The First George Alexander Gibson Memorial Lecture.

AN APPRECIATION OF THE MAN AND HIS WORK.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

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[Abstract.]

I UNDERSTAND that these lectures are, in future years, to be devoted to such subjects as Dr. Gibson was interested in during his life. These interests were so wide and manifold that there are but few subjects in the range of clinical medicine in which he was not interested. In future years, when the work that he has done becomes part of the general knowledge in medicine, and all his individuality has gone—as happens to all workers—the question may be asked, What manner of man was this whom his fellows honoured by raising to him this memorial? It seemed to me, and it met with the approval of your President, that the first lecture might, with propriety, be devoted to an appreciation of Dr. Gibson himself and of some part of his work.

There are many phases of his life of which I have but little knowledge. I cannot speak, except from hearsay, of his great gifts as a teacher in the lecture room and in the hospital wards. But of the fruit of his work as a physician I can speak, for I have been a devoted student of his work almost from the day he began to write.

I will restrict myself to dealing with his work and character as they presented themselves to me, choosing those portions of his work of which I may claim to have some knowledge, and whose value, therefore, I am able to determine. Naturally such a procedure will give but an imperfect picture of the whole subject, but still the fact that it is a sincere and knowledgeable criticism will carry with it some idea of the greatness of the man.

Dr. Gibson was never content to be merely the mouth-piece of tradition. Few men have ever had his grasp of the subjects with which he dealt, in the sense that he approached them from such varied points. He had a fine historical sense, so that he was always interested in the origin of an idea, and it was to him a delight to trace through the centuries the progress and growth of some conception that had influenced medical thought. It was this trait in his writings that made them so valuable to all students of a subject, particularly when, as often happened, he made a running commentary of the value of each contribution. The interest he took in his subject naturally led him to explore fields outside the region of clinical medicine, to detect the sources of knowledge that influenced medicine. Thus it is we find so many auxiliary sciences called upon to contribute their quota of knowledge. Especially did he keep himself acquainted with what was going on in the physiological laboratory, and he was always eager to seize upon the latest observations, and apply them to the interpretation of the manifestations of disease in the human subject.

As a teacher of medicine, and as a physician called upon to study all forms of disease, it was incumbent on him to keep abreast with the advances that were being made all along the line. This of necessity led him to take such a large view, that much of his time was employed in keeping in touch with the progress of medicine in widely separated fields. It is only by the study of his numerous contributions to medicine that we realize how extensive was his knowledge. It is the wide outlook that is the striking feature of his labours.

In his writings and in his addresses Dr. Gibson had a great gift of explaining in simple language the most abstruse problems. His command of language, his literary gifts, and the flashes of humour with which he brightened his discourses, made the dull subject so interesting that one scarcely realized the profundity of his knowledge. I could illustrate my meaning by many references, but I shall draw my illustrations from a field with which I am somewhat conversant, and one which did much to establish his fame.

THE HEART.

His great work—the work which embraces his most valuable contribution to medicine—was his book on *Diseases of the Heart*. It was published in 1898, and may be taken to represent the knowledge of the subject of which it treats as it was at the end of the nineteenth century; it is a worthy memorial of that period. In many instances textbooks are but the collections of the traditions of the subject with which they deal, and are founded on the beliefs prevalent at the period at which they are written, so that they are sometimes spoken of as being the most debased form of literature. But the textbook of Gibson is the opposite of such a description. It is literature of a very high order. The most difficult subjects are described so clearly that the hasty reader may fail to realize what it is that makes the matter so simple. To achieve this there is necessary not only a power of lucid expression, but there must be a thorough and intimate acquaintance with his subject, and it was his great knowledge of the subject in all its phases that enabled him to depict truthfully and so simply the subject with which he dealt.

When I say that in my opinion this textbook is a model of what a textbook should be, and is one of the best that has ever been written, no doubt I shall be accused of exaggeration. It would not, however, be difficult to make the assertion good. To write on a subject that will interest and instruct people who are themselves conversant with the matter it is necessary to do so out of the fullness of knowledge, and I doubt if any one ever wrote a book with a more intimate acquaintance with his subject. Take, for instance, the extensive bibliography—perhaps the fullest bibliography there is on the subject in the whole world. It may be said that to compile a bibliography is not a difficult matter, and in one sense that is true, for one might merely copy the references from different writers. But a bibliography in the best sense is made by a writer who has read and digested the articles themselves. This Gibson did. In a measure we recognize this in reading the textbook itself, where in concise and simple language the observations and conceptions of the authors cited are given in many cases. But to gain a full idea of Gibson's mastery of his subject we have to turn to the articles he had written on special subjects and published in the journals of the day. In these articles subjects are dealt with in greater detail, and investigated with painstaking thoroughness, and the views of the writers are discussed and analyzed with a thorough and intimate appreciation of their standpoint. From such a critical study of his methods we can appreciate what the bibliography means, and we realize that the descriptions given in the book itself are mere summaries of the extensive investigations he had made.

Another excellent feature in this work is the manner in which he illustrates many important lessons by the citation of cases that had come under his notice, and the admirable way in which he brought to bear upon the subject the most recent and accurate knowledge obtained from other sciences, to explain the phenomena presented to the physician.

I speak warmly of his book, for it has been to me of the greatest service. When I take up the study of any branch bearing on the heart, and I wish to understand what has been done before, to this work I invariably turn for help, and I am never disappointed. Not only do I find the subject summarized, but the source of knowledge is always so accurately given that I have little difficulty in finding the article from which he derived his information.

The Movements of the Heart.

To realize the great strength of Gibson as a clinician it is necessary to consider some of the subjects which he personally investigated, for in this way we shall see how it comes about that his work is of such value, and what are the nature of his contributions to clinical medicine, for, as I have already said, a great many subjects that he dealt with were illumined and advanced by the results of his own study and observations. I select for this purpose subjects which are yet far from being settled and determined because they have a bearing on the researches that are being carried on, and will be pursued for many years, and because it was in being in the forefront of all that was progressive we see Gibson at his best.

One of the most obscure subjects in medicine, even at the present day, is the interpretation of the movements of the human heart, as perceived on examining the precordium. These movements are so puzzling to the eye and to the touch, and are so varied in different individuals, that no comprehensive and accurate description exists. This is due partly to the fact that the degree of exposure of the heart to the surface varies so much, depending partly on the state of the lungs, partly on the size of the heart, and partly on the nature of the enlargement, when there is an increase in the size of the heart. This matter is briefly dealt with by Gibson in his textbook, but to understand how he obtained his information we must go back many years. In 1880 he published an article with a colleague (Dr. Malet) describing an investigation he had conducted on one of those rare cases in which a congenital defect in the sternum was present. In the first article he gives a careful description of the deformity, pointing out the embryological facts that had a bearing on its causation. The defect in the sternum was in the upper third, and the portion of the heart that was thus easily examined was the conus arteriosus. By applying the button of a cardiograph over the exposed region he obtained a series of movements during the cardiac revolution, which he analysed carefully and accurately. The main fact brought out in these tracings was the recession of this portion of the heart from the chest wall during ventricular systole. On account of the fact that the apex of the normal left ventricle pushes against the chest wall during systole, an idea was and is widely prevalent that all the chambers of the heart and all portions of the heart during systole act in the same manner as the apex of the left ventricle. Thus we not infrequently find descriptions of the pulsation of the right ventricle in the epigastrium, in which it is assumed that the pulsation is due to the contractions of the right ventricle, when, as a matter of fact, it is the filling of the ventricle during diastole which causes the pulsation. Many phenomena of this nature are wrongly described, because the fact which Gibson so carefully explained is lost sight of. He shows clearly that the portion of the left ventricle below the aorta, so far from giving an outward thrust during systole, retracted markedly during systole, and distended or pushed out during diastole. In this paper he also described a sound produced by the systole of the auricle, an observation which many years later guided him to detect the contraction of the auricle during the long standstill of the ventricles in cases of complete heart-block.

In a second paper he dealt with another series of observations from the same individual. He obtained a record of the movements of the chambers of the heart with a time marker. He described with great care and precision the duration of the cardiac movements, and recorded the relative time occupied by the systole and diastole of the auricle and ventricle. The value of the article is enhanced by the comparison he makes with the results obtained by physiologists. The subject of the cardiac movements is still obscure, and this article, though written so long ago, is probably the best and most instructive on the movements of the human heart that has ever been written. As one who has attempted to deal with the same matter, I recognize its difficulties—difficulties, indeed, so great, that most people shrink from grappling with them.

Tricuspid Regurgitation.

Another subject with which he dealt has a very important bearing on practical medicine at this day, particularly as its clinical manifestations are widely misunderstood. The notion is prevalent among many clinicians, more particularly on the Continent and in America, that tricuspid regurgitation is a sign of very grave significance, and that it can only occur during the later stages of extreme heart failure. The teaching, however, in these islands, and especially in the Edinburgh school, has been quite different, though not infrequently writers in this country do not realize the real nature of tricuspid regurgitation. The reason for the more accurate appreciation of the condition in this country and in Ireland is due to the fact that our anatomists, our physiologists, and our physicians for more than a hundred years have realized the difference between the valvular mechanism on the right side of the heart and that

on the left. Thus, John Hunter drew attention to the imperfection of the tricuspid valves for the closure of the orifice. Wilkinson King, in 1832, approached the subject from a biological aspect, and showed how in certain diving animals this incompetence of the tricuspid valves was specially devised to permit regurgitation to relieve the right heart when the flow of the blood from the right ventricle was hindered by the cessation of breathing. Recognizing the principles involved, he spoke of the "safety-valve function" of the tricuspid valves in the human heart. Dr. Gibson wrote a very instructive article on this subject as the result of a series of careful experiments on the human heart. In these experiments he tested the competence of the different valvular orifices on the right and left side of the heart, using an arrangement by which he could make the valves bear a column of water, and could raise the height of the column until the valves leaked. In this manner he was able to demonstrate the ease with which incompetence could occur on the right side compared with the left, and especially that a slight increase of pressure caused incompetence of the tricuspid valve. In describing these experiments he quite recognized a fallacy that was present, in that the dead hearts on which his experiments were conducted had not the vital quality of the living contractile muscle. Nevertheless his observations have been supported by physiological experiments, for it has been found that in the dog's heart a rise of pressure in the right ventricle is often difficult to obtain, because of the ease with which tricuspid regurgitation takes place.

In the original paper dealing with these experiments Gibson entered very fully into the discussion of the symptoms that tricuspid regurgitation would provoke in the human subject, especially dealing with the question of a tricuspid systolic murmur, and the regurgitant waves sent back into the veins of the neck. It is a paper of an original kind, and the first to deal with an important subject from a careful clinical standpoint. The subject was dealt with by him again and again in later years, as in his textbook and some of his addresses.

Tricuspid regurgitation is not a matter of mere academic importance. Had this teaching of Gibson and of those others who had recognized its meaning and clinical significance been fully appreciated, the science of clinical medicine would have been greatly advanced, and the erroneous conception of the mechanism of heart failure, which has fettered and hampered medicine for fifty years, would never have been imposed upon the profession.

I refer, in this statement, to the notion that heart failure sets in by what is called backward pressure. This notion proceeds on the assumption that heart failure starts on account of the left ventricle becomes embarrassed in its work from a variety of causes, and that in consequence of this embarrassment the ventricle dilates, and regurgitation takes place back into the left auricle. As the failure proceeds the lungs are supposed to become engorged, and the right side of the heart is in its turn embarrassed, and the tricuspid valve is supposed to be the last defence from extreme failure of the heart, and as soon as tricuspid regurgitation takes place then matters have become very grave indeed; hence has arisen the notion that tricuspid regurgitation indicated a very serious state of affairs. Now this very prevalent notion of heart failure is essentially armchair in its origin. Its originators had detected certain signs, as congestion of the lungs, dropsy, and engorgement of the liver, but instead of watching cases to see how these symptoms arose, when incidents would have been detected which would have explained them, they were content to theorize, and, as usually happens in theorizing over vital events, where all factors cannot be recognized, the theories led them astray. Regurgitation through the tricuspid valve had to fit into the scheme of this back-pressure theory, and evidence for its presence was found in several ways. One was the perception of waves of blood sent back into the jugular veins, and more than thirty years ago one particular form of jugular pulse, then called the "positive jugular pulse," was set down as the special evidence of tricuspid regurgitation. No doubt tricuspid regurgitation was present in such cases, but had the clinicians recognized that tricuspid regurgitation was an event which could occur in a healthy and normal heart, as insisted upon by Gibson and others, they would have been compelled to search for some other

explanation of this characteristic sign. With the discovery that this form of venous pulse occurred frequently simultaneously with the onset of extreme heart failure and with the change of the rhythm of the heart from the normal to a new and irregular rhythm—which we now recognise as due to auricular fibrillation—a truer conception of the mechanism of heart failure would have been obtained.

To-day the lack of knowledge of this fact that incompetence of the tricuspid valve can easily arise and produce a murmur still hampers the profession. A systolic murmur with its intensity greatest about mid-sternum is frequent in healthy young people, but its significance being misunderstood, large numbers of people are made to undergo treatments of different kinds for a supposed cardiac defect, and in consequence their lives are hampered and restricted, and should they seek posts for which medical inspection is required, they are not infrequently rejected as unfit.

Clinical Application of Physiological Experiments.

If we wish to get an example of Gibson's power for the clear elucidation of confusing matters, we could not do better than read the instructive and succinct account he gives of the development of the heart, and of the malformations that arise from deficiencies in its development. Those of us who have had occasion to inquire into this subject know how difficult it is to grasp the facts. The knowledge of the embryology of the heart is still imperfect, and in consequence the explanations of the various congenital defects are lacking in precision. Probably nowhere can a clearer conception be obtained of this very difficult subject than in Gibson's description. We find every embryological observation of value clearly described, and the knowledge thus acquired applied to the interpretation of those signs that puzzle us so much when we meet them in patients. So far as I know, it is to Dr. Gibson we owe the differentiation of the signs produced by one of the more common forms of congenital malformation—that due to the patent ductus arteriosus. The facts laid under contribution in this succinct account of congenital abnormalities included a series of careful observations he and Dr. Lockhart Gillespie had conducted. This inquiry shows the difference in thickness of the right and left ventricular walls during embryonic life and infancy. It is well known that the thickness of the walls of the two ventricles are nearly equal during fetal life, and these investigations demonstrate the greater increase of the left ventricle after birth.

Probably no one excelled him in this ability to unravel the obscurities which surrounded much of the purely scientific work, and applying the knowledge to the interpretation of clinical phenomena. In mentioning the word "obscurities" in relation to experimental and embryological observations I do not mean to imply that they are obscure to those trained in these branches of science; but I think that few readers who have had no special training in these matters can understand the involved technicalities which are used to describe many of the experiments and observations, while still fewer are able to apply these to the manifestations at the bedside.

Within recent years a great advance has been made in our knowledge of the action of the heart and of its abnormal activities, although its application to clinical medicine is of recent date. The knowledge which has enabled clinicians to recognize and interpret many obscure phenomena has arisen through the recognition and understanding of the true meaning of physiological research. Down to thirty years ago there was a gradual increase of knowledge relating to the causes of the heart-beat; but it is from Gaskell's researches that the conception of the heart-beat really acquired such a clear and definite meaning that the knowledge could be applied to clinical medicine.

Gibson's textbook came out at that time when the ideas first promulgated by Gaskell were beginning to affect the trend of thought in clinical medicine. These experiments taught us the fact that the muscle fibres of the heart possess a number of peculiar functions, and that a contraction of the muscle fibres was the result of the harmonious action of all these individual functions. Engelmann later explored anew these functions, and

amongst other things demonstrated how their unequal activity resulted in the production of irregularities in the heart's action. At the time Engelmann was performing these experiments in Utrecht a practitioner in general practice used to spend his spare time watching and following them. Although these experiments were conducted by Engelmann on the frog's heart, it occurred to this practitioner that he had recognized similar irregularities in the hearts of his patients. He began to examine his patients with more care, and obtaining graphic records, was able to demonstrate that the interference with the functions of the heart muscle which Engelmann had demonstrated was also recognizable in the human heart. When Wenckebach published his book upon these irregularities amongst the first of our clinicians to appreciate this work was Gibson. In his Morison Lectures he dealt with this subject, and although readers generally find it complex and difficult to understand, yet Gibson's description makes the whole matter simple and intelligible. With the opening up of this subject brought about by these new ideas a great stimulus to the desire for knowledge took place in other fields. Thus the more minute study of the heart resulted in the very elaborate and detailed investigations of the auriculo-ventricular bundle by Tawara, who described definitely the nature of the connexion by which the stimulus passed between the auricle and the ventricle, and confirmed the earlier observations of Stanley Kent and His. The later researches of Keith and Flack revealed a peculiar node of tissue near the mouth of the superior vena cava, and recent researches show that this is in all probability the starting point of the heart's contraction. Such work would naturally attract Dr. Gibson, and his writings show that he was amongst the first to appreciate it.

The whole history of this matter, and a due appreciation of the somewhat complicated details, are dealt with by him in the annual oration on the cause of the heart-beat before the Medical Society of London, delivered on May 27th, 1907, where he gave a summary of the whole subject, and clearly and dispassionately discussed the views at that time exercising certain scientific circles—whether the action of the heart was caused by neurogenic influences or by myogenic. Although Gibson himself favoured the former of these views, his clear mind recognized the difficulties and complications, and his exposition is free from any bias, and is a reasoned and temperate survey that will well repay study.

His attention as a physician was frequently arrested by the clinical evidences that bore on this matter, and in several fields he was able to add to the stock of knowledge. This was particularly the case with that condition which we now recognize as heart-block, and which he discusses in his textbook under the heading of Stokes-Adam syndrome. In view of his subsequent work on this subject, at first in the Morison Lectures, and later in his very full description with Dr. W. Ritchie of the celebrated case of Sir W. Gairdner, it is interesting to note the remarkable advance that has been made in our knowledge within a few years. In his textbook, referring to the cause of the infrequent heart action and the attacks of syncope which characterize the Stokes-Adam syndrome, he states: "It is futile to peer further at present into the gloom surrounding the subject. Until we know how such a disease as influenza can cause two patients, apparently closely resembling each other, tachycardia on the one hand, and bradycardia on the other, we must be content to leave this matter unsolved." When a writer of such profound knowledge as Gibson made the above statement in 1898, and when a few years later he found it possible to demonstrate clearly what had seemed then an insoluble mystery, the fact gives great encouragement to those engaged in clinical medicine, for when it seems hopeless to unravel some of the mysteries that baffle them they may remember this incident and hope that the solution may be near at hand.

I might illustrate in many ways Gibson's instinct in recognizing good and valuable work before it was generally appreciated or understood. I will, however, limit myself to a reference to one piece of work which deserves to be known by all investigators in cardiac matters. I refer to MacWilliam's work on the rhythm of the mammalian heart. These researches were published in the *Journal of Physiology*, and the author has told me that they received

little or no attention even from those who were engaged in similar work. Of late years, with the perfection of clinical methods, we are able to distinguish a great many peculiar actions of the heart previously unrecognized. Many of these MacWilliam made it easy to recognize by his description of the mode of response of the heart to certain stimuli. In his Morison Lectures and elsewhere Gibson cordially recognised the value of this work, and sought time and again to utilize it in explaining clinical symptoms. In this he anticipated all other clinicians. A few years ago, in considering the cause of sudden death, I felt convinced that MacWilliam's observation that it was due to fibrillation of the ventricles was the only explanation, and I fancied that I was the first clinician to accept this view. Reading this Morison Lecture recently, I find that Gibson in discussing the probable cause of sudden death had already considered and adopted this explanation some years earlier. However casually such a statement seems to have been made, it was invariably the expression of a very full and intimate knowledge of the subject with which he was dealing. If, for instance, we take the brief account of Cheyne-Stokes respiration in his textbook, we find it simple and clear, and are apt to think that it required only a trivial amount of work on his part. Turn, however, to his monograph on this subject, and we will find the subject discussed in a very full and erudite manner, and its historical aspect and the conflicting views and observations of a large number of writers dealt with. Although he attempts no explanation of the phenomenon, yet the manner in which he examines and subjects to criticism the various theories establishes the fact that no explanation up to that time was sufficient. In this he did a great service, for next to demonstrating the true cause of any phenomenon the best thing is to recognise our ignorance, for that makes manifest the need for inquiry.

THE INTERPRETATION OF SENSATIONS.

Turning from the cardiac field in which he did so much, we find that he was equally on the alert in appreciating and understanding work in other fields. Although some people are inclined to consider that the possibilities of clinical medicine are being exhausted unless new methods are to be discovered, Gibson realized, on the contrary, that there were many fields which had been imperfectly explored by the simple methods of examination in everyday use. This applied, for instance, to our great lack of knowledge of the nature of the individual's sensations. Here is a field that is open to every one, and it is seemingly so simple and self-evident that most people are under the belief that all the information that is possible to be obtained from this source has already been acquired. Yet when we seek to understand the mechanism by which the most common of sensations are produced, we at once realize how little after all we know about the production of symptoms. Now, if it be realized that the first inefficiency of any organ is bound to mar that harmonious action of the whole organism which we call health, it will be understood that the first evidence that something is amiss must in the nature of things be a consciousness by the individual that there is something discordant in his life. A more minute and careful study of the patient's symptoms will indicate the presence of mischief long before any physical sign is revealed. Even the most frequent and the most urgent of all symptoms—pain—remains a great mystery. The factors concerned in its production, the mechanism by which the sensations are perceived, the associated phenomena that arise along with it, are imperfectly known. In the past, indeed, as in the present, our knowledge of the anatomy and physiology of the various organs was, and is, imperfect. Still, in recent years much has been done, and the advance in knowledge has come about through a better understanding of the complicated nervous supply of the viscera, from the researches of one of the greatest physiologists the world has ever seen—W. H. Gaskell. The advance in this branch of clinical medicine was impossible until Gaskell demonstrated, by long and laborious work, the meaning of the great sympathetic system of nerves. Although Gaskell did not concern himself about the application of these discoveries to clinical medicine, yet their significance was not long in being appreciated—first by James Ross. Understanding as we do Gibson's lively interest in all

fields of medicine, it is not surprising to find him utilizing the knowledge thus placed at his disposal. Here, again, his power of assimilating complicated details and of summarizing the essentials has been of the greatest service. In his work on *Diseases of the Heart*, and with greater fullness in his Morison Lectures, he gives a clear description of Gaskell's great work, and selects those portions of it which are applicable to clinical medicine. Those who are desirous of understanding the nature of the field for clinical inquiry that has been opened up cannot do better than study his remarks on this subject. Here they will find how, step by step, our knowledge of this subject has been acquired; they will find the researches by physiologists and clinicians carefully summarized. In the last address he delivered he adds the recent interesting and important investigations of Ninian Bruce. In addition, while describing these different researches, he advanced the clinical side by the results of his personal investigations.

GLANDULAR SECRETIONS.

Before closing this very imperfect review of some of the writings of Dr. Gibson, I would refer to the last address he gave—the address on medicine at the Liverpool meeting of the British Medical Association—which dealt mainly with the effects of glandular secretions on the body. I refer to it as illustrating how Gibson kept himself informed of the latest developments of knowledge in widely scattered fields, and the masterly manner in which he applied the laboratory results in his clinical work. This is but a repetition of what I have said in regard to other subjects, but in addition this address has a mournful interest. It was written and delivered when already the sickness which ultimately prevailed had laid its heavy hand upon him, and at a time, too, when his professional duties called for unceasing toil. It shows the brave spirit of the man, though broken in health, devoting himself to the work he loved so well and steadfast in his mission.

GIBSON'S INFLUENCE.

Before concluding my references to the influence that Gibson exerted on the progress of medicine there is another feature, one of a rare kind, to which I must refer, as it throws light upon one side of his character, and accounts for much of the esteem and regard in which he was held by his colleagues, and especially by those who were striving to advance medicine under difficulties. I refer to this element in his nature with the greater insistence, as it illustrates a trait which is rare in men of his position, not so much for its absence as for the fact that few realize its necessity. I have referred to the readiness with which he welcomed any new light thrown upon the problems in clinical medicine. To those workers Gibson invariably extended a warm welcome and a cordial appreciation, and was ever ready and willing to lay the vast stores of his knowledge at the disposal of any sincere inquirer. Perhaps I shall bring this more clearly before you, and illustrate how valuable assistance may be given to the advance of medicine by its teachers, if I cite the occasion of my first acquaintance with Gibson. Those of you whose lives are spent in the peaceful serenity of these academic groves little realize the struggles and difficulties that confront your pupils when they go out into the wilderness. After completing his education, the youthful doctor goes into the world convinced that he is equipped with that knowledge which will enable him to wrestle with disease in whatever stage or form it presents itself. He soon realizes that this is little better than an illusion. The people who consult him complain of things he never heard of, and disease presents itself under totally different aspects from what he had seen in his hospital training. He longs to lay his trouble before his teachers, feeling confident that then his difficulties would be cleared away. It may be that after a time he realizes that these difficulties can only be cleared away by understanding more clearly the nature of the complaints by which he is confronted. He then begins to observe for himself. It may be that he discovers signs and symptoms that have hitherto been overlooked or imperfectly described. He cherishes the fond belief that if he could but meet his teacher and lay his observations before him his trouble would disappear. To this end he

may make a pilgrimage to his old school and seek to lay before his revered teacher the matters that have vexed his soul. Alas! the illusion is soon dispelled—the yawning indifference with which the recital of his experiences is received chills his enthusiasm and shakes his faith in his teacher.

Such, indeed, had been my experience, and when I took courage and sought to publish my early observations I fared no better, my early endeavours being invariably disposed of in the learned editor's waste-paper basket. At last an editor friend, being short of copy, published my observations. No doubt they were not of much value, and my idea of their importance was probably excessive. Nobody seemed to take the slightest notice of them. Still, there were a few facts which were then for the first time described, and observations of late years have confirmed them. Nevertheless, at the time of their publication they were simply ignored, and I thought that no one troubled about them until one day in a bookseller's shop I accidentally met Dr. Gibson. At this first interview he referred to my work, and I admit that I felt flattered that one of the brighter spirits, who was then rising in the horizon of fame as a capable clinician, should have been interested in my work. This gratification was all the more real because he had grasped my meaning and my intentions and discussed them with a fullness of knowledge that showed that his interest was not mere surface courtesy. To me, an obscure general practitioner, this interview with a brilliant teacher gave great encouragement to prosecute the work upon which I was engaged. Through all the years that have passed since then I always knew that I had one capable reader to appeal to. His criticisms were always valuable and by no means always complimentary, for he brought a rare judgement to bear upon the subjects under discussion, and he had a power of expression at once forcible and direct. By such discussions new ideas were developed, which helped both of us to find out the truth. To him, as to his writings, I always turned when I wished to know the history of any matter or when I wanted the most reliable and the most recent views, for as I have said, I know of no one who had read so much and who had digested his reading so well. You can understand how grateful a place he holds in my memory, and how, as a slight return for the great help he ever was to me, I have attempted to show the position in medicine that Dr. Gibson held.

So far I have spoken of Dr. Gibson as the distinguished physician, but he was equally remarkable in other ways. It is scarcely necessary that I should dwell upon the fascinating personality of the man—the manly bearing, gracious manner, and the bright and cheery smile which endeared him to all. Those who were intimate with him knew him as a most delightful companion whose wealth of amusing anecdotes and whose versatility and remarkable facility of expression rendered his company the most fascinating. To us he was ever the lover of truth and hater of humbug. Those who were in trouble or in suffering recognized the sincerity and depth of feeling of this large-hearted man. I frequently come across patients who have been under him, and they all express the deepest devotion and gratitude for the manner in which he dealt with them. This manner was no mere pretence, but was the expression of a man of profound sympathy, as many of his colleagues can testify, for he would spare himself no labour to help a friend in trouble, and his purse was always at the call of distress. I have seen him in many phases, but none impressed me so much as the real manifestations of sympathy he extended to us when the hand of sorrow was heavily laid on my household. This testimony also many others can bear, and we feel the world is poorer, and I feel that Edinburgh is no longer such an attractive place to me, since George Gibson is no longer here.

THE Association of German Scientists and Medical Practitioners will hold its eighty-sixth annual meeting this year at Hanover in September (20th to 26th).

THE Medical Faculty of Turin has decided to erect a memorial to the distinguished physiologist, Angelo Mosso, in the institute in which he taught for many years. The memorial will be unveiled on November 14th, 1914, the fourth anniversary of Mosso's death. Contributions should be sent to Professor Alberto Aggazotti, Corso Raffaello, n. 30, Torino.

A Clinical Lecture

ON

PHENOMENA ATTRIBUTABLE TO SPASM OF CEREBRAL VESSELS (ANGIOSPASM).

BY

WILLIAM RUSSELL, M.D., F.R.C.P. EDIN.,

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I PROPOSE to speak to you to-day on some points bearing upon the blood circulation in the brain and of phenomena due to disturbances of that circulation. Owing to the position of the brain within the cranial cavity, local disturbances of the circulation are difficult of proof; they can only be assumed from the clinical phenomena which may be present and from our knowledge of the dependence of local function upon an efficient local blood supply.

The special condition I propose to speak about is spasm—constriction of the arterial channels in localized areas of the brain; the term "cerebral angiospasm" is given to the condition. Although the cerebral vessels cannot be seen, the vessels of the retina can be examined by means of the ophthalmoscope, and it has been clearly established that angiospasm occurs in these vessels. Various observers have noted that a temporary loss of vision of one half of the retinae may be associated with marked diminution in the size of the retinal vessels corresponding to the blind field, and that vision returns with the relaxation of the constricted vessels and the re-establishment of the normal blood supply to the part. From these observations alone it is fair to postulate that corresponding constriction can take place in the arteries in localized areas of the brain.

Migraine.

This can be illustrated from a common and well-known disorder, namely, migraine.

It is a well-established clinical fact that in migraine such disturbance of vision as has just been referred to is by no means uncommon, and that it can be shown to be associated with the change in the retinal vessels referred to. In migraine, however, there are other temporary phenomena which must have their origin in the brain—of these perhaps one of the commonest is partial or complete loss of power of one side of the face, of one limb, or of both limbs on one side. Other temporary phenomena are characterized by disordered sensation or temporary loss of sensibility; the distribution of such phenomena being usually, if not invariably, one-sided, and affecting either side. These phenomena and the explanation which I have given you as to their causation are now pretty generally recognized and accepted.

Loss of Memory.

There is, however, another set of phenomena which I venture to think may be explained on the same hypothesis, namely, the loss of memory of recent actions which ordinarily imply not only active volition but conscious volition; this set of phenomena is illustrated by what frequently occurs in old people. Old people tend from time to time to get restless and sleepless, and noisy or active during the night. In an attack of this kind, an old person will get out of bed, disturb the other inmates of the same room by interference with the bedclothes and by other acts; they will go to the fire and interfere with it; light matches without any apparent object in view; and the following morning have absolutely no recollection of what had happened during the night; they may even state that they have had a good night and slept well. Periods of mental excitement and incoherence come on in the same way, and may be followed by mental coherence during the day; and here also there is no recollection of the restlessness and incoherence of the night. Cases of this kind may show, during the periods referred to, a definite constriction of systemic arteries; and when this occurs it is found that the most suitable remedy for removing the symptoms is the administration of a vasodilator. So impressed have I been with this experience that, whenever such cerebral symptoms occur as I have referred to, and if the condition of the arterial pulse even