

William Withey Gull : a biographical sketch.

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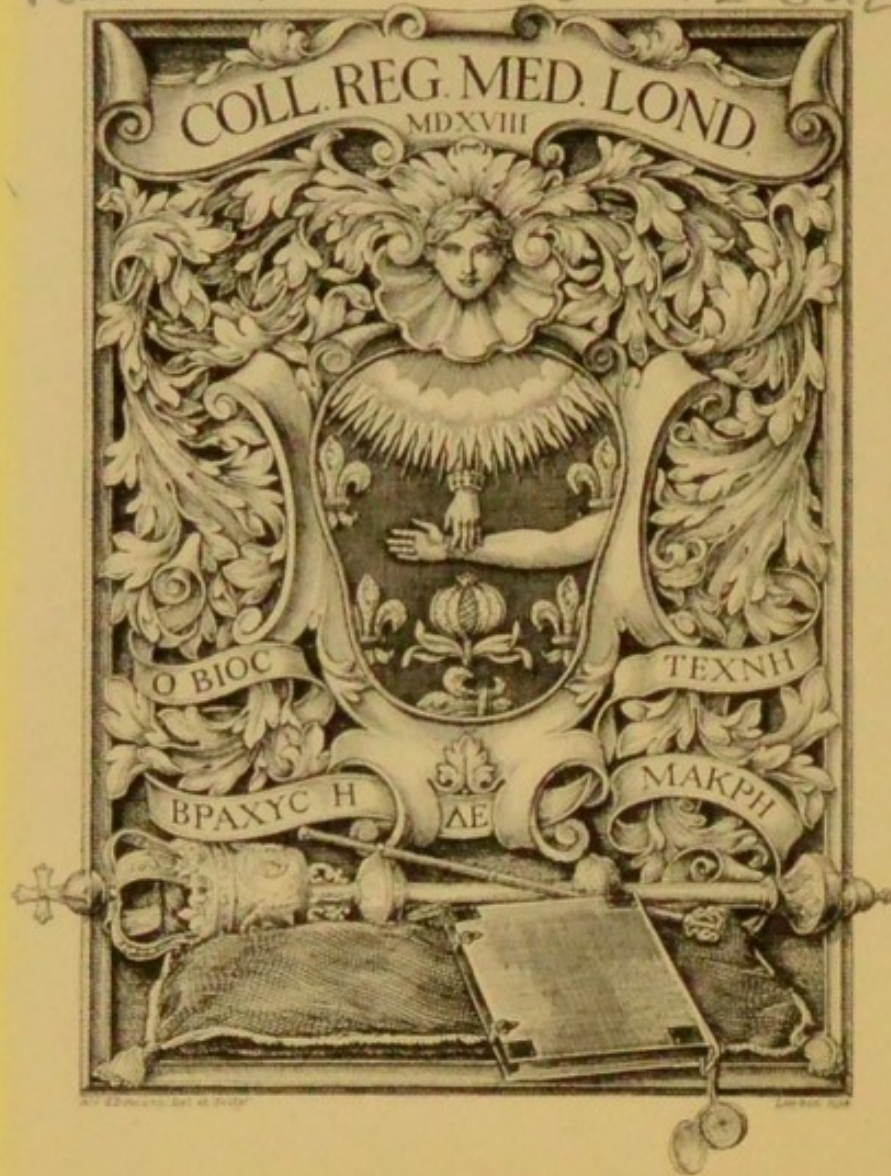
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To
S. Lloyd Roberts.
With kind regards.

Yrs. W. D. L.

Christmas, 1896.





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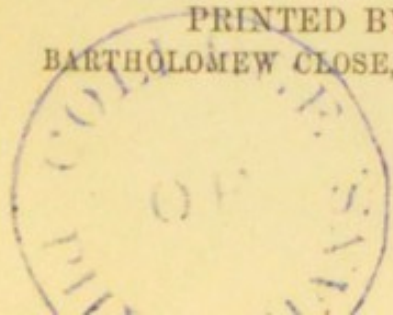
WILLIAM WITHEY GULL.

A BIOGRAPHICAL SKETCH.

ACHARD (Theodore Dyke)

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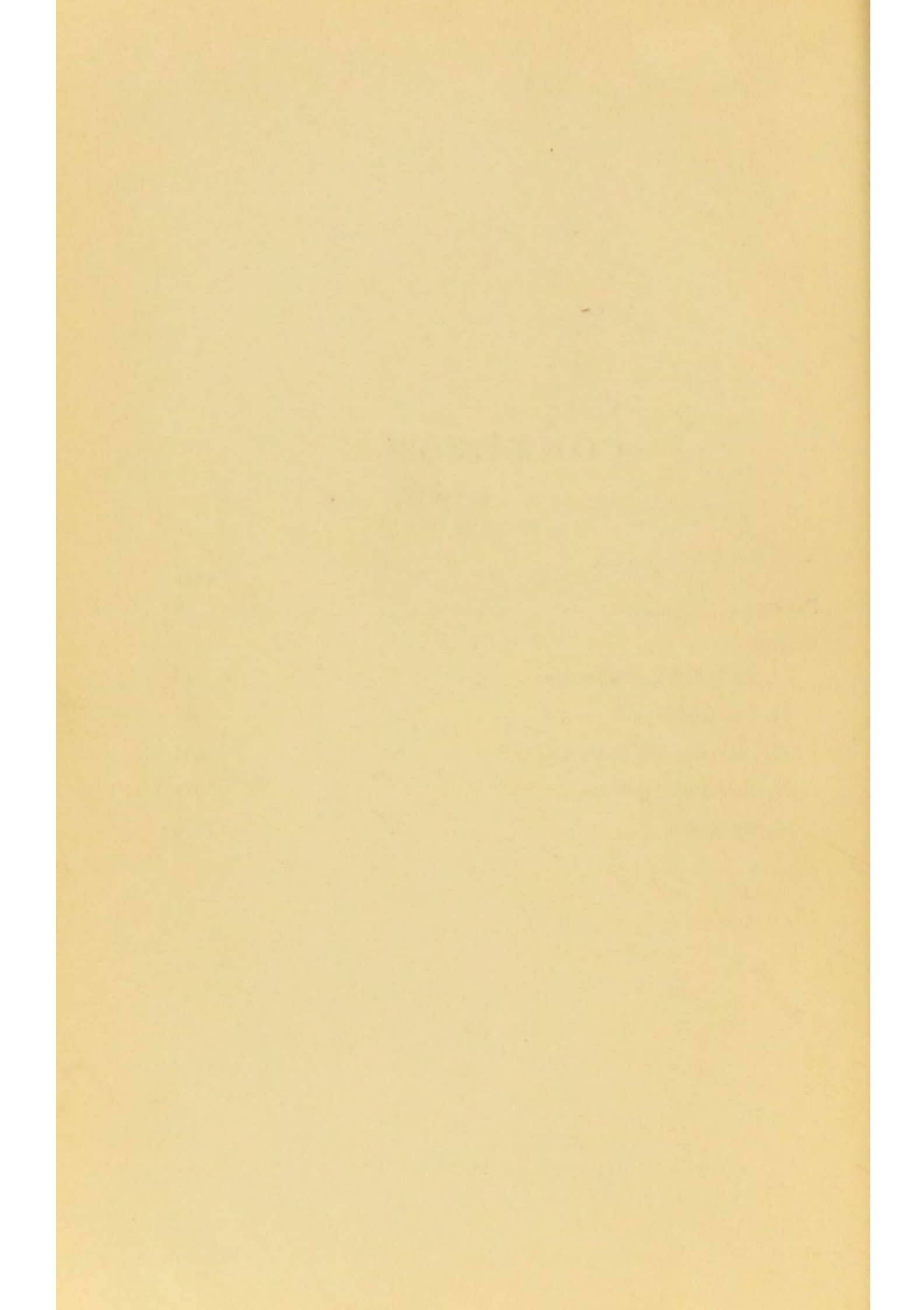


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PREFACE.

THE following sketch of Sir William Gull's life has been reprinted from the volume of his addresses published by the New Sydenham Society.

It was hoped that Sir Henry Acland would have written the memoir of his old friend, and indeed he commenced the task, but owing to failing health he was compelled to relinquish it before it was completed. Full advantage has, however, been taken of Sir Henry Acland's work.

The writer also wishes to acknowledge his indebtedness to Dr. Pye-Smith, the author of the obituary notice of Sir William Gull in the 'Guy's Hospital Reports,' of whose article he has freely made use, and to other friends whose help has made the work possible.

It has been the writer's aim to give a simple portraiture of Sir William's life and ways of acting in it, and rather to describe what manner of man an acknowledged great Physician of our day was, than to discuss the mere extent of professional knowledge which had obtained universal recognition.

T. D. ACLAND.

November 5th, 1896.



MEMOIR.

I. EARLY LIFE AND EDUCATION.

THERE is no portion of the history of men of power more interesting than that which tells how and when they first showed their strength. This interest is not lacking in Sir William Gull's early life.

William Withey Gull was born at Colchester, in the parish of St. Leonard's, on December 31st, 1816. His father, John Gull, was a barge owner and wharfinger, and was thirty-eight years old at the time of William's birth. His mother's maiden name was Elizabeth Chilver. He was the youngest of eight children, two of whom died in infancy. Of the remaining six, three were sons and three daughters.

When the boy was about four years old his father removed to Thorpe le Soken, in Essex. He was an honest, upright man, devoted to his children. His mother was a person of remarkable character, and of clear sound judgment; industrious, persevering, and possessed of great ability. Her husband looked to her for advice in every important matter. They were deeply attached to each other, and most anxious for the welfare and good education of their children. A scholarship at Christ's Hospital was offered by a friend to John Gull for his eldest son, but it was somewhat indignantly refused because, he said, none of his children should ever be dependent upon charity. He died of cholera in London in 1827, when William was ten years old, and was buried at Thorpe.

After her husband's death, Elizabeth Gull devoted herself

entirely to the bringing up of her children. She was left with very small means, but none the less were the surroundings of the home those of refinement and care. She taught her children to be self-reliant, to do everything for themselves, and to do whatever they did well; for she would say, "Whatever is worth doing is worth doing well." Thus she instilled into them habits of perseverance and industry. These early lessons from a loving mother were never forgotten, and may truly be said to have been the key-note of Sir William's success. In looking back to his childhood he would often say that his real education had been given him by his mother. To the end of his life he would quote a little nursery rhyme, learned in infancy :

"If I were a tailor, I'd make it my pride
The best of all tailors to be ;
If I were a tinker, no tinker beside
Should mend an old kettle like me."

Adding to it in later years, the more classical quotation—

"If thou dost purpose aught within thy power,
Be sure thou do it, though it be but small.
Constancy knits the bones and makes us stout."

Elizabeth Gull was an earnest Churchwoman of an old, but then not common type. On Fridays the children had fish and rice pudding for dinner; in Lent she wore black, and the Saints' days were carefully observed.

As a boy William Gull went with his sisters to a school kept by two old ladies, and he used to say that on his return home his mother never allowed him to play until he had done a certain number of rows of knitting, and he would sit on a stool and look at the clock to see how fast he could accomplish this appointed task. Thus he knitted the first pair of stockings he wore. When too old to go with his sisters to their school, he attended another in the same parish, kept by the clergyman. At this school William was a day-boy until he was fifteen, at which age he became a boarder, and continued so for two years. It was at this time that he first began to study Latin. The learning, however, that the clergyman was able to impart appears to have been very limited; and at seven-

teen William announced that he would not go any longer, as he had learned all that his master could teach him. Shortly after this he became a pupil-teacher in a school kept by Mr. Abbott at Lewes. He lived with the Abbotts, who were kind, cultivated people, as one of their family, and received such education as the school could give, and in return he helped in the teaching. He now began to study Greek, which, for the most part, he taught himself; and before long he was desired by Mr. Abbott to teach it; he was unwilling to undertake the task, feeling how little he knew, but Mr. Abbott reassured him, saying, "Directly you begin to teach you will begin to learn;" so he began to teach Greek. Whilst at Mr. Abbott's he became acquainted with the well-known botanist, Mr. Joseph Woods, and with him he used to wander over the downs at Lewes, and study the flora and fauna of Sussex.

After being with Mr. Abbott for about two years he again became unsettled, feeling that the opportunities he had of acquiring knowledge were not equal to his powers. He would in after years refer to the anxiety and distress he experienced at this period of his life, owing to the inadequate means at his disposal for satisfying the desire for knowledge, and the capacity for learning of which he felt himself to be possessed.

The influences of his early life had led him to wish to go to sea. Finding himself disappointed in the endeavour to obtain the education for which he longed, his mind reverted to this desire, but his mother would not give her consent. At this time Mr. Harrison, nephew of the Treasurer of Guy's Hospital, was rector of Beaumont, a parish adjoining Thorpe, on the estate of Guy's Hospital, to which in 1832 Elizabeth Gull had moved her home. Mr. Harrison took a kindly interest in his parishioners, and specially in William Gull's widowed mother. To him she related her trouble as to her son's desire to go to sea. Mr. Harrison then proposed that the boy should come to the rectory every other day, and with him resume his classical and other studies; and this for a year he did. On his days at home he and his sisters would row down the estuary to the sea, watching the fishermen, and

obtaining the mysterious living treasures that teem in the nets of the dredgers on all our coasts. The specimens thus obtained, as well as any others of the fauna of the district which he could collect, were carefully examined and studied with the aid of such books as he could then procure. This time was always looked back upon as one of the happiest periods of his youth, satisfying and yet kindling his longing for knowledge, and opening to him new interests and new views of life.

From the nature of these studies, and probably from his intercourse with Mr. Harrison, the thought of a sea life faded away, and the wish to study medicine became the fixed desire of his life. There appeared, however, no prospect of obtaining the means to enable him to undertake the long and necessarily expensive education that such a career would involve.

About this time Mr. Benjamin Harrison, the Treasurer of Guy's Hospital, came to stay with his nephew, the rector of Beaumont, who, having become deeply interested in young Gull, spoke to him about the boy, and took him to see Gull's mother. Being satisfied that he was possessed of unusual ability, Mr. Harrison invited him to go to Guy's, and in September, 1837, the autumn before he was twenty-one, William Gull left his home and entered upon his life's work.

Formerly students of medicine went to the hospital chiefly as "apprentices." By the Treasurer's kindness Gull shared all the advantages of an apprentice; he gave him two rooms in the hospital with £50 a year, and every opportunity of study.

"I can help you if you will help yourself," was Mr. Harrison's wise saying, and this advice Gull determined to act upon. On one occasion, anxious to make some return to the Treasurer for his friendship and kindness Gull resolved to try for every prize which could be competed for in the hospital in the course of that year. He succeeded in gaining every one.

During the first year of his residence at Guy's, together with his other studies he carried on his own education in Greek, Latin, and Mathematics, and in 1838 he matriculated at the University of London, then only recently founded.

In 1841 he took his M.B. degree, and gained honours in Physiology, Comparative Anatomy, Medicine, and Surgery.

Throughout his early career at Guy's, he owed much not only to the Treasurer, who through life continued one of his firmest friends, but also to Mr. Stocker, then apothecary to the hospital, with whom he was closely associated in his work, and who aided him in every way in his power. He also received from various members of the medical staff, much kind encouragement and help, which were never afterwards forgotten. Amongst these friends may be specially mentioned Dr. Babington, whose memory Sir William always cherished with feelings of deep admiration and gratitude.

In 1842 Gull was appointed to teach *Materia Medica* at Guy's Hospital, and the Treasurer gave him a small house in King Street, with a salary of £100 a year.

In 1843 he was appointed Lecturer on Natural Philosophy. He also held at this time the post of Medical Tutor at Guy's, and, in the absence of the staff, shared with Mr. Stocker the care of the patients in the hospital. In the same year he was appointed Medical Superintendent of the wards for lunatics, and it was largely due to his influence that these cases shortly ceased to be treated at the hospital, and the wards were converted to their present use.

Through all these years Gull continued to observe, to study, to practise, and to teach, without intermission. His various duties gave him unrivalled opportunities for becoming acquainted with every form and variety of disease, and of these he availed himself to the full. His life, as he himself used to say, was at this time lived within the wards of the hospital, and at all hours of the day, and often at night also, he might be found by some bedside seeking patiently to unravel the mysteries of disease.

In 1846 he took his M.D. degree at the University of London, and gained the gold medal, the highest honour in medicine which the University can confer.

Notwithstanding his great ability, he had at this early period of his career a remarkable lack of confidence in

his own powers, as is shown by the following incident. During the examination he was about to leave the room, saying that he knew nothing of the case proposed for comment; fortunately a friend persuaded him to return, with the result that the thesis he then wrote gained for him his Doctor's degree and the gold medal.

From 1846 to 1856 Dr. Gull held the post of Lecturer on Physiology and Comparative Anatomy at Guy's.

In 1847 he was elected Fullerian Professor of Physiology at the Royal Institution of Great Britain, a post which he held for two years, during which time he formed a close and intimate friendship with Michael Faraday, at that time Fallerian Professor of Chemistry.

In 1848 he was elected a Fellow of the Royal College of Physicians. He was also appointed Resident Physician at Guy's, and came to reside in the house now occupied by the Chaplain. And here his preparatory training was brought to a close, his full professional habits were formed, and his life responsibilities fairly undertaken.

Dr. Gull married in 1848 Susan Ann, daughter of Colonel Lacy, of Carlisle. Of several children two only survive, a son and a daughter.

II. PROFESSIONAL LIFE.

WHEN, after taking his M.B. degree in 1841, Gull became medical tutor at Guy's, his professional career had fairly begun.

The secret of his success as a physician is well summed up in the words of the inscription to his memory on the tablet in the Chapel at Guy's Hospital;—Instinctive insight, unwearied patience, exact method, ready resources, and above all hearty sympathy. Each and all of these brought their influence to bear on his work and on his life, and made them what they were.

"If I am anything," he once said late in life, when some speech he had made had been misunderstood, "I am a clinical physician." That remark was the key to the life of a powerful, thoughtful, cultivated man, whose chief interest lay in the treatment of disease and the alleviation of suffering, and who brought into play the keenest power of observation, based on scientific scrutiny of the minutest facts which could affect the question before him.

He had a retentive memory and vast knowledge,—scientific, clinical, and pathological,—acquired by many years' residence at Guy's, and constant study at the bedside of the sick. Added to this he had a peculiar capacity for appreciating each detail of the case before him at its proper worth; not being led away by symptoms which, though prominent, might be of little importance, and finding not unfrequently the key to the solution of a problem in some circumstance or detail which had attracted but little attention.

If a case was not clear to him, he did not hesitate to say, "I do not know." He writes: "Acquaint yourself with the causes that have led up to the disease. Don't guess at them, but know them through and through if you can; and if you do not know them, know that you do not, and still inquire. 'Cannot' is a word for the idle,

the indifferent, the self-satisfied, but it is not admissible in science. 'I do not know' is manly if it does not stop there." He acted on Newton's words, which he often quoted: "If I do not understand a thing, I keep it before me and I wait." He never wearied of inculcating the principle that it is more important to study than to explain the phenomena of disease. One of his favourite sayings was, "Fools and savages explain; wise men investigate."

It has been said of Sir William by one of his most distinguished contemporaries: "Science and sympathy were in complete agreement in him." He possessed in a marked degree those characteristics which inspire trust and exercise a powerful influence over others; and to a profound knowledge of his profession, Sir William added a profound knowledge of mankind.

A passage from the 'Guy's Hospital Reports'¹ admirably describes him.

"His striking presence, his searching scrutiny, his minute and deliberate examination of every case, and the few carefully and slowly uttered words in which he delivered his judgment, sometimes with epigrammatic pungency, often with encouragement, and never without sympathy—all combined to give him an almost unequalled ascendancy over his patients. His manner was his own, and sprang naturally from the habit of his mind. It was just the same in a hospital ward as in a palace, and the poorest of his patients leaned on his oracular statements, sometimes with hope and sometimes with resignation, but always with comfort; while the richest were taught to restrain loquacity, to answer truthfully, and to follow out directions implicitly.

"The merit of Gull, as of Stokes, Oppolzer, Trousseau, and other great physicians, was that he added to the methodical investigation of facts the insight and judgment without which a man may be an admirable clinical teacher, and yet entirely fail in the diagnosis of really difficult cases, in the estimation of probabilities, and in wise therapeutics. For practical medicine is an art; and when all the facts which the most elaborate examination of the patient's actual state can supply have been brought in due order before us,

¹ Vol. xlvii.

and the seat and nature of the anatomical lesion has been accurately determined, there still remains the due appreciation of its significance in that particular case, of the probabilities of its future progress, and of the most suitable methods of meeting it. Indeed, in many cases the result of physical diagnosis is little more than negative, and we have to depend entirely upon the same half-unconscious use of experience in combination with slight and almost indescribable indications, which is depended upon in critical moments by the physician no less than by the engineer, the seaman, the statesman, and the general.

"While not inferior to the best modern teachers in accuracy and thoroughness of searching for physical signs of disease, Gull added to this the vision and the faculty which depends upon long and well-used experience, combined with a certain happy mixture of boldness and caution like that which decides a doubtful field of battle."

There was no detail which concerned the comfort or well-being of the patient which was too minute for his attention. He knew the relief which might be gained by change of posture, by altering the position of a limb, and not only saw that it was done, but frequently did it himself. His ready tact in dealing with the whims and sufferings of the sick often called forth more admiration, from patients and friends, than even the exercise of his professional skill. In dealing with disease he never lost sight of the personality of the patient; each case, he would say, should be considered as "the disease, + the person."

Visiting one day an hysterical lady whom he had seen previously, and who was causing great anxiety to her friends and medical attendant, he reassured them, saying, "There is nothing really wrong; Mrs. X. is herself multiplied by four." An over-anxious patient was encouraged and cheered by being told that he was "a healthy man out of health."

In many instances he did more for the cure of those under his care by saying little and doing nothing than could have been effected by much treatment.

On one occasion a lady suffering from an obscure skin disease was brought to him for an opinion. He examined

her, picked a minute fragment of cantharides from one of the sores, placed it under the microscope and showed it to her, with the assurance that she would get well. He did nothing more, and the cure was complete.

On another occasion at a consultation 200 miles from London, he refused, to the dissatisfaction of his colleague, to write a prescription, because, he said, the patient only required the encouragement of being convinced that he did not need drugs for his recovery.

Every consideration that did not relate to "*what is best for the patient*" was dismissed. This was Sir William's professional axiom. How hard it is fully to act on this seeming truism amid all the complexities of human life—moral, physical, social, financial—this is not the time or place to discuss. But the carrying of it out not unfrequently involved him in difficulty, and led occasionally to his being misunderstood. The story already told of his travelling to the north of England and returning without writing a prescription for his patient, may be instanced; and he would frequently refuse to repeat a visit or consultation on the ground that he wished the sufferer to feel that it was unnecessary.

The severe illness of H.R.H. the Prince of Wales from typhoid fever in 1871, gave Sir William an exceptional opportunity for the exercise of his varied powers as a physician; and the following passage which appeared in the '*Times*,' December 18th of the same year, is of interest. It not only marks the estimation in which his services were held by those who watched by the sick bed at Sandringham, but it gives a striking illustration of that minute care in detail which was so characteristic of his treatment of the sick. "In Dr. Gull were combined energy that never tired, watchfulness that never flagged; nursing so tender, ministry so minute, that in his functions he seemed to combine the duties of physician, dresser, dispenser, valet, nurse,—now arguing with the sick man in his delirium so softly and pleasantly that the parched lips opened to take the scanty nourishment on which depended the reserves of strength for the deadly fight when all else failed, now lifting the wasted body from bed to bed,

now washing the worn frame with vinegar, with ever ready eye and ear and finger to mark any change and phase, to watch face and heart and pulse, and passing at times twelve or fourteen hours at that bedside. And when these hours were over, or while they were going on—what a task for the physician!—to soothe with kindest and yet not too hopeful words her whose trial was indeed great to bear, to give counsel against despair, and yet not to justify confidence.” After the recovery of the Prince, Sir William remarked, “He was as well treated and nursed as if he had been a patient in Guy’s Hospital.”

As a clinical teacher (reference may again be made to the memorial inscription) “few have excelled him in the depth and accuracy of his knowledge, in the lucidity and terseness of his language, in the effect produced upon his hearers.”

His influence over his pupils was great, not only from the extent of his knowledge and the originality of his views, but also from his personal character. He seemed to feel instinctively what was the condition of the student mind,—its wants, and its capabilities; and how its faculties should be nourished and augmented. He presupposed very little knowledge on the part of the students, and he was clear, precise, and suggestive.

He endeavoured to cultivate in them the same painstaking habit of mind, the same care for detail, which so remarkably distinguished the character of his own work. He writes, ¹“The student of medicine can no more hope to advance in the mastery of his subject with a loose and careless mind than the student of mathematics. If the laws of abstract truth require such rigid precision from those who study them, we cannot believe the laws of nature require less. On the contrary, they would seem to require more; for the facts are obscure, the means of inquiry imperfect, and in every exercise of the mind there are peculiar facilities to err.”

At the same time he sought to impress upon them the need of broad views and high ideals: ¹“The scope of Medicine is so wide as to give exercise to all the faculties

¹ ‘Study of Medicine.’

of the mind, and it borrows from the stores of almost every form of human knowledge—it is an epitome of science ; its operations are so benevolent, that our Divine Master Himself assumed its offices as a type of His spiritual ministrations ; it has in it the very quality of mercy, and—

‘Is twice bless’d ;
It blesses him that gives, and him that takes.’

“ Medicine holds a foremost rank amongst the natural sciences, and can only reach its full development as they advance to perfection. It is the centre to which some of their brightest rays converge ; for where beside can we look for such illustrations of the highest expression of natural laws as are found in the structure of the living body ? It has been well said :

‘Man is one world, and hath
Another to attend him.’

“ The first principle for the student to recognise, and one to which in after life he will often have to recur, is that his work lies not in the fluctuating balance of men’s opinion, but with the unchangeable facts of nature.”

The following passages, although not primarily addressed to students, further illustrate Sir William’s views on this point :

¹ “ The distinction of medicine, as a study, lies in its comprehensiveness. The student of physical science admits that he has to deal with but one half of that truth which is expressed in man. The student of medicine cannot so limit himself. The facts of sensation, whether pleasurable or painful ; the influence of the mental emotions, whether exciting or depressing ; the dominion of the conscience, approving or disapproving, are for him facts due to the operation of laws into which he must inquire. Looked at from the point of view which the student of medicine occupies, these higher facts of man’s nature are as essentially parts of one law, and control and modify human existence equally with those lower conditions with which physic alone is concerned. This constitutes the unspeakable difficulty which every student of medicine must feel in the present

¹ Harveian Oration.

imperfect state of knowledge. To hold the mind in an equal balance as it passes from the contemplation of the lower facts of our existence to those which characterise the highest claims of our humanity, so as neither to degrade the one nor neglect the other, is one of the highest attainments. What eye is single enough to survey the range of life from the material atoms which build our structures, to those 'mighty hopes which make us men,' without faltering in the vision, or without confusion of the objects? "

¹ "I believe that, as men occupied with the study and treatment of disease, we cannot have too strong a conviction that the problems presented to us are physical problems, which perhaps we may never solve, but still admitting of solution only in one way, namely, by regarding them as part of an unbroken series, running up from the lowest elementary conditions of matter to the highest composition of organic structure."

At all times he strove to guard those he taught against a narrow specialism; he would say, "there are no *parts* in the body, but only different *localities*," and as is well known he regarded chronic Bright's disease as an affection of the whole arterial system, not one of the kidneys only. Of a specimen of contracted kidneys exhibited by Dr. Bright as a cause of albuminuria he used to say, "Bright observed the heart and kidneys, but he forgot the man between; the whole man should have been included in the specimen."

He urged the cultivation of a docile spirit, as essential to scientific study.

² "If the first lesson be patience, . . . the next lesson is docility, a readiness to learn at any source, . . . wherever the facts lie hid. . . . Who could have believed that the particles of a dew-drop and the masses of a planet are moulded and controlled by the same force; that the introduction into the human body of a small particle of matter from a cow's udder might be the means of saving thousands of human lives? We learn from these and innumerable similar instances that the highest truths lie hid in the simplest facts; that, unlike human proclamations,

¹ Hunterian Oration.

² 'Study of Medicine.'

nature's teachings are not by sound of trumpet, but often in the stillest voice, by indirect hints and obscure suggestions, but always with the unequalled advantage that they are unequivocal, constant, and uniform. The difficulty, however, is in maintaining the docile spirit of which I speak, in preventing ourselves from assuming a knowledge we have not; in not hastily coming to a conclusion without evidence, and not resting content in our ignorance with a fool's satisfaction that no good would come of more knowledge if we had it."

He encouraged his students to educate themselves. ¹ "Medicine," he writes, "is essentially a learned profession. Its literature is ancient, and connects it with the most learned periods of antiquity; and its terminology continues to be Greek or Latin. You cannot name a part of the body, and scarcely a disease, without the use of a classical term. Every structure bears upon it the impress of learning, and is a silent appeal to the student to cultivate an acquaintance with the sources from which the nomenclature of his profession is derived."

An old student gives the following interesting reminiscences.

"It was a pleasure to work for him; he would make the less ardent student feel a personal interest in his work, and a responsibility for the welfare of the patients. For though often he would talk freely about a patient, yet he never forgot that it was a human being with human ties that had to be looked after. I well remember his looking sadly at a policeman, moribund of typhoid fever. The man had been keeping at his work long after he ought to have given in; but he had a sickly wife and family who needed his full earnings. Gull turned round and said to the students, 'More heroism there, in working with a fever on you, than in rushing into the breach.'

"He was bold in diagnosis, and often astonished men by the minute accuracy of his prophecies. Of course, like all men he made mistakes, but he was able to take care of himself, and I shall not forget one instance of this by which I suffered. While ward clerk for him, a

¹ 'Study of Medicine.'

child was brought into the hospital, and Dr. Gull, after a short examination said, 'Measles; keep the little one warm.' The next day it was certain that the child had smallpox, and it was sent out of the hospital. I told everyone that I had got Gull beyond escape, and many students came to see how it would end. When he got to the empty bed, Dr. Gull said, 'Where is our little patient?' I with wicked pleasure said, 'In the smallpox hospital.' He said nothing but passed on, then at the next bed stopped and quietly began thus: 'You know, gentlemen, that I have over and over again pointed out to you that the diagnosis between measles, scarlet fever, and smallpox could be made from a correct history of the development of the symptoms; in the case of this child I trusted to S—; I thought I *could* trust him, but I was mistaken. I am sorry!'

"The way in which he treated *men*, not diseases, was certainly one of his strongest points. 'Never forget that it is not a pneumonia, but a pneumonic man who is your patient. Not a typhoid fever, but a typhoid man.'

"He left his impress on the students who were under him; they felt that they could never know enough of all things to be physicians. He encouraged men to study the Arts, to teach themselves German, and not to neglect the courtesies of life.

"The Sunday morning walks round the wards were full of interests of all sorts, and in the end, on more than one occasion he took me by the arm, and quietly pushing me toward the chapel, said: 'I have taught you all I can this morning, go and learn something there; if from nothing else, from the statue in the chapel, and tell me what the patient helped by Guy was suffering from.'"

A favourite piece of advice to his students was, "never disregard what a mother says;" he knew the mother's instinct, and her perception, quickened by love, would make her a keen observer.

As a guide of conduct in the difficulties of medical practice, he often quoted George Herbert's words:

"Who when he is to treat,
With sick folk, women, those whom passions sway,
Allows for that, and keeps his constant way."

¹“As a lecturer Gull was careful, instructive, and interesting, full of impressive aphorisms and ripe conclusions, using apt and striking metaphors, and enforcing what he taught by a dignified, slow, and careful reiteration which never wearied, and which it required more than average carelessness to forget.”

It has been said that “he seldom delivered a lecture which was not remarkable for some phrase full of wise teaching, which from its point and conciseness became almost a proverb amongst his pupils.” His lectures were well attended, and listened to with marked interest.

In 1874, when he gave the introductory lecture at Guy’s, so numerous an audience assembled to hear him that the theatre could not accommodate them, and it was found necessary to adjourn to a large public room at the London Bridge Hotel.

Among his public addresses and orations, his Inaugural addresses at Guy’s in 1855 and 1874, his address at the meeting of the British Medical Association at Oxford in 1868, the Harveian Oration, delivered in 1870, and his address as President of the Clinical Society in 1872, may be singled out as brilliant examples of his power as an orator, not only for the breadth and depth of their views, but also for the eloquence of the language in which they are clothed. To thoroughly understand his addresses they should be read in full, for neither extracts nor critical summaries alone, reveal the true mind of the man.

¹“Sir William was generally supposed to be a sceptic as to therapeutics, and his treatment to be what some people call ‘expectant,’ and others ‘do-nothing.’ As in most cases of general reputation, the conclusion, so far as it was incorrect, was in great measure due to the very man whom it wronged. If a physician honestly believes that medicine is powerless over disease, he need not relinquish his practice; for it is often well worth a patient’s while to ascertain whether he is really ill or not, and what is the nature of his complaint: he may often wisely pay for the knowledge of what is likely to happen, and what cannot be cured may often be prevented.

¹ ‘Guy’s Hospital Reports.’

But although negative practice may still be followed for the sake of diagnosis and prognosis and prophylaxis, yet an honest disbeliever in therapeutics could never prescribe a potion or a pill without losing his self-respect. As a matter of fact, Sir William Gull often prescribed no drugs whatever, and his prescriptions, when he wrote them, were of extreme simplicity. . . .

"He was never tired of exposing the absurdity of much of the traditional polypharmacy. He would show how much harm may be done by the vigorous treating of half-understood diseases, and he once said that if every drug in the world were abolished a physician would still be a useful member of society. To appreciate his position, we must remember something of the unquestioning faith in bleeding and blistering, purging and physicking, which was still held when Gull was a student. . . .

"He once said to the present writer, after his retirement from practice, 'One thing I am thankful Jenner and I have together succeeded in doing. We have disabused the public of the belief that doctoring consists in drenching them with nauseous drugs.' Nevertheless, those who knew Gull's practice, either in the hospital or in private, are well aware that his scepticism was perfectly reasonable, and his therapeutical faith all the stronger because it was discriminating.

"He often did not do himself justice. His paper on the treatment of rheumatic fever was headed 'Cases of Acute Rheumatism treated by Mint Water.' But really his treatment of this disorder was most thorough and efficient. He had the patient's bed screened from the rest of the ward, his friends were not allowed to visit him, he was not suffered to be moved, and no examination of the heart was made beyond what could be carried out without disturbing him. He was put on low diet, with plenty of barley water to drink, the inflamed joints were carefully wrapped in cotton wool and protected with cradles, and he always had enough opium at night to secure sleep and prevent painful startings of the limbs."

He never hesitated to prescribe the medicines of which the effects had been proved by facts well observed; but he

endeavoured, above all things, to study the natural history of disease, uncomplicated by the action of unnecessary drugs, and he resented all useless interference with the course of nature. He would say of meddling poly-pharmacy—

“Fools rush in, where angels fear to tread.”

His treatment of disease on rational principles rather than by drugs did not always meet with grateful recognition. A patient who had passed successfully through a severe attack of typhoid fever without medicine, in Guy's Hospital, was congratulated by Dr. Gull on his recovery. “Yes,” replied the man, “and no thanks to you either.”

He sought to teach his students not to think they could cure disease. “The best of all remedies,” he would say, “is a warm bed.” “I can tell you something of how you get ill, but I cannot tell you how you get well.” “Healing is accomplished

‘By an operation more divine
Than tongue or pen can give expression to.’”

“Remedies act best when there is a tendency to get well.”

Sir William, it has been well said, “has left the mark of his impressive thought on the medicine of our day, and has moulded the shape of our theories, conclusions, and practice, to an extent which can only be measured by a wide survey and a subtle insight into the changes which, during the last forty years, have altered the whole character of our medical faith.”

He held that the highest work of a physician should be rather the *prevention* than the cure of disease; and the wide scope of preventive medicine, with all its possibilities for the future, was a subject that profoundly interested him. He writes:—

¹“As health is our object, or as near an approach to it as circumstances admit, *hygiene* and *therapeutics* claim the last and highest place in our thoughts. Happily, at this day, hygiene has gained strength enough to maintain an independent position as a science. To know and counteract

¹ ‘Medicine in Modern Times.’

the cause of diseases before they become effective is evidently the triumph of our art ; but it will be long before mankind will be wise enough to accept the aid we could give in this direction. Ignorance of the laws of health and intemperance of all kinds are too powerful for us. Still we shall continue to wage an undying crusade, and truly we may congratulate ourselves that no crusade ever called forth more able and devoted warriors than are thus engaged.

“ Nothing can stimulate science more to the investigation of therapeutics than the feeling that the diseases calling for treatment prevail in spite of our best efforts to prevent them. Where hygiene fails, properly commences the work of therapeutics ; but it is painful to find ourselves occupied in making feeble and often useless efforts to combat the effects of a poison which might perhaps have been stamped out in its beginnings.”

And again, ¹“ Medicine yet owes it to society to demonstrate more fully those secondary conditions whereby a healthy mental activity may be secured and advanced ; for of nothing can we be more certain than that the laws of life, in their unimpeded operation, culminate in the advancing perfection of man—corporeally, intellectually, and morally. But the operation of these laws depends upon common things. Whilst the ignorant have recourse to the supernatural, science asserts that everything, if not traced, is yet traceable to its antecedents ; and thus, as the handmaid of religion, proves that what a man soweth, that shall he also reap.”

At a meeting of the Charity Organisation Society, for promoting the establishment of Provident Dispensaries, at which he spoke, he emphasised the importance of disabusing the poor of their belief in drugs, and of inculcating upon them cleanly habits and healthy ways. “ There is a belief,” he said, “ amongst the poor that disease comes by Providence and is cured by drugs ;” adding, “ whilst you put up a public house at one end of your street and a provident dispensary at the other, how can you expect your people to be healthy ? ”

Notwithstanding the pressure of Sir William's private

¹ ‘ Harveian Oration . ’

and public work, he found time to continue his investigations into the causes and nature of disease. His scientific papers, lectures, and addresses, will hold their place in medical literature, for they relate to one of the most important epochs in the whole history of medicine. As these papers were published last year by this Society it is not necessary to enumerate them here. One of his earliest and most important works was his report upon Cholera made conjointly with Dr. Baly for the College of Physicians in 1849. Special mention should also be made of his paper on "A Cretinoid Condition in Adult Women," almost the last he wrote. It bears evidence of the keenness of his perception, and the accuracy of his pathological views, expressed about a not uncommon disease which had hitherto escaped notice. ¹ "It is remarkable," writes one of his colleagues, "that a disease which no one had recognised before its existence and characters were established by Gull, has since been found to exist not only in this country and on the Continent, but in America and Australia. Moreover, he not only caught its characteristic *facies*, and recognised its importance, but in the name under which he described it, he indicated its true pathological relations, doubtful and obscure for some time, but by recent investigation established beyond all reasonable doubt."

It is also interesting to note that ¹ "long before Wunderlich had shown the characteristic curves of temperature in fever Gull had learnt the pathological lesson now everywhere recognised, that fever is a process, with a beginning, an ingravescent stage, an acme, and a gradual subsidence. He used to enforce this doctrine in his lectures by drawing curves on the blackboard,—a long, gentle, and irregular one for typhoid fever, a shorter, more abrupt, and more regular curve for typhus and for scarlet fever."

"On the whole," the same writer adds, "it may be said that scarcely any living physician has made so many, so important, and so varied original observations."

Sir William fully appreciated the importance of the collective investigation of disease, and did what he could to advance this branch of medical study. He writes:

¹ 'Guy's Hospital Reports.'

¹ "Man individually is but a unit in a large account, a living atom in the great body of human social life, and so to study him is a subject demanding our thought and work. By looking at large numbers, facts before unnoticeable become proportionably magnified. Causes affecting health and shortening life may be inappreciable in the individual, but sufficiently obvious when their effect is multiplied a thousandfold. If the conditions of society render us liable to many diseases, they in return enable us to establish the general laws of life and health, a knowledge of which soon becomes a distributive blessing."

In 1884 he attended the Medical Congress at Copenhagen as representative of the International Society for the Collective Investigation of Disease. The following quotation, taken from his address on this occasion, shows the gain he anticipated from this method of combined study.

"In an international collective investigation the ground widens very much, not only from the different intellectual characters of its working members, but also from the greater variety under which disease presents itself.

"The first gain, no doubt, will be from the intercourse and reaction of different national modes of thought with and upon each other. It need not be said that the ways in which any subject may be viewed do not depend upon the subject itself, but upon the varied capacity of the minds brought into relation to it. Minds evolved during ages under special local and national conditions, and educated in lines of their own, cannot fail to give new direction and shape to the questions proposed for solution.

"Each national mind will feel a different mental necessity. . . . Each nationality produces its own scientific school, and not least in respect of the science of medicine. One nationality is more distinguished by its powers of analysis, another by its power of synthesis; one is critical, another historical; one characteristically anatomical, another physiological. Even if this occurred to only a limited degree there must follow an interchange and fertilisation of ideas. And let no one believe that this is a dream. We have reached no more than the threshold of intellectual evolution."

¹ 'Study of Medicine.'

He was one of the chief promoters of the Association for the Advancement of Medicine by Research, and it is with the view of helping forward this important work, in which he took so great an interest, that his son, Sir Cameron Gull, has founded a scholarship at Guy's Hospital, bearing his name.

He took an active part in the controversy on vivisection, and his evidence before the House of Lords was important and judicial. In an article on this subject, written for the 'Nineteenth Century,' he sums up his convictions. "There is no doubt that physiological experiments are useful, useful for animals as well as for man; . . . they are therefore justifiable. . . . To the accusation of cruelty, physiologists may fairly reply, supported by all past experience, that there is nothing so cruel as ignorance."

Believing as he did that good nursing was one of the most important factors in recovery from sickness, Sir William took deep interest in every effort to promote the better training and welfare of nurses. He warmly supported the change at Guy's from the old *régime* of nursing to the new, although he deeply regretted the conflict of opinion with some of his colleagues into which his action in this matter brought him. He fully appreciated the arduous duties of a nurse, and held in honour those who from high motives devoted their lives to this humane work. "Nursing," he said, "has sometimes been made a trade, sometimes a profession; it will never be what it should be until it is made a religion."

He never would adopt a course because it was popular, unless at the same time he believed it to be right. His courage was equal to his sense of duty. On the occasion of his receiving the LL.D. degree at Cambridge, when, owing to the evidence which he had recently given upon the trial of a nurse, charged, as he believed unjustly, with manslaughter, he was received with hisses and groans, he refused to allow the Vice-Chancellor to put a stop to the uproar, and stood calmly until it had subsided. He said afterwards he felt it to be the greatest honour that had ever been done him, and however unpopular at the moment, he never doubted that the attitude he had assumed at the trial was right.

At all times he endeavoured to raise the standard of his

profession,—moral, scientific, and social. "There is," he writes, "probably no human work which daily confers greater good upon society than does ours; and when we consider that from the ranks of our profession the chief cultivators of modern science have sprung, whether we speak of botany, hygiene, or social science, we may feel justifiable pride, and be encouraged, in spite of all failures, to go on, assured that our future must be one of ever-increasing usefulness and honour."

Sir William Gull took an important part in the public work of his day. From 1856 to 1889 he served on the Senate of the University of London. He was the first medical graduate nominated to fill that position. His success in its examinations had added largely to the reputation which secured his early advancement at Guy's, and by his later successes he could be counted among the first of those by whose career the value of the M.D. degree would be illustrated.

From 1871 to 1883 he represented the Crown, and from 1886 to 1887 he represented the University of London on the General Medical Council. It has been said that "in administrative questions he did not lend himself to details as he did in all his clinical work;" but his judgment was sound, and his influence always in favour of advance and improvement. He was not a frequent speaker, but when he spoke his words were always to the purpose, "he was listened to with attention and his opinion carried great weight."

In 1871 and 1872 he was President of the Clinical Society. Among other public works, the part he took in the promotion of the scheme for the Brown Institute should not be forgotten. No one foresaw more clearly than he the value of Comparative Pathology, or realised more fully the gain to man of enlarging the confines of the study of medicine from the narrow limits of the sick chamber, or post-mortem room, to the study of all living things.

Dr. Gull was appointed Assistant Physician to Guy's Hospital in 1851. In 1858 he became full Physician, and having retired from his work at the Hospital in 1868, he was in 1871 made Consulting Physician. He was appointed

Lecturer on Medicine at Guy's in 1856, together with Dr. Owen Rees, and he held this post until 1867.

In 1858 he was elected a Fellow of the Royal Society, and was for many years a member of the Council. He received the honorary degree of D.C.L. of Oxon. in 1868; of LL.D. of Cambridge in 1880; of LL.D. of Edinburgh in 1884, and in 1872 he was created a baronet, in recognition of his services during the severe illness of H.R.H. the Prince of Wales in 1871. He was at the same time appointed Physician to the Prince of Wales, and subsequently Physician Extraordinary, and latterly Physician in Ordinary to Her Majesty, Queen Victoria.

¹ "Few men have practised a lucrative profession with less eagerness to grasp at its pecuniary rewards. He kept up the honourable standard of generosity to poor patients, which has been handed down from Mead and Heberden; and with a liberality which is less common, he showed no jealousy of younger men sharing in his good fortune. Not one, but five or six of those who were rising in the profession, owed much of their success to his help."

This short memoir is written, not as a review or criticism of the professional works of their author, but rather as a sketch of the personal character of the man who wrote them, and who occupied for full forty years an important place in the eyes of the Public, of men of Science, and of members of the Medical profession. Few men of eminence have during their lifetime been more freely criticised. This arose partly from the novelty of some of his opinions, and partly from a certain prejudice against his somewhat imperious manner, and his seeming dogmatism in regard to his scientific inquiries and his therapeutical conclusions.

But here this account of his professional life must cease, adding once more that he seemed in all the varied circumstances in which he was placed, as a man of science or as a physician, to be endued with a strange power and a strong will; he strove his best, according to his belief, from his childhood to his grave.

¹ 'Proceedings of the Royal Society,' Obituary Notice.

III. CHARACTER AND DAILY LIFE.

THE love of his early days continued with Sir William all through life. He never wearied of recalling their happy memories. His deep affection for his mother, his admiration of her character, and his love for the simple life and pursuits of his childhood's home, remained always unchanged.

His admiring wonder of the works of Nature, first excited as he studied the lowest forms of life in the water-butt in his mother's garden, in his wanderings by the sea-shore, or, in the various creatures dredged up, on the many expeditions in his father's boats, continued undiminished throughout his long and active career, and was a constant source of relaxation to him from his professional work. Even the marvel of a tadpole was always fresh, teaching new lessons and opening out new avenues of thought.

In London the sparrows were his teachers and his friends. He would watch their habits and ways with the greatest interest, and would note their respective positions when roosting, deducing from the similarity of these night by night, and the quarrelling that took place over the settlement, the probable fact that each sparrow had its own particular resting place.

For every subject of interest he had a ready quotation, and he would add after contemplation of his little friends, Shakespeare's words :

"There's a special providence in the fall of a sparrow."

His early rambles in the pursuit of botany over the hills at Lewes, under the helpful guidance of Mr. Joseph Woods, were recalled again and again, and in passing by train he would often point out the old favourite haunts.

His love of nature was intense—it was an entire *devotion*. On his holidays there was hardly a walk but some insect or plant was brought home for observation, study, and reflection.

In the daily rambles, being struck by some beauty of nature, he would return day after day to the same spot. A memorable tuft of heather, a mass of bloom, was thus visited by him for more than a week. "The 'burning bush'—burning with life," he said, as he stood before it in silent wonder and contemplation.

A wayside flower, a coloured moss, a tiny insect, would move him to the depth of his being.

"To me the meanest flower that blows can give
Thoughts that do often lie too deep for tears,"

was to him a reality, and not a mere form of words.

During his last illness he would drive considerable distances to see or gather some favourite flower or plant; thus the great horned poppy, the "wayfarers'" tree, or a patch of sea-kale growing on the shore near Eastbourne, was the goal of many an afternoon's excursion.

Nature was truly to him the revelation of God. He was never tired of studying, observing, humbly admiring, almost worshipping, any living thing. He writes, "What bright and convincing lessons of theology might man (would he but open his eyes) read in his own person—that microcosm of divine art, where, as in the sentence of a divine epitome he might trace in every lineament or member, the finger and authorship of the Godhead!"

He would quote from Newton: "The main business of natural philosophy is to argue from phenomena without feigning hypotheses, and to deduce causes from effects, till we come to the *very first cause, which certainly is not mechanical.*" And again from Milton:

"Oh, Adam! One almighty is, from whom
All things proceed, and up to Him return,
If not depraved from good; created all
Such to perfection, *one first matter all.*"

The former passage, marked in his copy of the "Treatise on Optics" many years before, seemed to impress itself more and more upon him, and was frequently on his lips during the last year or two of his life.

In the contemplation of the perfection of God's work and power in nature the attitude of his mind was the humblest and most reverent; "I am but a child, I know nothing," he would say as he turned from some fresh revelation of wonder or beauty; and he would add, "Except ye become as little children." He often repeated Chaucer's words,

"For every mortal mannes power nys
But lyk a bladder ful of wynd, i-wis;
For with a nedeles poynt, whan it is blowe,
May al the bost¹ of it be layd ful lowe."

His love of nature extended to all created things. The study of the nervous system of a caterpillar or slug stirred in him the deepest admiration. "O all ye works of the Lord, bless ye the Lord,"—"but," he added, "your Benedicite is too narrow; we must put in 'all ye caterpillars and slugs,—all ye creeping things,—bless ye the Lord.'"

"He prayeth best who loveth best
All things both great and small;
For the dear God who loveth us,
He made and loveth all."

Sir William had an immense capacity for work, and the love of it for its own sake was a remarkable trait in his character. He insisted that work is an *essential condition* of life; the advantage of wealth, he would say, was not that it excused a man from the necessity of work, but that it left him free to choose what should be its direction and its aim.

On one occasion a young lady of high position being brought to him for advice, he said to her, "you must earn your own living and then you will be well!"

"True happiness," he would say, "consists in the exercise of the faculties upon their proper objects."

He had a great dislike to the word *pastime*; all amusements, he contended, should be for *re-creation*. A frequently repeated maxim was that "rest is change of employment and thought, not cessation."

One of his favourite poems, and one most often quoted,

¹ Boast.

was George Herbert's 'Elixir,' "FOR THY SAKE." This, he held, gave to work its true dignity, its object, and its purpose.

"This is the famous stone
That turneth all to gold

.

A servant with this clause
Makes drudgery divine ;
Who sweeps a room as for Thy laws
Makes that and the action fine."

Many were the quotations on this favourite subject, gathered from all sources, with which his mind was stored. Of these the following may be instanced :

"In earthly races
To victors only, do the heralds call,
But oh! in yonder high and heavenly places
Success is nothing, *and the work is all.*"

"God gave thy soul brave wings; put not those feathers
Into a bed, to sleep out all ill weathers."

"Oh that I were an orange tree—
That busy plant!
Then should I ever laden be,
And never want
Some fruit for him that dresseth me."

In figure Sir William Gull was of medium height, and squarely built, of great strength and vigour, and endowed with a power of physical endurance such as alone could have enabled him to do the vast amount of work which he successfully carried out during all his professional life. His voice was sympathetic and impressive, his utterance measured and forcible, and at times startlingly abrupt. In face, form, and manner it was frequently said that he resembled the first Napoleon.

In conversation he was brilliant, and his stories and his aphorisms must dwell in the minds of many.

His love of argument was great, and he would often play the part of *advocatus diaboli* for the sake of indulging in it.

One of his contemporaries writes, "He had not exactly a vein of pure humour, for his humour was generally critical and sometimes sarcastic, but he would speak of the

whims and fancies of men in terms of material pathology, with a cheery satire quite inimitable, and with a depth of sympathy, and a force pathetic and startling. Hence, in part, his power over his fellows; for these qualities were lavishly poured forth on any subject which seemed to him open to it, and especially on all that he thought to be unreal, or false, or hypocritical, whether it occurred in religion, in politics, or in his profession."

Those who may have heard him quote Thackeray's withering satire on George the Fourth will never forget it. "Under waistcoats,—more under waistcoats, and then—nothing." He would say, "That which makes the man is the manhood." "A man must be greater than his surroundings."

Brilliant and epigrammatic as he was in his speech, the work of expressing himself in writing was one of great difficulty to him. He would labour long over the construction of a single sentence, and his lectures and addresses were accomplished by sheer hard work. He sometimes paced the room for hours together seeking to find expression in words for the thoughts of which his mind was full.

He possessed a remarkable power of concentration, and at the same time a no less remarkable versatility of mind. He could at a moment's notice throw aside all thought of work or anxiety and return to some quotation or argument, dropped it might be some hours, or even the night before, taking it up exactly where he had left it. In the same way his mind would recur at intervals of cessation of work during the day, to some main thought which was engaging it.

He was gifted with the power of almost instantaneous repose and sleep. He could sleep anywhere and at any time. During his hard professional work he constantly slept for ten hours at night, and he considered that no one should have less than eight hours' sleep.

He was never in a hurry, always deliberate, and in the middle of the busiest morning would find leisure to converse with a friend on some topic of general interest. He often made use of Mr. Gladstone's words: "If you want leisure you must make it."

His bodily strength and vigour were associated with an equal power of mind and independence of character.

Having once formed an opinion, or determined upon a line of action, he carried it out unhesitatingly, uninfluenced by any thought of consequences. He was unswerving in his ideas of right and wrong, uninfluenced by other people's views and opinions.

He would not express any judgment unless he believed himself certain of his data, and knew his conclusions to be correctly drawn from them. It followed as a consequence that he despised, and sometimes showed that he despised, careless conclusions from inadequate data, on professional or any other subjects.

His insight into truths which lesser minds were blind to see and powerless to grasp, and a lifelong experience that his vast capacities generally placed him in the truest relation to things, developed in him an absolute confidence in the infallibility of his own judgment on certain points. This led him at times to an intensely dogmatic expression of his own views, which not unfrequently provoked antagonism and gave offence, when none was intended, to those who did not know him well.

From self-assertion, properly so-called, he was entirely free, his whole life being characterised by a remarkable simplicity, and absence of ostentation.

He had a great intolerance of forms, "etiquettes," and private considerations, when standing in the way of what he considered right and truth.

The sharp, clever spirit of mere wordly wisdom, all that was mean, paltry, sordid, self-seeking, found no countenance from him.

Of all evils, he looked upon *ignorance* as one of the worst. He often said, "There is nothing so cruel as ignorance." "The devil has been painted in many ways; I should like to paint an *ignorant* devil." He desired to portray in so forcible a manner as to command attention, that spirit of ignorance and prejudice, to which so much preventable suffering and disease may be referred, whether by the neglect of God's laws of health and conduct, or by hindering the investigations of science for humane purposes.

"The breaking of God's laws, moral and physical," he would say, "of necessity brings its own punishment;" "the intellect of man in operation is *the providence of God*;" "I would gladly leave off attending *disease* to teach people how to live."

Sir William was gifted with a strong power of sympathy with suffering in every form, but more especially was this the case when the sufferer belonged to one of three classes—the young, the aged, or the sick; these, he said, must always be helped.

He had many poor people among his patients to the last. Late one night, on returning tired from a long journey, the cabman, on receipt of his fare, still held out his hand with the money in it, hesitated, and said, "But could you give me something for my cough?" The man was taken into the house, prescribed for, and sent away happy. Another time, on arriving in London in the early hours of the morning, a cabman refused to take him. "I want luggage," said the man, who doubtless had been waiting long for his fare. "All right," said Sir William, "I will be your luggage."

When absent on his holidays, a little child, a sick mother, a suffering man, would be gladly attended, and receive the best advice he could give; but if asked to visit some wealthy or fashionable person, the answer was invariably a refusal. "On my holiday," said Sir William, "I cease to be a *doctor*, but I do not cease to be a *man*." "I am willing to be a good Samaritan, but only on a like emergency."

It will appear over and over again, that with all the detailed knowledge and determined grasp of things material with which Sir William had to do, whether anatomical or biological, normal or abnormal, there lay a hidden fire beneath, which broke out unexpectedly in some quaint way, and showed itself as a yearning for a spiritual light which might enlighten all things visible and invisible.

"Man's life," he would say, "is as a pyramid; the base material, the middle mental, the top and crown of all spiritual." He loved to dwell on the transformation of material into spiritual; the grass into the sheep, the sheep

into the man, adding, according to his usual habit, a favourite quotation,

“Tasting concoct, digest, assimilate,
And corporeal to incorporeal turn.”

“Till body up to spirit turn.”¹

In his Scottish home he would (inverting Homer's simile, perhaps unconsciously, *οἷη περ φύλλων γενεή, τοίη δὲ μὰι ἀνδρῶν*) watch the leaves as they fell, likening them to the generations of men succeeding one another, flourishing, falling, forgotten, whose places are filled by another generation, flourishing and going in their turn, the tree itself remaining as the principle of life, just as God's world lives on, though the units come and go.

So in the most ordinary human affairs he coupled the warm love of material nature with the inner spirit, which to him was the real life.

A plant growing in a pond in his garden supplied reflection for weeks—a parable, he said, of man's life, of the Pattern Life. Its shapeless growth beneath the water,—the change of form,—the flower on coming to the surface. He got a friend to draw this, and himself put in the words, “No form nor comeliness—hope,—fulfilment.” Afterwards he got the same friend to add to the drawing the grub of a dragon-fly, and the dragon-fly itself, with the words,

“To-day I saw the dragon-fly
Come from the wells where he did lie,
An inner impulse rent the veil,
Of his old husk, from head to tail
Came out clear plates of sapphire mail.
He dried his wings, like gauze they grew;
Through crops and pastures wet with dew,
A living flash of light he flew.”

To a friend in trouble he presented a drawing of a winter rose under which was written, “In tenebris lux.”

To a little child who had nearly died of diphtheria he gave a spoon on which was engraved, “Who healeth all thy diseases, who redeemeth thy life from destruction.”

¹ Cf. “And from those corporal nutriments perhaps
Your bodies may at last turn all to spirit.”

Milton's *Paradise Lost*, Book x.

The drawing of a spray of holly and holly berries, arranged by him in the form of a cross, bears the words "Spinæ et sanguis."

Upon his bread platter he had engraved "Man shall not live by bread alone."

He would quote,

"But as birds drink, and straight lift up their head,
So must he sip and think
Of better drink
He may attain to after he is dead."

This habit of regarding the spiritual through the material, was for him beautifully expressed by George Herbert, in words of which he never tired,

"The man that looks on glass
On it may stay his eye;
Or if he pleaseth through it pass
And then the heaven espy."

Books were his life companions and friends; he was not an "omnivorous" reader, but his range of literature was wide. His favourite poets were George Herbert, Shakespeare, Schiller, Dante, Spenser, Chaucer, and Burns. On his long country journeys one or other of these was constantly his companion, and those who knew him will recollect his pleasure in capping some passing event, some point in the conversation or discussion, with a favourite quotation.

First and nearest, all through his life, must be placed, as has been said above, George Herbert. He had a ring engraved for himself, bearing the design of one given to George Herbert by Dr. Donne—a crucifix in the form of an anchor,—with the words written on the paper in which this ring was found wrapped, after George Herbert's death, "Crux ancora mihi." This he always wore.

Shakespeare he read at all times. Though he sometimes quoted Goethe, yet his mode of thought and feeling were not congenial to him, and after some years he was rejected. Schiller he studied much. One year in Scotland he beautifully translated his "Sehnsucht," which

fully expressed his own unsatisfied and unsatisfiable mind. He would stand day after day and look up to the Scottish hills, and say the same words :

“ Und die Luft auf jene Höhe
O wie lebend muss sie sein.”

He learned Italian from an Italian Bible which was given him when he first came to London, and during his convalescence from typhoid fever, the only serious illness he had until his final attack, he set himself to study Dante. In him he found the climax of truth and beauty, and he was never without the great Italian's works during the later years of his life. He always read it in the original. He had a true veneration for Dante,—“My Dante,” “my personal friend,” he called him,—and fulfilled in his untiring zest for his works one of his favourite quotations :

“ E duopo il festa più fiamme
Che pria.”

He read Tennyson with attention, but not with full satisfaction, though he often quoted some of his poems. His copies of Spenser and Chaucer were marked in every part. Milton's “Paradise Lost,” as also some of his minor poems, were read and admired. Burns appealed to him for his love of nature.

Amongst prose writers of the day he read Thackeray and Dickens with pleasure. He was not in sympathy with Carlyle. But here I must pause, though not without a word of his study of Hooker, of Jeremy Taylor, and to some extent of St. Augustine and St. Thomas Aquinas.

The books he cared for were never merely read, they were studied, pondered over, digested, absorbed, until the mind of the author became as it were a part of his own. Passages which impressed him were marked, committed to memory, and once learnt were never forgotten. He would work at one book for a year or more, making it a constant companion, recurring to, and quoting again and again some favourite passage. He would often ponder over one sentence or verse for a whole evening.

He always rose at 8, but for many years it was his custom not to breakfast till 9.15, and this quiet time he

would spend in studying one of his favourite authors or in occupying himself with his own thoughts, writing down in a few words the subject or the outcome of these meditations.

His mind was clear to the last, and his love for his books and quotations, so characteristic of himself, remained with him to the end. The following was one of his latest quotations, often repeated during his fatal illness :

“ His words breathe truth, who breathes his words in pain.”

This brief sketch of Sir William's daily life would be incomplete without a word concerning his friends, his manner of taking or making a holiday, and his religious beliefs.

He did not form numerous friendships, but those he did were deep and lasting.

His gratitude and affection for Benjamin Harrison, to whose help he owed his career at Guy's, remained unchanged to the end of his life.

His early associations with Frederick Denison Maurice, the much loved Chaplain of Guy's Hospital, influenced, it may be believed, his whole life. Maurice was, as all acquainted with the history of the “Oxford Movement” know, a spiritual force little congenial to many; beloved, almost adored, by some. For the life and history of Maurice this is not the place; but Gull was from the first attracted by his saintliness, his intellectual grasp, his tenderness for the sick and suffering, and his sympathy with the medical students. By Maurice, or with him, it cannot be doubted that Gull's devotion was turned to Shakespeare, Milton, George Herbert, and to all the greatest English thinkers.

His intimacy with Michael Faraday, formed when first lecturing at the Royal Institution, continued close and uninterrupted until Faraday's death in 1867. His simple life, his humble, childlike spirit, and his deep scientific insight, found sympathetic response in Gull's own nature.

Of the friendships of his later life it is not possible to speak, but the names of Sir Henry Acland, Sir William Jenner, Sir James Paget, Dr. Weber, Dr. Matthews Duncan, and Lord Justice Lindley cannot pass unmen-

tioned. Of friendship he would say, "To know a person you must *believe in him.*"

"The friends thou hast and their adoption tried,
Grapple them to thy soul with hoops of steel."

In the earlier part of his life his holidays were mostly spent abroad. Although his greatest delight was ever in nature, he would study with profound interest cathedrals, buildings, pictures, works of art, in all the places he visited. These as setting forth the workings of man's mind filled him with admiration; and long letters to children and friends, full not only of descriptions of these things, but of the many thoughts they suggested to his ever-fruitful mind, bear record of the minuteness with which all were studied.

He admired the grandeur of Alpine scenery, but the "chaotic" aspect of nature was never wholly congenial to him. A ploughed field, a richly cultivated land, as betokening the operation of man's intellect, always afforded him more pleasure than a waste of uncultivated country, however beautiful.

In later years his holidays were almost entirely passed amongst the Scotch mountains. Here he would give himself to the repose and rest which the contemplation and study of nature and his friendly books afforded, surrounded only by his own family and the many young people he gathered about him. One or other was always a welcomed companion of his rambles, and it was his delight to make them share his pursuits and thoughts, opening to them some loved secret of nature, training their eyes to see something not seen before, storing their minds with some noble or beautiful thought, drawn from one of the authors dear to him, or clothed in his own epigrammatic language. His personal influence was great, and many will look back to those days and feel that they owe to them much of truer views and higher aims. As he would say :

"We live *by admiration, hope, and love* ;
And e'en as these are well and wisely fixed,
In dignity of being *we ascend.*"

He frequently carried a gun, but cared only for sport as

giving an object for walking over the hills he loved, and keeping him in the fresh air; the size of his "bag" was nothing to him. It gave him more pleasure to watch unobserved the natural habits of an animal than to kill it.

During these intervals of leisure both his microscope and telescope were a source of interest and instruction to himself and to those about him. He studied the heavens with no less delight than the earth, and he found pleasure in wandering alone in the dark.

These later resting times of his busy life, spent among the Scottish mountains, in the contemplation of quiet and lovely country scenes, among a sturdy and independent people, recalled happily the simple joys and associations of his early years, when the growth of a single flower filled him with a yearning desire to know the whence, the whither, and the how, of every plant or animal form that had life.

It would be out of place in this sketch of Sir William's personal, as distinguished from his professional life, to pass any judgment on the character of his religious opinions in these days of precise criticism. In the notice of his earliest years the teaching and character of his much-loved mother is shortly described. She never questioned the doctrine of that branch of the Church of Christ in which she had been educated. She observed its ordinances from love and duty. She did not discuss its formularies, and what she believed, she taught. Her son lived in the glare of clashing dogmas. He was not the slave of any. He observed the ordinances of the Church wherein he was born; and his teacher was his Bible.

"I do not believe less than you," Sir William said one day to a friend, "I believe more;" adding, "In Him we live and move and have our being." But forms, ceremonies, and dogmas were never greatly in harmony with his mind.

This memoir will have been of little worth if it has not shown the solemnity that filled Sir William's mind on the contemplation of all things visible and invisible, material or spiritual, in all the varying conditions in which man is placed.

He would often say, "Belief is necessary to the highest knowledge," and would quote from Spenser :

"Oh, why should witless man so much misween
That nothing is but that which he hath seen?"

He recognised the limits of knowledge, and would frequently repeat St. Augustine's words: "There are some things we must *know* in order to believe them, and there are others we must *believe* in order to know them."

Sir William's was a deeply reverent mind; the following touching passage from the "*Religio Medici*" frequently referred to by him, accorded well with his feelings:

"At the sight of a cross or crucifix I can dispense with my hat, but scarce with the thought or memory of my Saviour. . . . I never can hear an Ave Maria bell without an elevation; or think it a sufficient warrant, because they erred in one circumstance, for me to err in all,—that is, in silence and dumb contempt. Whilst, therefore, they directed their devotions to her, I offered mine to God, and rectified the errors of their prayers by rightly ordering mine own."

Lastly, the motto engraven on his seal, for long elaborated, allowing as it doubtless does of much discussion, and of widely differing interpretations, represented to his own mind what he conceived to be the relation of man to himself, to science, and to God.

"Conceptio Dei,
Ratio rei,
Negatio mei."

It was during his holiday in Scotland amid the scenes so congenial to him, that in October, 1887, he was struck down by paralysis, from which he never wholly recovered. In a few weeks he was moved to London. The end did not come until January, 1890, when a fresh and acute illness brought to a rapid close the strong life here too feebly portrayed.

IV. NOTES AND APHORISMS.

THE following part of this sketch is taken entirely from notes jotted upon scraps of paper which were found in Sir William's study after his death.

It is to be regretted that the pregnant and startling remarks habitual to him of which we have record, paradoxical as they are, should not be more numerous. That the habit of writing down his thoughts was not formed early in life is a loss alike for his portraiture, and for the thought of our time.

Of these fragments it has been possible to print only a few, the greater number being obviously incomplete. They illustrate the fulness of Sir William's active mind in the intervals of his intensely practical life. Some were probably written after chance conversation with other serious thinkers, on the nature of things, on the ignorance and on the knowledge of man, and on the relation of man to God. Others formed the subject of well-remembered conversations with those around him. Many were evidently the outcome of reading Dante and George Herbert, or some other of these great teachers of man who were his chief delight, outside and beyond his profession. Would that these notes were more in number and more full in detail! They tell, however, how he lived in habitual touch with the deepest questions of modern thought. They are given as they stand, without comment, as the thoughts of a deep writer and thinker, during an overworked practical life.

The world is not my proposition of it (*nicht meine Vorstellung*), but *my* world is my proposition of it (*ist meine Vorstellung*).

My world is that part of it to which my sense extends. My eye reaches to the stars; my ears to the thunder in the sky, or to the vibrating vocal chords of the lark which sings there. My nose goes into the petals of the rose by continuity of the perfume which exhales from them; or into the joint which gives out its appetising smell in the roasting. My taste reaches into the textures brought into contact with it as the touch continues on beyond its immediate self in the tension of a cord or the extension of a rod.

Not only are the senses related to the world, but they recognise themselves as such; the light seen is in the direction of my seeing it, the hearing is the object producing the sound. It is true one sense may need another for its assurance in all points, but with this mutual criticism they mostly prove right. The sense is limited to its proper lines of operation, but, this admitted, it may truly be said that the eye as much touches the most distant star as that my fingers touch the pen with which I write.

The world is to me my proposition of it; and so is the pig's world, the pig's proposition of it; or, to use a common saying, "the pig sees with pig's eyes;" but that the world is more than my proposition of it is proved by the fact that the pig's world is not mine, nor is mine that of a more highly instructed man, of one who has a larger mental capacity, and who is more widely and more intimately acquainted with the workings of nature, inorganic and organic. Newton's and Darwin's world were different from the worlds of most men, and yet their worlds were not *the world*, but more and better than mine, as they had followed out further and better the teachings of the sense. The world is more than anyone's proposition of it, or, if you please, say conception of it, though to repeat, any man's proposition and conception of it, is *his* world. Not to name the systems of individuals it may, without doubt and with all respect, be said of them, such is Mr. A—'s world; this is Professor B—'s world, and so on, to the end of the alphabet. All are worthy of consideration; all exhibit the mental state of the individual who puts his system forth; all are (if he be not a madman) in some relation to THE world. Newton, in a wider

sense than the village agnostic, who denies because he is ignorant, and is satisfied he knows all because he knows so little.

What is scientific knowledge? What is demonstrable to the sciences? How demonstrable? By repetition at will of the conditions. Gravitation is demonstrable by leaving a body unsupported. Heat is demonstrated by its effect on bodies, dilating them as in a thermometer of air, spirit, mercury, or a bar of metal. Light is demonstrable by lenses and chemical effects, and by the retina of animals. Electricity is demonstrable by the repulsion of light bodies from each other, by its inducing a magnetic state in copper. By these and numerous other modes, physical powers are demonstrated to be quiescent and active about us. But if we go a step further and inquire into higher combinations, as is open to us, in the leaf of a tree or a blade of grass, and pursue the inquiry, another world of powers is gradually revealed.

I cannot admit that any near approach has been made to an explanation of our moral and intellectual nature, of that which we call and feel to be ourselves.

It may please and satisfy some students of nature to think they know more than others, and that from analogy and logic they are able to unravel it, to the last thread of our textures, and then to sit down and contemplate the simplicity of the organism with its fears and aspirations. Such a spectacle but exhibits the simplicity of the student and the shallowness of his inquiry. This will hardly be considered too severe a criticism if it be admitted that we know nothing of the evolution of sense.

"Ergo vivida vis animi pervicit

. Religio pedibus subjecta vicissim

Opteritur, nos exaequat victoria caelo."—*Lucretius*.

"Religio" is here used for the objects of it, not for the aspect of the mind to holy things. The two uses of the word must be carefully dis severed in our language.

Man has been a great loser by not bearing in mind this distinction.

“It is the shrine which thou dost venerate,
And not the beast that bears it on his back.”

The right and duty of man to look into the things of which he forms part, and upon which his very existence depends, is now fully admitted.

This right and duty requires, however, a profound sense of the unfitness of untrained minds and unarmed hands for the work.

Reverence, and even a deep reverence for ourselves and our work is needed, or we may easily find ourselves putting ourselves forward and explaining Nature when we should be patiently and diligently investigating her ways.

It plainly appears that the same questions which we now ask ourselves to-day have been asked over and over again for thousands of years past.

When we come into the presence of great writers and teachers we should remember that they have more to teach than we have capacity to take in, however docile we may be.

If this is true of men, of the prophets and teachers of Nature's truths, how much more of Nature herself, whose ministers they are !

The laws of things as we know them, their constancy in the midst of continual change, their invariability and so far permanence, do not, however, carry us further than themselves, not to that of which they are the expression and form.

“Diese Gesetze nicht unsere Leitfaden sein können.” (These laws cannot be our guide.) Schopenhauer regards the platonic and *vera* explanation of eternal laws as dreams.

We must go deeper into ourselves if we would be acquainted with the reality of our being.

It is not even what we do or what we think ; these states are proximate, striving, therefore changeable, and good or bad in their relation to the subject, or not at all, but even the true and best are not the subject.

“Der Welt Ende und Anfang nicht ausser uns, sondern in uns zu suchen sei.” (The end and the beginning of the world is not to be looked for outside us, but in us.)

What we are, such is our world.

We have no faculties for passing beyond ourselves, yet in ourselves are unfathomed depths, unexplored powers and relations which need fathoming and searching into. As Schopenhauer says, if we would understand nature our course must not only be horizontal, but perpendicular.

And though, as he says, the brain is the quarry which affords the material for *a priori* structures and dogmatic teaching of the *veritatis atomæ*, it is also the means, the medium through which we learn all we can know.

Unfortunately the senses are such masters, and rightly so, that they prejudice us overmuch in leading us to believe their data are comprehended in form and time, and contain no more, though there is a heaven over our heads as well as an earth under our feet.

Kant perceived that the forms of thought necessitated by our organisation, and which lead man to dogmatism as well as to the truth necessary for time, must themselves become objects of criticism if we would reach a comprehensive philosophy.

Pessimism and optimism are both extreme views of things.

The present conditions are obviously much more good than bad, but still far from what might be idealised as best. The strife and striving for good is largely weak. The good reached is not at high-standard level.

The remedy is in ourselves, though few know its use, or can use it. Are we what we see and feel? If we are, pessimism has a strong basis; but we are not, though convinced we are.

Truth is truth, says our good Professor. We may well ask, what is truth? A man may prove much that has no other truth but in him, and all be a turnip lantern leading to a precipice over the sea.

The idealistic views of the world, as Berkeley and Kant

and other thinking men have proved, are the true views of the world. Such is the last conclusion.

Is it not clear that philosophy may be ever changing its point of view, but that for us the proximate is the real?

Our striving must be against *negations*. These negations, however, differ from algebraic quantities, being + in proximate relations, — in the wider sense.

Can we separate object and subject? Myself is nothing but a part of my body, my body is nothing but a part of my food, my food is nothing but a part of the earth, the earth is nothing but a part of the solar system.

My body differs from my food in its living arrangements, which we call organisation. Through our organisation we get sense, emotions, perceptions, knowledge, and the world and God are revealed to us. (See Milton, Book V.)

In ourselves we rule or may rule = Will.

Will = choice. Choice varies with object or indifference.

This determined by many circumstances — health — intellect.

Therefore the operations of will are different and various, differing and varying with circumstances.

Knowledge = relation.

Explanation = classification.

The outward world a hieroglyph.

(SCHOPENHAUER, vol. i, p. 115.)

Purity = oneness. Water is pure when it is water only, and it is considered pure water if it contains atmospheric air + extra oxygen, provided it be wholesome to the blood; but should it contain deleterious air, though logically as pure as when it had atmospheric air only, it would be thought impure.

Purity is therefore used to signify absence of what is injurious, absence of everything hurtful.

Moral purity seems also to imply this.

The chemist uses it for oneness, for a thing which is itself and without admixture.

Practice first, philosophy after.

The forms of organic life are infinite. There is the

whole vegetable kingdom, so varied and extensive, that with our present knowledge it defies definition, much less an enumeration and classification of its members. If we took a unit of any one species of this kingdom, it would exhaust our powers to make plain the history of its life. Yet we know enough to enable us to see that in this kingdom the primary step of organisation was made.

Whether animal or vegetable first came is open to further question, but that the animal kingdom has been and is superimposed upon the vegetable is plain.

Now Pathology, like her elder sister Physiology, could occupy herself without stint on any part of this wide field of life, and we have to do so for the side-lights to get on our special subject.

The pathologist follows the steps of the physiologist, and often their work is but one.

If the self-will interest which man naturally has in his body, did not prevent as well as quicken the operations of his mind, we should much more clearly see that often what we call and think of as pathology was but physiology in another form. Decay and death are physiological—that is, natural and part of life ; but we had rather not think so. We would rather that the course of nature was more in our own hands. We have indeed much power in directing and modifying the course of nature, but we mostly begin not only in the wrong way, but at the wrong end.

The education and correction of the psychic force is worthy of all attention. The so-called disintegration of moral nature, and its re-establishment by reciprocal control of the nerve-centres, is a proper work of science. But here we reach a region in which our anatomical conceptions are sure to be at fault, since they reach but to form and not to composition.

The solution of the mystery seems so near, and yet is so far off. We have evidence from the history of the earth that incalculable time and incalculable circumstances have been in the problem. All the forces of our planet are in the problem. And not only the forces of the earth in matter and gravitation, but also the celestial forces of light and

heat, both primal and present. And further, the eocene germ forces their constant operation and augmental through all time; and further, our need of education into the study of nature, and the works and workings for a successful inquiry, are all considerations which show how far off we are from knowing what we are, and how we came to be.

Doubtless for the ends of practice we have knowledge enough at least for our moral guidance, and science continually though gradually adds to our consciousness of life; but for full knowledge we are 'infants in the dark.'

If we could see the working of the world's forces without projecting *ourselves* into them, how educational an effect on us it would have!

Instead of this we project ourselves into them, combining and distorting them, and seeing only ourselves in them, and that only partially and falsely.

Das Ding an sich does not exist.

This is a human idea only. Everything is *das Ding an sich*, or belongs to it. If it did exist we could not know it. It is therefore inane to discuss what we cannot know or conceive.

"In the beginning." In the beginning of organic things Light was the factor; but whence light in the *ratio rerum*? The advance in our knowledge has shown that light is but related to the other forces. Though all the effects of sunlight have not been produced by electric light, the steps made that way encourage the hope that such results will be obtained. Yet so wonderful is it even to those (and even more to those) who are familiar with the fact, that light which by our structure we feel as a sensation, and light to which we owe our life, should by common sense be identified by us, though under forms entirely different.

"Hail, heavenly light!" says Milton. This apostrophe is of wider bearing than it is likely the poet thought. Light is the primordium of organic things. Light is the master sensation in us. The light sense, in all its details of transparent, refractive, sensitive, motor, and central condition, presents us with the culmination of organic facts.

Organic structure, the result of solar light, brings on a new world. The dark world is mechanical. The world, including light, is more than mechanical.

We, as living things, know this. We have sensations of novel kinds, conscious likes and dislikes, impulses of different orders, or more properly called *appetites*.

The mind must be either one with nature or outside of it.

All evidence and expression show it to be one with nature. If it be so, so-called material must be more powerful and wonderful than we generally believe. There must be not only the three dimensions of space, but that which has no dimension.

The analysis of nature has not advanced far enough to admit of a theory of it.

The whole field of sensation, of thought, and of moral and intellectual relations, has to be brought under scientific research before any general statement can be made.

One thing would seem probable, namely, that mathematical dimension is not the whole measure of nature; that, in fact, the three dimensions do not measure the material—at least in all cases.

Moreover we have no complete knowledge of compound atoms.

It has been said that the combined intelligence of many men is higher than that of any one in the combination.

It may in some such sense be true that compounds may possess properties intellectually higher than the components.

One's whole life might exhaust itself in studying the form and nature of a leaf, and yet leave in it an undiscovered world. If this be so of any simpler object in nature, how much more of an organised body such as man's!

When we remember with what punctiliousness the students and defenders of religious dogmas insist upon a point, a letter, or a word, we students of nature should take a lesson to our good, and to our study's advancement; for here no

point is accidental or equivocal, none without eternal authority. So much cannot nearly be said of studies which begin and end in our own ideas.

Do not explain Nature, but by patient attention to the facts let her explain herself.

There are no generalities existent in nature, but only particulars. The questions for science are always what is the special fact, and next, what follows this.

Generalities are human formulas to help our weakness of thought, or often idleness of thought, or rather want of thought.

If the human mind is to grow, and if its scope of knowledge is to increase, it must be by the study of things in their widest relations. The old idea that the earth is the centre of the universe and man the centre of the earth is largely exploded; and all the questions "why" have been dissipated in the explosion, whilst science is patiently and humbly occupied with "how" and "what next."

The work of medical students is to inquire into the "how" and the "what next," and not into the "why."

A study of nature shows that there is continuity throughout.

"Reason has short wings in comparison with nature's."
(DANTE, 'Paradiso.')

The greatest advance that can be made in practical Science is to a full and intimate recognition of our ignorance.

We may not satisfy ourselves with logical and *a priori* conclusions demonstrative to our reason, whether in things Natural or Spiritual. In both we have to learn the relations of each. Learn by observation, study, and experience. We know that bread nourishes by eating it, not from the chemist's analysis.

Science and common sense differ as cultivated fruits differ from wild fruits.

Science sows its seeds of inquiry, and gathers the fruit. Common sense picks the fruit, such as it, is by the wayside. Common sense has no fields or orchards of knowledge.

The organisation which exhibits itself in living things is a great second page of nature. The human mind can conceive of organisation without life. Organisation does not seem to produce life, but it expresses it, and produces it in a new and higher order. A watch or any other piece of machinery may represent organisation, but not living organisation.

There is no psychology but on an organic basis ; living organisms present, and some are the alone basis of mental facts.

Our senses and our sensations give us knowledge. May we not infer that they are essentially related to the things they inform us of ?

Spinoza says the mind is known only through the body. In other words, the body reveals the mind.

The germ of life is independent of the conditions which evolve it.

Darwin deals with evolution, not with origin.

Spencer tries origin, but altogether fails.

Health.—This is a subject which appeals to all. What is it ? It is maintenance of the body in strength for our use, so that we may think and do without knowing that we have a body. A healthy man lives and acts, wakes and sleeps, without being troubled about his body. The machine—for machine it is—works quietly day and night without troubling its possessor. It has its own rules and laws, which in health it quietly keeps. When hungry it asks for food, and when satisfied would, if the master would let it alone, leave off eating. But master and doctor and friends and ignorance and prejudice are almost always offering the living machine advice, and making it go wrong by excess or some fanciful thing or other. The various parts of this

living machine have emotions of their own which guide it, though we are unconscious of what they are. The heart beats, the breathing proceeds, the food is digested, and the other different works are performed quietly and regularly, and more regularly if the master does not interfere.

It is often and often the master's interference directly or by way of some suggestion, which disturbs this daily performance which we call health, and which is indeed health.

The master has his work to do, and if he does that work well and truly, and leaves his servants to carry on the work of the house, good order will mostly be kept.

There are no byways to health of mind or health of body. The straight road is narrow.

The law of health is the law of life. This is not a truism, but a law.

No man must be considered to have been well until he was, as it is commonly expressed, "taken ill." And no one can be pronounced healthy until after examination post mortem.

Drugs given in *disease* are, not unfrequently, for the most part hurtful, perhaps universally so. The object of medical treatment is to maintain the life processes.

I do not say that no drugs are useful; but there is not enough discrimination in their use.

There are many good general practitioners, there is only one good universal practitioner—"a warm bed."

The one fatal blunder of the profession is the belief that we can treat, with advantage to the patient, the acute maladies, and that we ought and have power to treat the tissue changes, though all admit we are ignorant of the nature and living course of the changes.

When one undertakes to show the way, he should know something of the path.

In therapeutics this has often not been so, but the most confident have generally been the most ignorant and dangerous guides. Nor is this criticism confined to unlearned men so called, but honoured and acknowledged authorities have often been proved by the course of time to be as dangerous as the more ignorant and unlettered. What shall we do? Rest and be still. The workman that made the machine can repair it, all hindrances being removed. Study the hindrances, acquaint yourself with the causes which have led up to the disease. Don't guess at them, but know them through and through if you can; and if you do not know them, know that you do not, and still inquire. "Cannot" is a word for the idle, the indifferent, the self-satisfied, but it is not admissible in science. "I do not know" is manly if it does not stop there, but to say "I cannot" is a judgment both entirely illogical, and in itself bad as favouring rest in ignorance.

The study of Medicine is an object lesson; the object, man's body in health and disease. Man's body as a separate thing will be best understood by comparing it with the bodies of animals. This should be a wide and careful study.

Knowledge of phenomena, sense, knowledge of forces, interpretations, formulations of forces when known so far as to be subject to formulation, tend to forecast and use. The current is running on in a given line; this we hinder or divert by other forces, kindred or added. Such is Medicine and Surgery.

What we call health, which looks so fixed and stable, is more changeable than the stability of the rainbow. Its maintenance depends upon the moving equilibrium of more forces than the mind of man can realise.

We still have doctors who believe in themselves.

Give your intellect without stint to your profession, not your heart.

That which is healthy works upon its objects, that which is diseased works upon itself.

"Things are not what they seem."

The reality and the truth are not to be settled off-hand by our untutored conceptions.

Brain and mind are still mysteries to our ignorance, and yet we express our opinions about them. I wrote to —— :

"I don't know what brain is, I don't know what sleep is, but I know that a well-nourished brain sleeps."

As we may have double vision, so we may have double consciousness, explained, as it would seem, by our two cerebral hemispheres.

In cases which I have observed, the two states have not, however, been equal. Thus a patient will say when questioned, "I am quite well, but a gentleman in the house was very ill last night," the condition being one of memory rather than of consciousness.

The conditions of delirium give but doubtful evidence for or against the oneness of the ego.

So far as investigation has gone, we seem to see that the oneness is a resultant or the expression of a complex unity.

The central fact of our existence we cannot reach by anatomy or physiology. These sciences deal only with time, space, and relation.

Here lies the arena of practice wherein we may strenuously and hopefully toil and strive, admitting the essences upon which they repose, and declining to discuss or deal with what we have no faculties for knowing as science, but only as a sure ground of belief.

Hydrophobia.—Of all the strange excursions which the intellect has taken in search of truth, none is more strange and curious than that of M. Pasteur for the discovery of a remedy against the bite of a mad dog.

M. Pasteur had not been a student of hydrophobia, nor was he acquainted with the facts of this or any other disease in animals, men, or dogs, so that he started on this inquiry without knowing the character of the country he had to travel through. It is necessary to premise this, or the course he took would seem but little calculated to lead him to any useful result. He knew, as all have known, that the bite of a mad dog produces its results not by fright of the person bitten, but by the poison on the tooth.

He probably reasoned, as many a one has reasoned, on the similarity of the bite of the mad dog and the wound of the poison fang of the rattlesnake. And no doubt he noticed the difference in time which the two poisons take to produce fatal results, that at once in a few seconds the poison of the rattlesnake begins to produce its dreadful effects, and kills within as many minutes as it takes days or weeks or, strange to say, even years, for the tooth of the mad dog or wolf, however venomous, to produce hydrophobia. Whether he thought of this or not, no one can say. One thing is certain, for he has told us, that it was the vaccine point which is used in vaccination which impressed him as most analogous to the dog's tooth and the poison conveyed to that of vaccine.

It is right to state that only a want of knowledge of the circumstances, natural to one who had no acquaintance with the facts could have favoured this analogy, since, so far as the known facts go, the vaccine poison and the mad dog poison have nothing in common. It may turn out to have been a happy ignorance, which made the way plain to what follows, which enabled the scientific fancy to leap over much which would have arrested the pathologist on the same march. However that may have been, so it was. The vaccine poison works out its results in a very definite and traceable way, both in time and place.

What is education? Teaching a man what his powers and relations are, and how he can best extend, strengthen, and employ them.

Education is not learning, but the training of the mind that it may learn.

What our education most needs is enlargement as to the intellectual and moral nature, as a scientific enquiry.

What can advance man? A careful government of his body in respect of its appetites and exercises. A pains-taking education of his mind and moral nature. The source of this advance lies in the man, lies there often hidden and stagnant. Selfish, narrow aims and purposes afford no stimulus. Ignorance and indifference have no quickening forces, or suffocate them.

The power of forming ideals is peculiar to humanity; and the higher the ideals, the higher the humanity. Lower animals have no ideals.

Man works by ideals, the fictions of his intellectual and moral nature built up from experience and transcending it.

Man cannot perfect his mechanical works without an ideal standard, such as pure mathematics; so neither can he perfect his moral and intellectual works without the idea and conception of God.

A man's life is not what he reads or what he thinks, but what his inclinations and aspirations are; in fine, what his inner life is.

As there is a moral law in man and an intellectual law, the world must substantially be moral and intellectual.

Why this is not so evident is from the predominance of the lower animal laws;—and hence our not reaching to the higher organic stage—the manhood as contrasted with the bestiality.

Then what is our hope?

Our hope is even in Thee (Eternal).

The moral man is higher than the intellectual. That

reaches to the centre, this to the conditions ; that to what is, this only to the conditions of what is.

The moral law and the physiological law are one. The physiological law is the *law of life*. Life in its entirety includes all.

It is not the aphorisms of morality which transform a man, but the width and depth of his view of the conditions of existence and life.

Life is a heavenly problem, to be worked out in earthly materials.

I could often wish there was more *faith* in *physiological* laws.

The nearer I approach to the end of life the more I am impressed with the spiritual nature of things. It is the sensuality (not sense, but sensuality) of our nature which restricts and hinders our clearer view.

The sense of personality in man is the source of his errors intellectual and moral.

Even the most material work should have the spiritual element in it ; intellect and duty.

If the fear of the Lord is the beginning of wisdom, the love of Him is its fulfilment.

This includes and excludes much. Includes pursuit of all truth, and excludes self-love.

Man is an agent in world development.

It is obvious that the economic progress of the world is built up on self-help and mutual help, under the rule of necessity.

In living things there is everywhere relation, adaptation, dependence and interdependence.

The intellect of man, in operation, is the providence of God.

The conscientious conviction that all truth is consistent with itself is necessary for our moral life.

Life would be unbearable to the thoughtful man but for the conscious conviction that evil should eventuate in good.

Scientific things, material things, must be known in order to be believed, Divine things must be believed in order to be known. There be, saith St. Augustine, and he repeats it, some things which must be known in order to be believed, and there be others which must be believed in order to be known.

This separation of things of sense and things of spirit, of things of science and things of faith, of things human and things Divine, in their relation to knowledge and belief, is fundamental.

The antithesis of faith is inquiry.

Things may be opposite without being contrary.

Opposite, though one could not exist without the other. The North Pole is opposite to the South, but there could be no North Pole without a South.

Reason is a blind guide, and to put out the religious sentiment would and must mean *chaos* with a creature like man.

Belief is necessary to the highest knowledge.

The ideas of God and Being, Space and Time, do not need proof. If there be anyone who asks for proof, he must be considered mentally blind, and no reasoning will make him see.

He is the man of highest mental stature who has the fullest conception of God.

“Whom truly to know is to confess that we know Him not” (Hooker). The spirit of a man is a storehouse of wonders even more than his body is. Yet, duly considered, all runs in a straight line from nature up to man, from

man to God. An infinite and varied line, ever straight, but often not to be traced for blurs and blots, weakness and feebleness of outline. Yet it runs ever on.

Life cannot be restored in an aged body, save that life which is eternal—the spirit of righteousness—rightness,—the law of *all* life when yet there was *none*.

Thou canst not make water flow uphill but by expenditure of greater force than draws it down. The spirit of fire can do this,—converting it to steam.

Spiritualise water, and it ascends in spite of itself.

The earth is not the centre of the universe. Astronomy proves this.

Self is not the centre of heaven and earth, small reflection will prove this.

Self is as fallacious a centre of things, as earth is of the universe.

There are as many worlds as there are persons.

The world is each man's conception of it.

The world is not made by negations.

Grace, graciousness.—This human feeling of the mind and its outcome in life is not incompatible with the sternest feeling of truth, but it softens its assertions and the carrying out of its mandates. This spirit of grace decorates the daily events of our life. It is the handmaid of charity, one of the same house, ministering in the guest-chambers to all who come and go, freighting intercourse with pleasant memories, and raising the commonplaces of life to rank and dignity. Some of the lower animals are gracious, raised to this partly by their generous nature, partly by the kindness of man.

Graciousness, when genuine, is spiritual, and pervades the whole being at all times. . . . Grace gives its colour to every act. . . . Grace is the Fairy of life. But beware of imitations, for there are such, current in society,

which have the show but not the truth of grace; *ignes fatui*, not of the eternal fire from which all grace and all virtue is.

How would a mariner fare if at every step he had to consider the laws of magnetism? Enough for us that we have a pole-star: that we have hopes: that we have a world with its sunshine and its storms: that we have eyes that can guide us well enough for our daily life. Let us not then so load ourselves with the riches of science and speculation that all that would be left us would be to lie down and die under the weight.

Everything must be considered with its context, words or facts.

Popularity is the admiration of those who are more ignorant than ourselves.

The proper argument against darkness is a light.

The best remedy for error is truth.

By neglect, errors of belief are most surely killed, and not by treatises against them.

Error is often stimulated into new activity by arguments to prove that it has no life.

A written truth lasts.

A spoken truth mostly perishes.

A written truth can be looked upon, and made a pivot or fulcrum or corner-stone.

A spoken truth is fluctuating, and soon decays, or soon is metamorphosed into something very unlike its early self.

The best memory is a record made at the time.

If any thing is to last, time must be put into it.

A little learning is a dangerous thing;—not if you know how little it is.

The world is generous, but not on the lines you would

expect. Less than this, the generosity comes in by unexpected lines, and by the lines of old obligation but rarely.

We make our arrangements for getting through the world instead of lovingly living in it.

Why does the world look so different to me at sixty-eight from what it did at eighteen? Then I took nickel plate for silver, and pinchbeck, for gold.

My danger now is lest I make the opposite mistake, thinking gold pinchbeck, and silver but nickel.

For whilst "all golden is not that doth golden seem," "gold o'er-dusted" may be misreckoned dust.

We often see when we do not perceive.

"The good of others" is a posy worthy of man.

Never become less by your own fault.

A man can receive no greater honour than that he bestows on himself.

Keep the body in great order, for out of the body the spirit grows.

Sentiment governs things of sentiment, but not things without sentiment. Our wishes can have no effect but on beings that wish. *Voluntas non valet nisi supra mentem.*

In childhood we learn to talk; in age our lesson is to be silent.

That there is a truth in all things is certain, and yet nothing can be more certain also than that different minds, as it would seem equally well informed, do form most opposite opinions on the same facts.

An unkind word need never be spoken. Silence becomes us when judgment could not be passed without sinning against charity.

In life there are some few precious moments of repose, and blessed peace ; . . . but most of life is a striving with a sense of failure against forces too strong for us,—“rowing,” indeed, “hard against the stream.” But we must not forget that the mental and moral striving is God’s power in us, as is the sunshine His power about us.

Time does not make us stronger, but it may make us better in many ways.

To do anything well favours strength, because it leads to perfection.

Do not let the injustice of man lead to “retaliation.”
Do not do evil because you have suffered evil.

Time brings all good things, even when it brings death.

V. CONCLUSION.

THE facts which have been given in the previous chapters of this brief description or survey of one of the remarkable men of his Profession in this century are of greater value than any comment that can be made upon them or him.

It is obvious that Sir William's early education rested mainly on his mother's wisdom and love, and on his own innate force. His manly English father, and his mother, trained in the faith of that branch of the Church of Christ which made Wilson, George Herbert, and Ken, laid the foundation, and fixed the bent of the boy's character. Contact with Nature, on land and on water; watching the fishers at their labour, marvelling at the growth of the plant, and the ways of the birds as they asserted their rights on the tree tops, filled him with a yearning never suppressed to unravel the hidden mystery of all that live or have lived on earth, and the relation of each to man.

This education, adequate for a capable child gifted by nature with the power of observation, and with a thirst for knowledge of all things seen or unseen, prepared him for the complex studies of his after life—whether in botany, or comparative anatomy; of man in health, and in disease; living in virtue, or in vice, in wisdom, or in foolishness; and developed in him those qualities which make a great physician.

It would be unjust to pass unnoticed both the wisdom and kindness of his various teachers, who each sought to give opportunity to the latent powers they felt to be in their keeping, culminating in the care of a country rector, Mr. Harrison, and the consequent opportunity for full development of power, placed at his disposal by the Treasurer of Guy's Hospital. It should be said that such perception and such goodness are indigenous among us everywhere

and at every time, through the freedom of the English people when left to their voluntary efforts for good.

It would not be well here to discuss the precise turn which Gull's mind took when his professional tutelage was completed, nor of the discussion to which his curt statements on Water—and Mint Water; and Wait—Watch—gave rise at a time when polypharmacy was not extinct, and when hundreds of good medical practitioners were only paid for their services and their knowledge by the cost of the medicines which the sufferers consumed or received. It was a period of transition, now thoroughly understood and happily well-nigh closed. In public Gull rarely spoke of these things, save in his hospital, to his students.

It is without question that Frederick Denison Maurice was to Gull from the first, at once attraction and light. For at that time—1840—before the bitter controversies on theological questions were at their height, Maurice gave to the best youth with whom he associated, an idea of spirituality with power which they never lost.

The inner depth of his nature was never more touchingly revealed than shortly before the end came. Sir Henry Acland writes: "I was sitting alone by his side, and, as was his wont, no continuous conversation passed between us. Suddenly, in his deepest and most earnest tone, he slowly said, 'Acland, do you know what I am?' Not divining what might be his meaning, I replied, 'Not at all.' 'I am a Christian Agnostic.' A better account of my dear friend could not be given. Would there were more like him!

"It summed up, it seems to me, the whole of his deepest convictions. 'Not by science—not by knowledge alone—do I live and die. I live by Faith—in Faith I die.'

"Probably Sir William's deep interest in spiritual questions during half a century, together with the originality and depth of Maurice's religious thought had, unconsciously to himself, framed his concentrated creed—CHRISTIAN AGNOSTIC. It calls to mind the 'Student's Prayer' which Francis Bacon left to all generations. This prayer is as follows:

"'To God the Father, God the Word, God the Spirit, we pour forth most humble and hearty supplications; that He,

remembering the calamities of mankind, and the pilgrimage of this our life, in which we wear out days few and evil, would please to open to us new refreshments out of the fountains of His goodness, for the alleviating of our miseries. This also we humbly and earnestly beg, *that human things may not prejudice such as are divine*, neither that from the unlocking of the gates of sense, and the kindling of a greater natural light, anything of incredulity or intellectual night may arise in our minds towards divine mysteries. But rather that by our mind thoroughly cleansed and purged from fancy and vanities, and yet subject and perfectly given up to the divine oracles, there may be given unto faith the things that are faith's.—Amen.'

"It may help some to know what were the convictions of this robust and independent thinker—who through a long life had observed man from birth to death in every condition, of every kind—when in full possession of his reflective faculties, and in full consciousness that his death would probably be sudden. He so summed up the mysterious ways to knowledge that have in the evolution of our little world become open to man."

This memoir cannot be more fitly closed than by a quotation from a poem written by one of Sir William's old pupils at Guy's—Frank Smith, entitled "The Worker." The passage, marked many years before, was read by him one Sunday shortly before his death, with evident emotion. It refers to the death of a man of science, whose life had been spent in seeking the 'Elixir,'—"the great life giving secret" that should give to men health, strength, and length of days. To those amongst whom he had lived it seemed as though death had but ended a life of visionary hopes and aimless toil:

"Even such the life, even so the end, a search,
A life-long weary search, for what? for nought

.
. and this was all.

"*This was not all*, for God on high Who wrought
Himself six days to form the mighty world,
His eyes beheld the long and patient toil
. The pure and high design.

He hath received him and
.
. . . hath given charge to such
As are the mightiest around His throne
That he should learn the springs of law and fate,
The secrets and the mysteries whereof
The bounds are space, the time eternity."

Those who heard him read these lines could not doubt that the words expressed his own conviction that death was not the end—that after death would come new light—and that the life-long yearning for fuller knowledge would at last be satisfied.

In accordance with his own expressed wish Sir William was laid to rest near his father and mother in the churchyard of his childhood's home. On his grave is his favourite text,

"What doth the Lord require of thee,
But to do justly, and to love mercy
And to walk humbly with thy God?"

