medical officer of health and the surveyor. It is true that the medical officer of health has long had power (by Torrens's Act) to report on houses which he considers unfit for human habitation, and that local authorities have had power to pull down or to close such houses, and that now by Mr. Cross's Act, passed last session, power is given to pull down whole areas of houses where they cannot be altered so as to be put in a proper sanitary condition. So far, so good. But we want, as I said, power over new houses. The medical officer of health must also be acquainted with all matters relating to air-supply and ventilation, especially of public buildings—theatres, churches, etc.—and with the sanitary arrangements of hospitals, workhouses, asylums, and prisons, which have long since been cleared of the jail fever; and someone has said that they are "the only places fit to live in". He must be prepared to advise in cases of overcrowding, and to give his opinion on all cases of complaints of nuisances of any kind, and to support that opinion by evidence if need be. He must be acquainted with all the methods for the removal of refuse matters, and know the advantage of each, and the conditions under which it may be applied. His advice is asked on all such important matters as the ventilation of sewers, the treatment of sewage, the cleansing of streets, etc., as well as on water-supply and purification. He must be acquainted with the injury to health which is caused by various trades and employments, and with the methods of preventing it, and also with the arrangements for keeping animals in a proper condition, slaughtering cattle and disposing of offal. He must be able to use his microscope, not to mention a number of other instruments of research. He must be acquainted with the ways in which epidemic diseases spread, and with the means to prevent them spreading. It frequently happens in practice that one man gets typhoid fever in a small town, and, because proper precautions have not been taken, the epidemic spreads all over the town. Another instance may be quoted. A boy comes home with the same disease to a village cottage, the medical man takes proper precautions, and there is not another case of the disease in the village; whereas, in the same village, before those precautions were taken, an epidemic had several times taken place. Thus there is now room for specialists. One versed in sanitary matters is often now-a-days consulted as to the sanitary condition of a house, especially where cases of fever have occurred. Then the medical officer of health must be a statistician, and, to a certain extent, know how to prepare statistical tables, and to draw correct results from them; and he must be an analytical chemist, too, to a certain extent, though he need not have such an extensive and accurate knowledge as that required by a public analyst; and he should also be acquainted with sanitary law and with the proceedings of law courts upon such matters.

All these various requirements make it necessary that he should study many branches of science. As Dr. Guy says, the science of hygiene "makes application of a knowledge remarkable for its amount and the great variety of sources whence it is derived".

And this is why hygiene has only so lately become a science. It is usually defined as the art of preserving the health; the art by which we contrive to lengthen our lives; but it is more than this; it is the science which studies the causes of diseases, and points out the means for the prevention of disease; for to prevent disease we must study its causes, we must find out the conditions which favour it, which tend to make it spread.

The earliest science is that of numbers, and it is the most perfect: mechanics and astronomy and the other physical sciences are all subject to the science of number, and are all wonderfully perfect because of it. Chemistry—the study of the composition of bodies—is making wonderful advances, but the Newton of chemistry has yet to come. Then biology—the science of life—of which the study of physiology is advancing so much in our day; pathology—the study of disease—all had to advance to a considerable degree of perfection before hygiene could be born; it links physiology—the study of healthy action—with pathology, and shows how we pass from health to disease.

The hygienist must be, in the first place, a good pathologist; he must be well acquainted with diseases, and especially with their origin. He must be a good physiologist and anatomist, for, unless he has made a study of what the normal condition of the human body is, how can he advise as to the methods for keeping it in that condition? He must be a chemist and physicist, and even a mathematician to a certain extent. The more he knows of geology and botany the better, and he must be familiar with meteorology. So a hygienist must be a physician; and this is why the universities require men to be B.M.'s before they attempt to take degrees or diplomas in State Medicine. Several of these are now created, and the University of London has established a diploma in this subject; provision has been made for the complete study of it in this College; and a laboratory is nearly fitted up, in which students will be able to perform for themselves analyses of sam-

ples of air, water, and various foods and drinks, and so learn to fulfil the duties required of them as medical officers of health and public analysts.

I hope I have especially impressed on all the importance of sanitary science to medical men, whether they undertake public duties or not, and that many of you will attend in the summer course on hygiene, if you do not enter for the practical work in the laboratories. Anyhow I wish you all success in your careers, and whatever branch of medicine you take up, remember that it is not only your duty but your privilege to prevent suffering, disease, and death, to the utmost of your power.

You have much to learn; do not put things off. Seize the opportunity. Do not waste your time; every day spent in idleness makes it more difficult to work the next day. On the other hand, beware of neglecting out-of-door exercise, so necessary for the health of the body and of the mind too. You cannot learn well and thoroughly unless you keep your bodies strong; the *corpus sanum* is essential to the *mens sana*. Do everything earnestly; be eager in your sports as well as in your work; mind that a few hours of real and genuine hard work are worth days of dawdling, and take as your motto the words of the immortal Hippocrates, words so especially applicable to medical studies, "Life is short, but art long; opportunity fleeting; experiment dangerous, and judgment difficult".

MEDICAL REFORMS:

Being part of an Address delivered to the Reading Branch of the British Medical Association.

By GEORGE MAY, F.R.C.S., President of the Branch.

The Practice of Midwifery by Women.—The Contagious Diseases Acts.—The Medico-Legal Relations of Insanity.

IT is as President of the Reading Branch of the British Medical Association that I have the honour to address you to-day. It was my privilege to rock its cradle; I have earnestly watched its progress; and I ask you now to rejoice with me at its distinguished success. In spite of its earlier difficulties, it has become a great institution, an influential power. For the promotion of original researches, and for the investigation of subjects beyond individual enterprise, it extends its fostering aid; and for the expression of the opinions and wishes of our profession on questions which demand legislative enactment, it can now speak with an authority which cannot be disregarded. Among many subjects of professional and general interest, there are some which claim especial regard. The education of females to the practice of medicine is one of deep interest and importance. In the promulgation of all that relates to the laws of health, I believe we should find in co-operation with well-educated females a valuable and powerful help. I should hail the day when the entire department of midwifery were transferred to the charge of competent females. With opportunity to consult with male practitioners in cases of difficulty, I am of opinion that more satisfactory results would follow than by present arrangements. We know how anxious is the position of the practitioner when (detained by an obstetric engagement) he is unable to fulfil his other duties, be they ever so urgent; and we are all too painfully familiar with the difficulties and risks encountered by attendance on infectious cases while engaged in midwifery practice. It were well for the public interests if attendance on both classes of cases conjointly were held to be incompatible; and I do not see how disassociation could be made practicable, excepting by the substitution of female for male attendants in the entire department of midwifery. The subject is intensely important, and demands at our hands a serious and unselfish consideration.

The Contagious Diseases Act also demands attention from every member of our profession. The enthusiastic and well-meaning, but, I believe, misguided, efforts of numerous opponents of the Act (chiefly on asserted moral grounds) have given the subject more than ordinary interest. The condition of the unfortunate beings obnoxious to this Act is most deplorable. Very many of them are supplied from homes where both sexes and all ages are huddled together, where decency and self-restraint are unknown, and where prostitution would seem to be the natural, if not the inevitable, result. The wonder is not that many have fallen, but that so many have escaped the fall. When overtaken by disease, they are refused admission into many hospitals until evi-

dences of poisoned frame are too manifest. So long as they are physically capable of pursuing their vocation as their adopted means of livelihood, they are often compelled to be regardless of the existence of disease which is contagious, and so is multiplied *ad infinitum* the terrible scourge with which our profession is unhappily too familiar. The beneficent Act passed a few years ago by a wise and humane legislature is now sought to be repealed on moral pretexts. The outcast wanderer is encouraged to defy the law, to protect the *liberty* of her poor diseased body, and to reject the means of relief and cure, and a way opened to her of escape from her degraded and pitiable life. Certain members of the legislature have leagued themselves against the Act; and one distinguished member of the late administration has pledged his future life to its repeal. Even among our own profession there are some who are not satisfied with the Act. If the system of certificate be an inducement to immoral indulgence, surely this can be amended; and, in my judgment, opponents are bound in humanity to provide a satisfactory substitute before they inflict on the nation so terrible a calamity as the loss of the present Act. The British Medical Association, through its multiplied branches and its intelligent press, offers an excellent vehicle for collecting the medical opinion of the country on this most important subject.

In fulfilment of his foreshadowed intentions, our distinguished Premier has grappled with the Sanitary Acts. If within reasonable time he can bring them from chaos to order, and enact supplementary laws founded on our combined professional knowledge, and make them applicable to the entire kingdom, and compulsory instead of permissive, he will deserve a civic crown.

The medico-legal relations of insanity, the boundary lines of responsibility and non-responsibility for crimes committed under conditions of assumed mental disease, involve questions of grave import, and challenge the intelligence and soundness of our jurisprudence. A conference between distinguished members of the law, and of medicine (as suggested by Dr. Russell Reynolds), might lead to satisfactory results. We want a "forensic medical officer" whose professional training shall comprehend psychology, and all that may prepare him to analyse the ever-varying phases of mental aberration, to detect the crafty malingeringer, and to assist the judge in determining the *degree of responsibility involved in the act of imputed criminality*. And who so fitted as he? For such knowledge is special, and comes by patient labour, and not by intuition, as some have presumptuously asserted. The illustrious Casper, by his genius, energy, and unrivalled experience, contributed largely to establish a criminal code in Prussia, a model of wisdom and humanity; and secured for his country an enviable distinction, and for himself undying fame. I have ventured to make a brief allusion to some among many subjects which have engaged professional interest, and which well deserve the serious consideration of our great Association. I heartily commend it now to your increased favour and support, and earnestly pray that its councils may be inspired with wisdom to guide and direct its united intelligence to the advancement of science, the honour of our profession, and the good of mankind.

THE CASE OF THE LATE PROFESSOR HUGHES BENNETT.

By W. CADGE, F.R.C.S., Surgeon to the Norfolk and Norwich Hospital.

PROFESSOR J. HUGHES BENNETT died at Norwich on September 25th, 1875, aged 63.

A narrative of his illness, so far as it is known to me, particularly of the last complication which led to his death, will have a sad interest for those who knew and loved him as a friend or teacher; and a deep professional, as well as a sad, interest for those, and they have been many,* who, from time to time, have used their best skill and thought to detect and unfold the hidden cause of his mysterious case. I know not exactly when or how Dr. Bennett's first failure of health commenced; but it was many years ago. The most prominent and persistent of his early symptoms were those of a bronchitic and laryngeal affection, which were sometimes urgently alarming, sometimes almost recovered from, were readily reproduced, and did frequently recur up to the very last.

By slow degrees, his general health failed, he grew thinner, looked pale, and lost strength. A few years ago, it was discovered that he had diabetes; but this disappeared without any great rigour of treatment, and has not been thought or known to have recurred, except

occasionally and very slightly. On this point, however, there may be room for doubt. Since the first discovery and the first disappearance of the sugar, I have reason to believe that examinations of the urine have not been frequently made. In conversations and in answers to questions on this subject, Dr. Bennett always spoke of the diabetes as a thing of the past, and as not bearing with importance, or as having much influence, on his steady deterioration of health; at no time had he thirst or diuresis; and, therefore, the malady did not impress itself on his thoughts by the usual general symptoms. Very recently, however (in August), sugar was again found; and I have before me a paper containing observations on the urine made three times daily during the first half of September 1875; from which it is shown that, while the specific gravity and the quantity of the urine were but little, if at all, above the natural standard, sugar appeared and disappeared in a quite irregular and intermitting way. Thus, the urine passed during the night gave a dense deposit, with Fehling's test, on five out of fourteen days; that passed at mid-day on six, and that passed in the evening on four out of fourteen days; while in all the other observations, no sugar was found. During this period, his diet was very similar from day to day; consisting of fish, a little meat, pudding or tart, fruit and sherry; very little bread, and no potatoes.

If, as I have said, in this long interval between the first and last clear recognition of diabetes, the urine was but seldom examined, and, when examined, chanced to be free from sugar, it seems probable that glycosuria, in one of its intermittent and milder forms, existed throughout, and was the true and chief cause of the emaciation and debility which, on any other hypothesis, it has been found so difficult to explain.

Be that as it may, his health continued to decline. The last three winters he passed in the south of France, with some benefit, possibly, to his bronchial and laryngeal affection, but apparently without any effect on his general state. For many years, Dr. Bennett had suffered from occasional attacks of gout; and he was liable, too, to lithic acid deposit in his urine; occasionally, for several years, he had experienced some slight impediment and irritation in making water, which he thought to be due either to slight stricture or to prostatic enlargement. From time to time, a simple catheter was passed, but no stricture was discovered. Last winter, at Nice, he had rather more vesical irritation than usual. On his way to England, in June, he stayed for a time on the borders of the Lake of Geneva; and a letter I received from him on July 1st will best describe his condition.

"I have long been intending to write to you in consequence of a malady which has been creeping upon me for some years, but which now is causing me no small anxiety. Frequent micturition; pain in the back, long thought to be lumbago, but which I now know to be renal; sediments of uric acid, and attacks of acute gout in the right foot, and one in the stomach, have indicated, during the last, say four years, pretty clearly the general diathesis and approaching local disorder. About three months ago, at Nice, I was suddenly seized with pain during micturition, extending to the extremity of the urethra, and passed about a tablespoonful of bloody urine, mixed with gravel. The bladder was irritable for about twelve hours. Lying in bed, poultices, and some alkaline water, got rid of it. Since coming here, four weeks ago, I have been sensible of dull pain in the perinæum; had two more attacks of irritable bladder, passage of blood, etc. Whether all this signifies irritable bladder, prostatic or renal disease, or stone, I cannot tell. Can you suggest what should be done? I have given up wine, beer, acids, fruit, and sugar; take a good deal of milk, little meat; indeed, the desire for animal food is small. I continue pale, weak, and emaciated; I apply poultices to relieve local pain, and take about twenty grains of bicarbonate of potash thrice daily, in the slightly alkaline waters of this place; I also take fifteen drops of vin. sem. colch. every other night or so. It may be only gout, but I dread stone. My urethra is very irritable; and, the last time a catheter was passed, I nearly fainted. This was two years ago; and I was then assured that there was no stricture or prostatic disease, merely a weak bladder."

In July, he came to Norwich, looking more emaciated, pale, and ill than I had ever seen him. On carefully sounding, a stone was readily felt, apparently of some size; the bladder was capacious and healthy, and could retain nearly half a pint of urine; the prostate was slightly enlarged; the urethra very sensitive and irritable; the urine was clear, acid, specific gravity 1.020, and contained no albumen. He was much depressed by the knowledge that he had stone, but his innate force of character came to his aid; he looked the difficulty in the face, and was prepared at once to undergo treatment. It was not without difficulty that I induced him to go to Edinburgh in the first week of August; there were many reasons which made a visit there desirable; travelling did not add much to his troubles; and I confess that I was not without the hope that, once there, he would be persuaded to ask, and would

* As I am unable to give, with accuracy, the views, so I have purposely avoided using the names of any of the physicians and surgeons who have at any time been consulted by Dr. Bennett.