that 12 per cent. returned within one year. This periodic insanity is especially liable to be transmitted, either in an atypical form, or, more often, as dementia praecox in the next generation.

PREMISES OF MIND IN RELATION TO BODY.

Before considering the accumulated facts bearing upon heredity in relation to mental disease and mental deficiency it is desirable to lay down certain premises. The first is: What is mind? There can be no mind without memory; there can be no memory without body. All psychic processes are dependent upon physiological processes occurring in the body. The furniture of the mind is the memory store of our experiences and the bonds that unite them. The avenues of our experience are the senses which continually tell us of the existence of our body, its desires and aversions in relation to the world around, and how these desires and aversions, necessary for the preservation of the individual and the preservation of the species, may be effected by voluntary effort and judgement of value based upon our own experience or the experience of others. The dictum of Aristotle, "*Nihil in intellectu quod non fuerit prius in sensu*," would be more correct if "*et in motu*" were added; for every idea, every thought, tends to activation, either motor or glandular. The store of experience, then, depends upon the whole of the nervous system, but it also depends upon the circulating blood carrying oxygen by the arteries to the capillaries and there removing and carrying away by the veins carbonic acid and other products arising from the functional activity of all the tissues of the body, including the brain. If the blood carrying oxygen to the brain be cut off for a few seconds, unconsciousness occurs, and while this lasts it ceases to be a receptor of sensory impressions—therefore for a brief

* In his introductory remarks in this, the first of a course of Chadwick Lectures, Sir Frederick Mott spoke of the great pioneer work in sanitary science of Chadwick, in whose honour these lectures were given. He was the first to call attention to the necessity of legislation for cleansing, lighting, and policing of the streets and for establishing systems of water supply and drainage in our cities and large towns. This he did in a report in 1842 of the sanitary condition of the labouring population of Great Britain. Sir Frederick Mott also called attention to the fact that most of his work on heredity was done at the Claybury laboratory of the London County Council. Sir William Collins, one of the trustees, was the originator of the investigation of the causes of insanity by the London County Council and was chairman of the Council when the laboratory was established; the lecturer took this opportunity of expressing his acknowledgement of the great service Sir William Collins had rendered to psychological medicine.

time there is no memory of the events happening in the world around; and for that period of time memory is not being furnished. The same happens in concussion and sleep. The quantity and quality of the furniture of the mind depends first upon the innate-hereditary dispositions dependent upon species (*Homo sapiens*), sex, race, and familial ancestry. The brain is the material basis of mind; it acts as a receptor of sensations pouring in from the world around or from the body itself. Physiology and medical science have taught us that psycho-physical energy is dependent upon biochemical substances circulating in the blood, and that absence of one of these internal secretions or derangement of the normal balance can seriously affect bodily and mental processes. The truth of this statement is best exemplified in the case of the internal secretion of the thyroid gland. In districts of Switzerland and Central North America iodine is deficient in the water and the soil, and there myxoedema and cretinism are very prevalent. It has been found that cretinous idiocy is due to an absence of thyroid secretion; there is stunted growth of the body and arrest of development of the brain. If thyroid gland be administered to infants suffering with cretinous idiocy, the growth of the body is promoted, the brain grows, and the mind develops, in virtue of its being able to act as a receptor and store of experiences. In districts where there is a subminimal deficiency of iodine, the prevalence of goitre, myxoedema, and cretinism has been enormously reduced by adding iodine in the form of sodium iodide in the salt. This is supplied by the Government, or small amounts are added to the drinking water. The effect upon the prevalence of this disease has been extraordinary.

The cerebrum, so far as we can judge from the cranial capacity, has not increased in size during the last twenty thousand years, nor improved in its capacity of storing experiences. Man has so developed as to be able to make continually enormous progressive advances in culture and control of the forces of Nature by the invention of articulate and graphic language by which the great social heritage of mankind has been built up in successive ages of civilization, whereby everybody who has a normal healthy body, especially a healthy brain, can fashion his mental furniture not only out of his own actual life experiences, but by abstraction from the collective experiences and judgements of past and present civilizations.

The three springs from which all the streams and rivers of mental activity have their source are: the primal instincts of self-preservation, preservation of the species, and the social instinct. Even the most complex and refined feelings and conduct of cultured people, when analysed, can be shown to have their vital urge—*élan vital*—deep down and unconscious in one of these instinctive forces.

The social instinct occurs only in some animals—for example, the bee, the ant, the dog—and the result is more intelligence and more unselfishness. Man has become what he now is by the progressive development of this social instinct. Man has had two languages for intercommunication—gesture language (the language of the emotions) and articulate symbolic intercommunication; also by beliefs, symbolic rites and ceremonies, traditions, customs, and usages directly or indirectly associated with the sex instinct and the preservation of the species, and indirectly and collectively connected with the preservation of the individual. There is an instinctive dread of loneliness, there is an instinctive moral sense—that is, a tendency to a sense of right and wrong—common to all human beings, and there is an inborn aesthetic sense in some favoured human beings, even shown in prehistoric times by the artistic efforts of man.

HEREDITY.

The life of the individual begins at conception when the male and female germ cells unite, each bearing the characters of the species, sex, race, and familial ancestry. The latent potentialities of body and mind constitute the raw material of inheritance out of which the furniture of the mind will be fashioned. The raw material of mental inheritance consists of psycho-physical energy, emotivity, educability, moral and aesthetic sense, and highest control.

The nearest approach to identity of mind and body in two individuals is, as Galton showed, in similar twins; there is identity because they are both derived from a single fertilized ovum, whereas dissimilar twins are derived from two separate fertilized ova. Galton found that similar twins brought up in different environments remained identical in bodily condition and mental disposition; whereas dissimilar twins brought up in the same environment remained dissimilar in bodily condition and mental disposition. Observations and calculations made by Professor Starch tend to show that from 60 to 70 per cent. of mental character and disposition is due to heredity and only 10 to 40 per cent. to environment and upbringing. Inborn characters are fixed and preorganized. What is the latent factor in the fertilized ovum which enables it to extract food and force from the maternal blood during the successive stages of pre-natal growth and development? A repetitive cell division to form organs and tissues with specific differentiated function occurs. By a vital harmonious interaction of the organs and tissues with differentiated functions a social organization of cells is built up on a definite plan of the species. The circulating blood and lymph and the nervous system integrate the functions of these differentiated structures and bring the whole into harmonious interrelation. The well-being and life of the individual from the time of conception onwards depends upon biochemical and biophysical processes in which oxygen is an essential agent. If time be altogether disregarded, heredity may, like habit, be conceived to correspond to memory and based—as Hering, Samuel Butler, and Laycock assumed—on one and the same dynamic principle. This theory has been elaborated by Semon in his work on the Mneme. The mnemonic principle is, that when living matter is excited by a stimulus it is altered dynamically, for when the stimulus has ceased the evidence of excitability is no longer observable and the organic living matter returns to rest; but that a dynamic alteration in the living matter has occurred is shown by the fact that a weak stimulus of the same nature suffices to provoke a revivescence of the same reaction in the living matter. Now if two stimuli simultaneously or successively excite living matter either of the two stimuli or successive stimuli will suffice to effect a revivescence of the whole simultaneous or successive reactions. The progressive development of the embryo from the fertilized ovum may be explained upon the mnemonic principle of an orderly sequence of similar repetitive stimuli proceeding generation after generation in the process of evolution. There has been established a preorganized mechanism in the fertilized ovum of man by which the embryonic cells in the course of their successive phases of development are able under favourable dynamic and circulatory conditions to extract from the maternal blood the materials necessary for building up all the tissues of the body upon an ancestral plan of species, sex, race, and familial pattern. "Like tends to beget like" is a well accepted truism from the time of Lucretius.

An inquiry which was carried out for me by Miss Agnes Kelley in the parish of Bethnal Green showed that like tends to beget like.

This inquiry was made with the object of comparing the heredity and social conditions of a certain number of insane, mentally defective, and normal persons. Sixty cases were taken in each group. The first group was of adult patients in the London County Council asylums; the second of high-grade mental defectives; the third of normal children from the elementary schools. The last two groups were at schools in different districts of Bethnal Green. Every care was taken to make as full and complete a family and social history as possible, and pedigree charts were constructed. The report was published in Part II, Annual Report of the Board of Control, 1915, and the following is a very brief summary of the results of this inquiry.

Insanity was very much more prevalent in the pedigrees of insane persons than in those of mental defectives—namely, in the proportion of 50 per cent. as against 25 per cent. of the defective cases. Conversely, mental deficiency was more apparent than insanity in the family histories of the defective children; while the charts of the normal school children only showed insanity and mental deficiency in a very small percentage of cases.

Good trades and high wages were rare in the mentally defective group. Though there were a few exceptions, the general type of employment was poor, and 75 per cent. of the fathers were casuals and unskilled workers.

There was a corresponding dead level of poverty in the home conditions of these cases, and the incapable mother was very

conspicuous in this group. In few of the asylum cases, and among still fewer of the mental defectives, could the home conditions be described as good, while one-third of the homes in each of these two groups were classed as "homes in which the food was quite inadequate, the clothing very poor, and bare necessities were lacking." The normal group showed a decided improvement in industrial conditions and in the care of home and children, and there were very few cases of intense poverty or neglect. There was, further, a very striking contrast in the dependence on parish and charitable assistance among the families of the normal group on the one hand, and of the insane and mentally defective groups on the other. The normals not only applied less often to the parish, but they were also less well known to charitable agencies.

It is a well known fact that a general durability of all the organs and tissues of the body, manifested by longevity, is inherited. This general durability implies not only functional harmonious interrelation of organs and tissues, but a generalized vitality of the body manifested by a psycho-physical energy and capacity of resistance to disease and recuperation from the effects of bodily injury and disease.

Conversely, a study of heredity shows that the life of the individual *ab initio* may be deficient, inasmuch as the fertilized ovum from the start has inherited a lack of durability or *vis propria*; it may be of the whole body or of some special organ or structure. The cerebrum, which from an evolutionary and developmental point of view is the last to come and is the most complex and refined in structure, is the first to go.

All the physico-chemical processes upon which mental activity depends take place in the thin layer of grey matter which covers the surface of the brain. These countless thousands of millions of cells which constitute the anatomical substance are developed from a relatively small number of cells of the original neural blastema by continuous repetitive divisions upon an ancestral plan of species, sex, race, and familial ancestry, and the result is a convoluted pattern first of the species, then of sex, then of race, and lastly of family. An arrest of development in the number of cells, so that we have a small ill formed brain with a defective convoluted pattern, will cause idiocy or imbecility according to the amount of arrest of development. The superficial extent of the cortex if spread out would be found in these cases enormously diminished as compared with a normal brain, and the dendrites are incompletely developed. They are, therefore, incapable of functioning. Proportional to the failure of development will there be a failure of capacity for mental processes—*amentia*. Mental deficiency is proportional to the defect of development of the organ of mind.

In dementia not due to heredity but to invasion of the brain by the spirochaete of syphilis there is progressive destruction of the normal developed brain by the poison generated by the multiplication of the specific organism, and the loss of mind is proportional to the degree of destruction.

A lack of psycho-physical energy may be transmitted in the male or female germ cells, causing an innate hereditary deficient *vis propria* which may lead to death at any period, pre-natal or post-natal. This is true hereditary deficiency and must be distinguished from congenital deficiency of the *vis propria*, which is due to devitalizing conditions affecting the growing embryo prior to birth. Often the two conditions are combined. There may be a lack of vital force (*vis propria*) on account of age of parents—namely, immaturity or senility at the time of conception. The question arises, Can exhausting conditions cause a lack of vital force of the male germ cells? Lead poisoning seems to be able to do this. There is evidence to show that lead poisoning in males whose occupation exposes them continuously to its influence leads to death of the embryo and abortion. It is conceivable that sexual excess, especially of the male, may greatly increase the chance of an immature sperm cell fertilizing the ovum. Nature seemingly has provided against this happening by storing the seed in vesicles, thereby permitting time for the healthy vigorous spermatozoa to grow and the weak to lose their vitality and die, thus permitting a process of survival of the fittest. But if there is continuous stimulation of the reproductive glands, the vesicles will only contain immature sperm cells with a lack of *vis propria* similar to those of the old man.

Lack of *vis propria* affecting the psycho-physical energy of the offspring is more likely to arise in the male germ cell than in the female germ cell because an extensive active process of cell reproduction only occurs in the female after fertilization of the ovum and growth of the developing embryo, otherwise there is nothing like the amount of cell reproduction there is in the male.

The observations of Kyrle, which I can confirm, show that a large percentage of male infants and children that die of marasmus or tuberculosis have testes in which the embryonic cells of the spermatic tubules show no signs of development beyond the embryonic stage present at birth. This may be explained by an inherent lack of *vis propria* in the most important tissue of the body, and consequently a low power of general resistance to disease. A lack of *vis propria* may also be manifested in the highest evolutionary level of the brain with inability to complete its development; or there may be a premature failure of durability which shows itself after birth by various grades of mental deficiency and dementia *præcocissima*. In such cases an arrest of growth of the branching processes of the neurones, which are the anatomical correlation for higher mental processes, may be found.

Various forms of mental deficiency and mental disorder occur in primitive races similar to those occurring in civilized races, but the symptoms are coloured by the beliefs, social usages, and customs. Natural selection and the struggle for existence tend to eliminate the unfit more in primitive races than among civilized people, where pity and altruism are a part of culture. There is a tendency to end or mend a degenerate stock by the law of anticipation, whereby the offspring of insane parents who become insane do so at an earlier age, and in a more intense form, so that they are segregated and procreation is prevented. Not only is there a tendency for insanity to occur in the offspring of insane parents at an early age in adolescence, but there is a lack of vital urge, shown in a regressive atrophy of the sexual organs, especially in males. This leads directly to a lack of procreative power and indirectly to an absence of desire for the opposite sex. In females the sexual act, as compared with males, is passive, and therefore many cases of dementia *præcox* marry and have one or more children. But the stress of this normal physiological condition is sufficient to bring on the mental disease. The sex instinct is a great source of psycho-physical energy, and coexistent with a lack of this energy is a change in the behaviour of the male. He is brooding, introspective, and his mind is engaged in fantasy rather than reality.

A study of 4,000 cards of relatives in the London County Council asylums and a large number of carefully recorded pedigrees has shown that certain types of insanity are very liable to hereditary transmission. They are: (1) involutional melancholia, (2) manic depressive insanity, and (3) dementia *præcox*. Involutional melancholia in a grandparent may be followed, in the next generation, by manic depressive insanity, or dementia *præcox* in the third generation. A frequent sign of hereditary transmission was the existence of two, three, four, or five members of the same co-fraternity affected with dementia *præcox*, manic depressive insanity, or imbecility.

Eugenists would consider heredity the main cause of insanity and mental deficiency, and would affirm that the State should adopt means to prevent procreation by feeble stocks either by segregation or sterilization. But I do not propose to discuss this very debatable question of sterilization of the mental defective, such as the higher grade imbecile or the moral imbecile, which are found in all grades of society. Before any such proposal could be the subject of legislation much more information is required regarding heredity in relation to mental deficiency and the influence of education and social reforms. It must be remembered that social reformers, at any rate, are able to point to the fact that a larger number of people are living to old age with improved conditions of environment, and if there is a smaller birth rate there is a proportionally lower infantile death rate. Truth appears to me to be with both schools of thought. But, it may be asked, Would it not be wiser to spend the ratepayers' money in the preservation of good types and not waste money in trying to teach mental defectives who are uneducable, each of

whom costs three times as much as a normal child to educate? I do not infer that they must be left without any endeavour being made to develop such aptitudes as they possess. They have neither initiative nor creative ability; they do not possess the imitative faculty necessary for storing up in memory words and numbers, much less of utilizing them for various processes of abstract thought and reason. Now the association of the eye and hand appears before speech in the developing infant and in the process of evolution, therefore simple manual operations can be more easily taught by imitation than can book knowledge. It is reasonable to suppose that a certain degree of skill can be acquired in handicraft by imitation, whereas abstract symbolic thought and reason by means of words and numbers, except in the most simple way, cannot be acquired by the mentally deficient, owing to arrest of development of neural structures and function of the latest highest evolutionary level of the brain. The most successful colonies for mental defectives are those where manual occupational education and treatment are best carried out. Manual occupation has an uplifting effect on these poor children, for it affords a certain satisfaction to them to know that they are not so inferior to normal children as book learning, of which they are incapable, makes them feel. Successful occupation, emulation, and reward, moreover, engender self-respect and a sense of well-being. Rhythmic movements, singing and dancing, also are easily acquired by imitation for similar reasons, and produce a sense of well-being and a joy in life. Especially is it desirable to place mental defectives in colonies at an early age before the sex instinct matures, for owing to the mental deficiency there is a lack of control of the animal passions; they are unable to sublimate the vital urge along healthy lines.

The high-grade imbecile and the moral imbecile are found in all grades of society, and it may be difficult to find sufficient grounds for compulsory segregation till adolescence or until repeated delinquencies lead to a proper inquiry into his or her mentality. With the idiot and low-grade imbecile there is not this difficulty, and they are either infertile or are cut off in early life by disease or neglect, if not placed under care in an institution; whereas the higher grade imbecile, especially of the female sex, is fertile, and very liable to be the mother of a large illegitimate family of children, many or most of whom are weak-minded. In large cities and towns immoral imbecile women sooner or later, however, suffer with venereal disease, and this leads to sterilization and abortion or to the birth of dead children.

In rural districts the migration to the cities and large towns for higher wages has led to a steady and progressive deterioration of the mentality of the population. This is shown by the fact that although there is less drink consumed in rural populations than in industrial and maritime, yet there is, *pro rata*, a higher percentage of registered mental deficiency and insanity. This is a strong argument in favour of encouraging legislation which will lead to an increasing number of a better type of men and women being able to remain on the land and obtain a decent living. A policy which brought this about could not fail to be an important factor in the betterment of the race. Moreover, such a policy would be of great national economic value, inasmuch as the more land that was under prosperous cultivation the less would the nation expend in imports of food. The time has come when the nation must recognize the necessity of regaining a mentally and physically capable rural population with a higher standard of living and a higher birth rate of children potentially sound in mind and body. The Bible says that men do not gather grapes of thorns or figs of thistles. Neither can we expect to have a mentally efficient rural population under present conditions.

The dominions take elaborate measures to prevent mentally deficient emigrants arriving and settling in their country. They prefer to have those that are able to work on the land, so that this is another reason why, unless something is done to improve the conditions of our workers on the land, a steady further deterioration of the race must ensue.

A Post-Graduate Lecture ON HAEMORRHAGE ABOUT AND AFTER THE MENOPAUSE.

DELIVERED AT THE MANCHESTER ROYAL INFIRMARY ON
MARCH 16TH, 1926,

BY

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EXCESSIVE or irregular haemorrhage about the menopause and haemorrhage after the menopause are among the commonest symptoms which make women seek medical advice. The symptoms are produced by many different pathological conditions, but this must never allow us to treat the condition lightly, or forget in any case that malignant disease of the uterus is one of the most frequent and by far the most important cause of this symptom.

I have chosen this subject for the particular purpose of emphasizing this fact, and what I wish to be remembered of this lecture can be epitomized in one sentence: "Excessive or irregular haemorrhage about the menopause and any haemorrhage after the menopause should always make us suspicious of malignant disease of the uterus, and we are never justified, in any circumstances, in treating these symptoms without making a vaginal examination, and, in the case of haemorrhage after the menopause, where vaginal examination reveals no growth in the cervix, without curetting the uterus to eliminate the possibility of malignant disease of the body." We all know this, we were taught it as students, and in the majority of instances we act up to it; but there are odd cases which escape, and these are those the consulting gynaecologist so frequently sees.

I do not think anyone but a gynaecologist realizes how many cases come for advice when the disease is past all hope of cure. Of course, in the majority of instances the fault lies with the patient herself; there is an ineradicable belief among women that haemorrhage at that time is quite normal; little attention, therefore, is paid to it, and the difficulty is to make this knowledge general among women without unduly scaring them.

Although the majority of cases brought too late for any hope of cure are thus accounted for, there are nevertheless a very large number who are kept under medical supervision for long periods without an examination being made, and when finally this is carried out the time for useful intervention is past.

Of all the cases of carcinoma of the cervix who consult me in private or in hospital I find I am able to perform a complete Wertheim's hysterectomy in only about one-third, and yet if these cases come early very good results are obtained; taking all my cases together, the earliest with the least favourable, and not making any allowance for death from intercurrent disease or operation mortality, I find that of all I operated upon more than five years ago there are alive and well at the present time 33 per cent. If only we could get all these cases in the earlier stage the curability would be much greater.

Operative treatment of malignant disease of the body of the uterus gives much better results than in the same disease in the cervix, and, moreover, the disease does not so readily invade other structures; still, in this situation as in all others, the earlier the disease is recognized the better is the chance of its total eradication.

It is a simple and easy matter to suggest and carry out an examination upon a complete stranger, especially where she has consulted a gynaecologist for the special purpose, but quite another matter when the patient is a personal friend or acquaintance, as she so often is to the general practitioner; and so, when first consulted about this symptom, quite naturally the practitioner is inclined to temporize, and hope that the cause may be one of the many simple ones and not the one he fears. In this way much valuable time is frequently lost, and it is necessary in the