

In Address

ON

THE INFLUENCE OF MORGAGNI ON ANATOMICAL THOUGHT.

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(Translated for THE LANCET by Madame L. WOLFFSOHN and revised by THE AUTHOR.)

ALTHOUGH the history of medicine has always had a certain connexion with the history of the general culture of mankind it still offers a few remarkable peculiarities. In the first place, without a break in continuity for about twenty-five centuries—from the time of Hippocrates until now—the consciousness of this connexion has never been lost. While religions have changed and systems of law have superseded each other medical traditions have still been preserved. The terminology of to-day, and even the barbarisms of youthful writers, try to preserve the appearance of Hellenistic origin. No other science has ever been in its origin so firmly grounded and none of them is really so old as that of medicine. The history of medicine, such a long continuance of the doctrine, would scarcely have been possible if there had not been an element of unity in the object with which it concerns itself, an element which outlasts all changes of time and place and which presents the same problem of research to each succeeding generation, the problem of disease. Of course, particular diseases differ according to place or time, but the inquiry into the science of disease in general always remains the same; and the task of the physician—the preservation of health—does not cease whether it be in Italy or Russia, in America or Europe. At first sight nothing is so marked or confusing as the change of medical schools according to time and place. Certainly, until towards the Middle Ages all the schools were to be found in one or other of the countries bordering the Mediterranean. The Asclepiades and their successor, Hippocrates, had taken their doctrines from the policlinic of the Temple of Cos and other pre-Asiatic places, whence the new doctrines spread over the whole Grecian world more rapidly after the rise of the empire of Alexander the Great. The first Greek physician appeared in Rome in the time of Cicero. Galen brought the pathological doctrine of Hippocrates with him from Pergamos. But even then no change of doctrine took place. The humoral pathology of Galen did not pretend to be anything but a faithful exposition of Hippocratic teaching; although more than half a century separated the two men posterity had accustomed itself to consider the two as contemporaries, nay, almost as manifestations of a single personality. Rome furnished no rivals during the century. The only classical author of the Latin race was so little original, and, what is still more marked, so little general, that he only acquired renown for his interpretation of portions of this doctrine. It was only in the Eastern portion of the Roman Empire that the school preserved any activity; in Asia Minor, as well as in Byzantium, independent authors existed, who, however, owe their fame to the study of special branches of the system. Nevertheless, humoral pathology remained, and especially in the form which it had received from Galen, the acknowledged doctrine of the whole civilised world east and west. The four cardinal humours, the *χυμοί* of the Greeks, were everywhere considered the foundation of physiological and pathological modes of study of the component parts of the human body and of the changes they indicate during the course of disease. Every disease, according to that doctrine, appeared to be a change in the mixture of the juices in parts or in the whole of the body. It is therefore an idle question to ask how they arrived at this conception and where the doctrine found its origin. The only other Mediterranean country which has left to us a more comprehensive medical literature, Egypt, offers us no sufficient basis for a possible explanation. As to other more remote lands, we only have some few works from India in which certainly links may be recognised, but they also differ considerably in various parts, and no intimate connexion can be discovered between

them. At all events, none of these countries has ever had a decisive influence on the progress of the doctrine of medicine. The first influence of this kind belongs to quite another time and to quite another region. This influence also has been raised on the foundation of humoral pathology. When after the decline of Alexander's kingdom a series of independent kingdoms arose out of the ruins of his conquests, the seeds of medical science were preserved amongst peoples who until then had seemed to be quite without the pale of the interests of science. Smaller and more local centres formed themselves in Syria and in Persia, and there arose continuously a line of noble physicians, who not only gained influence in their native homes, but spread this doctrine far and wide. This was the period when the Jews and Arabs distinguished themselves as amongst the most respected teachers of medicine. Quite lately, in our own time, have Hebrew manuscripts been brought to light, which prove with what zeal and learning the Jewish physicians of the early Middle Ages preserved and furthered the science of medicine. The inherited capacity of the Jews, who since then have done so much for the advancement of science, was very apparent at this period. The Greek heroes might have fallen into oblivion had it not been for the Arabs, who held aloft the lamp of science; first in Mesopotamia and neighbouring lands, then in North Africa and especially in Spain they founded schools which became the nurseries of science for the West. Here were read the Greek authors translated into Arabic and interpreted in the light of progressive experience. The Arabs brought a new and influential element into medical thought, the doctrine of the Spirit, an element almost entirely foreign to the objective mind of the Hellenes except in a similarity which I wish particularly to mention. In Hippocrates the idea is scarcely found at all, but among the shepherds and nomads of the East belief in supernatural powers had been preserved no doubt from prehistoric times. These, different from the natural powers of the material world, were effective partly outside the body in independent existence, and partly within it for a shorter or longer time. The "vital air" was considered as a prototype of this, and found expression in the Hellenic term *πνευμα*, and in its inferior phenomena was called by the Latin translators "Halitus," and in its higher manifestations "Spiritus." Echoes of this thought have even in our time arrived at a position of some importance in the form of animal magnetism, spiritualism, and also to some extent in hypnotism. Among the Arabs all this lay in the region of speculative thought, such as a lonely brooder might evolve at his fireside. A kind of natural history background was gradually formed for him out of a second mode of observation, the chemical, by which the Arabs acquired such an important position in the history of natural science. It is well known they were the creators of this form of investigation, which only at the end of the last century assumed its true position among the natural sciences. The Arabs themselves never got beyond alchemy, but in taking the first steps in analysis and synthesis, and by the methods of extraction, of distillation, sublimation, precipitation, and the procuring of pure metals and salts, confirmed still more the idea that finer matters were hidden in the raw substances, and these were in their ideas the real forces of nature which underlay the activity of the grosser matter. Thus the idea of spirit came gradually to be linked with the conception of a true reality, a refined embodiment of the effective forces, and in this kind of special vitalisation this idealistic conception was imported into the western world, which even in prehistoric times held ideas that foreshadowed these. The contact of the western with the eastern countries at the time of the Crusades contributed largely to ensure the entrance of such ideas into the minds of eastern peoples. Perhaps that would not have had much influence, but there then existed no western science at that time—at least, no medical science. The West received its scanty store of medical science directly from the learned schools of the Arabs, partly from Spain, and partly from North Africa. For Spain the principal point of contact was Southern France; for North Africa, Southern Italy. But, while the importance of Montpellier developed itself slowly and almost imperceptibly, the school of Salerno has remained the place where the breach was made through which the ideas penetrated which Constantine had imported from the East in the eleventh century. To this was soon added the monastery of Monte Cassino, and the transmission of this doctrine to the Benedictines, as well as later the acceptance of this doctrine in the monasteries. It

is not surprising that the medical science of the monks should be the old humoral pathology. When it was seen that the medical science of the Arabs was found in the Greek authors people began to translate the Arab translations into Latin, and these revised translations very much later have been the foundation of the study of medicine, not only in Italy, but in the whole West. When Latin since the time of Charlemagne had become the speech of science, Hippocrates, and, in a greater degree, Galen, were acknowledged by the Church, and they acquired by and by, although not through the express sanction of the Church, the position of real fathers of the Church, to doubt whose reliability would be considered a sacrilege. So that the doctrines of Galen, already venerable by age, became the absolute dogmas of the Church. It would, perhaps, have happened differently if that kind of institution in which modern medicine has found the real source of her knowledge had then existed—I mean the hospitals (*Krankenhäuser*); but the so-called hospices of the Middle Ages, especially of the early Middle Ages, were indeed mainly intended for pilgrims and afforded a short rest to the traveller, whilst the priests who superintended them had rarely an opportunity to give assistance to sufferers. It is true that not a few of these old hospices when they had existed a long time became true hospitals. To-day we must recall that the first hospital known to us, built on the Tiber Bridge in Rome in the seventh century, had been founded for Anglo-Saxon pilgrims. This was the Hospital Spiritus in Sassia, in connexion with which later, through Pope Innocence III., the organisation of the Hospitals of the Holy Spirit spread over the whole West. This hospital on the Tiber still stands in the old position transformed into a large non-lay hospital. I have before now described the history of these hospitals, and explained how little they did in the way of affording true help to those in need of assistance and to medical science.

Those among them deserving of mention in the history of medicine owe it almost unexceptionally to the circumstance that they were finally superintended by laymen, and, as a rule, were in the hands of the civil authorities, for only since the beginning of last century have the Governments almost everywhere taken a share in this humanitarian task, especially since medical instruction in the universities categorically demanded the use of hospitals for this purpose.

For my present purpose hospitals have but little concern, for I wish to show this great assembly how the old and dogmatising medicine regained its freedom and became modern scientific medicine. This remarkable change was led up to by a long series of battles that for the most part were fought out on Italian soil, although other nations contributed to this victorious result. The prize of this battle, or, more exactly, the prizes, have fallen to the science of anatomy. It is scarcely necessary to prove that throughout antiquity an opportunity was only once, and that during a short space of time, offered for anatomical researches on the human body. That was the time after the death of Alexander, when the government of Egypt fell into the hands of the Ptolemies. Afterwards a similar possibility was never again given to a physician of the ancient time. And so even Galen could recommend nothing better than to study animals which, in his opinion, were nearest to men—that is, apes and swine. As we can well understand, the sacrificial cult, which demanded the confirmation of the normal condition of animals and their organs, gave many an opportunity for comparative and even pathological observation. Even the usual sacrificial animals must often enough have given a thoughtful observer material for considerations and conclusions which were capable of being utilised for the determination of human pathological conditions; and there can be no doubt that Hippocrates already knew and made use of many facts that have been confirmed centuries later. But it is evident that both anatomy and pathology must remain hypothetical so long as no examination of the human body could yield strict proof of the particular condition of individual parts. The real difficulty lay in the Church. The natural dislike of the people to dissection of the human body was confirmed by ecclesiastical prohibition. To this was added that those who were convinced of Galen's infallibility had no need to dissect. Why undertake dissections if one knew the arrangement of the body? By means of this argument the singular dilemma was reached that hindered the development of anatomy for at least two centuries; in order to prove that Galen had erred dissections must be made.

Science demanded this; but the Church declared that it was quite certain that Galen had not made a mistake; therefore it was not advisable to undertake such reprehensible action. Here only the highest ecclesiastical authority could come to the rescue, and it finally decided in favour of science. In Rome itself there have never been wanting physicians who felt it their duty to forward the acknowledgment of truth in science, and not a few of the Papal body physicians have belonged, down to our own times, to the most energetic advanced guard in this struggle. Thus it is explained how, from the beginning of the fourteenth century, Mondini in Bologna got permission to dissect human corpses and demonstrate upon them before students. When once the path was opened up it became available for others. Thus the Italian universities gained a valuable extension of medical instruction at a time when it was still long lacking in most other universities, and thus there were anatomists in Italy when elsewhere such a line of study was not yet known. From that time there began a pilgrimage of students from northern lands to the Italian universities, particularly to Bologna and Padua, and sometimes there even arrived a man who had finished his studies but wished to complete here his full culture. Among these was also the young *savant* whose fate it was, by his own systematic researches, to destroy for ever the belief in Galen's infallibility, and then, at least in the anatomical field, to found in an ineradicable manner, the rights of necropsy. This man was Andrea Vesalius, of a Low German family, born in Belgium, educated in France, but who when professor in Padua arrived at the high position which enabled him to become the true reformer of the doctrine of the institutes of medicine and, at the same time, to conquer for anatomy, for all time, the position of a true (*gründliche*) science. Vesalius was one of those rare men of universal importance so seldom found to appear in history; so that almost all civilised nations of the Europe of that day—Italy, France, Germany, the Netherlands, and even Spain—could look upon and reverence him as belonging to them, and the value of his victories in anatomy was acknowledged at the same time with respect to all other branches of medicine. Nevertheless, it is not quite correct to call him the reformer of medicine. His anatomy, as such, was not able to set aside humoral pathology. Nothing could prevent the idea that the organs of the body, even those whose position, connexion, and arrangements were exactly known, were made up of four *humores*. To procure a change in this, it needed a direct front attack against the centre of the battle-line of the dogmatists against the doctrine of *crasis*. This was accomplished with the violence of a conqueror by a German, who, in truth, despised anatomy and used, instead of it, the Arabian tradition, but in a very changed form, as the means of his effectiveness. This man was Theophrastus Paracelsus, a contemporary of Vesalius. While proving the chemical impossibility of the four *humores*, and their acceptance as elementary matter, he succeeded, with the assistance of spiritistic additions, to build up a kind of anti-doctrine, which, mixed, half naturally, half spiritually, unfortunately acquired in the hands of his successors a predominantly mystical character.

It is difficult to say what might have proceeded from this doctrine, which, although bared of dogma, was on the other hand a prey to the most wilful subjectivity. But salvation was near. Already at the beginning of the seventeenth century William Harvey founded the doctrine of the circulation of the blood and thereby laid the foundation-stone of a new study, which soon arose gloriously beside anatomy—that of physiology. He, too, had come as a young man to Padua, principally in order to improve himself in anatomy. Under the direction of Fabricius ab Acquapendente he studied the arrangement of the bloodvessels and the heart, and so (instead of the blood as one of the four *humores cardinales*) he finally looked upon the blood as the "noblest humour," the real *humor cardinalis*. His doctrine of the circulation left only one gap, but that was a sensible one. He could not prove how the blood reached the veins from the arteries. To have given this proof through direct observation is again the merit of an Italian investigator, the celebrated teacher of the University of Bologna, Malpighi, who applied the new invention of the microscope to the observation of the living body and discovered the capillary circulation. In this way, to a certain degree, the crown was set on the building in the erection of which Vesalius and Harvey and innumerable other men of

science employed their powers. Thereby also was confirmed the change of the humoral pathology into a hæmatopathology, and a line of research founded, to the furnishing and transformation of which the following two centuries laboured, and which have not yet found their final close (ending). Strangely enough, none of the investigators above named arrived at the point of applying the results given by pure anatomy and its development into an experimental physiology to pathology; but no one can continuously occupy himself with anatomy without becoming attentive to the changes caused in the living body by disease. Indeed, we know that from Eustachio to Vesalius the pathologico-anatomical differences have occupied attention; but neither they nor their immediate successors have noticed these differences with such accuracy that the foundation of a practical doctrine of disease could proceed therefrom. On the contrary, the old idea that disease was something general became all the stronger the more the conviction that a single liquid streamed through the whole body and was the centre of all essential changes became fixed. Even the comprehensive studies of the great Leyden teacher, Herrmann Boerhaave, could not break down that conviction. It had only the result of removing the importance of local processes into the sphere of the interests of physicians; but it finally culminated in the referring of their local processes to the circulation. Therefore, the circulation always remained in the foreground of pathological observation, and Paracelsus's idea of the *vita propria* of the organs was set aside as a spiritualistic error. It was in this time that the fresh development due to Morgagni occurred. His good star first led him into surroundings which were less favourable to pathological than to anatomical study. Let us dwell on this for a short time. When Giovanni Battista Morgagni in 1698, at the age of scarcely sixteen years, left the school of his native place, Forlì, and went to the Bologna University, he found himself, so to say, placed in an anatomical atmosphere.

Everybody still remembered the discoveries which had been made by Malpighi, Aranzi, and Varoli. Morgagni first became closely connected with Valsalva, who made him share directly in his anatomical work and also introduced him to pathology and medical practice. In 1701 he received his diploma in medicine and philosophy, and a few years later the presidency of the *Accademia Inquetorum*, from which later on proceeded the *Istituto delle Scienze*. In 1706 there appeared his first independent production, the "*Adversaria Anatomica Prima*," which was gradually followed by further pamphlets. His fame grew so rapidly that the Venetian Republic called him to a chair in Padua in 1711 which had before been occupied by Vesalius. There was then developed such an extensive scientific activity that the number of students could not be accommodated in the narrow space of his lecture-room. I may venture, I hope, in spite of the international character of this Congress, to remind my hearers how large a share Germany had in this frequency, and how was developed a particular relation of our countrymen to the great master. As early as the year 1715 Malpighi was chosen by his German students as *patronus Germanorum*. With his help they erected a special house with a library, which bore the inscription: "*Incolyta natio Germanica adjuvante liberalissimo protectore Cel. viro Io. Bapt. Morgagni M.P.L.P. has sibi emit sedes.*" But even seven years earlier, in 1708, he had received from Germany the first great foreign distinction which he ever obtained: the *Accademia Curiosum Naturæ*—from which later on the *Accademia Cæsarea Car. Leopold. Cur. Nat.* was developed—elected him as member, and in 1732 as adjunct. How much Morgagni felt bound by these honours he has himself repeatedly proved, especially when, at about eighty years of age, he published the first book of his great work, "*De Sedibus et Causis Morborum*." It is dedicated to Trew, the well-known member of the above-named academy; and he showed the same gratitude (in the last book) to the Berlin Academy of Sciences, which, on the proposal of Johann Friedrich Meckel (to whom the fifth book is dedicated), nominated him member. The method of research, such as practised in Italy by Valsalva and Morgagni, was, in fact, the same used by the best physicians in Germany, in the first place by the members of the Academy of Naturalists, who had already published the first natural history medical review—the "*Ephemerides Naturæ Curiosum*." When one turns over the leaves of Morgagni's five books how often does one find quotations from that review, and how gratefully does the otherwise keen critic speak of those observers? Certainly, it was not only yesterday that German physicians

and naturalists visited Padua and Bologna with a kind of preference, and Italians will not take it amiss that we, when we cross the Brenner on the old imperial road, renew in those towns the memory of old camaraderie on the battlefield of science. Vesalius and Morgagni were the geniuses whose images always rise before us, whose fame has outlasted all the warlike deeds of later times, and at whose call we renew the old bonds. These bonds have nothing offensive to other nations. For Morgagni does not belong only to Italy, and still less to Germany; though he was not, like Vesalius, a citizen of several States, he still became in quite as great a measure the representative of science common to all peoples. To recall to memory his relations to Germany seemed to me a duty of gratitude for all that we have received from him; but I gladly acknowledge that a still higher duty of gratitude enjoins us all who are assembled here to offer to his spirit a tribute of acknowledgment for all that he has done for science. But who can briefly express what he has done for science?

When Giovanni Battista Morgagni, at the age of eighty-nine, closed his eyes for ever on Dec. 6th, 1771, he left to the world, as the outcome of the work of such a long life so early dedicated to science, the five books "*De Sedibus et Causis Morborum*." The new study which was thereby called into life was not then yet named with the name which it afterwards received—pathological anatomy; but everyone already knew that these books contained the sum of all practical knowledge of the material changes of disease which till then had been gained. The recent observations of Valsalva and the yet more numerous ones of Morgagni himself were here united with all the innumerable experiences which were scattered through the academical and periodical publications of all western countries. Morgagni had collected them with anxious fidelity. Unlike the frequently uncritical and unreliable collections and *sepulcra* of earlier times, every single observation was here controlled by reference to its sources and then exactly criticised, not only in order to fix the anatomical facts, but also to expound the relations of the same to clinical processes, and to form conclusions with regard to diagnosis and prognosis. It was by no means a mere work of collection and reference, like those of his predecessors—Schenk von Grafenberg and Bonet; it was rather a methodological guide; and, on the other hand, the aim of the book was not only the furtherance of anatomy as a pure science, but in almost a greater degree the development of the same into a fundamental science of practical medicine. So it is to be understood that the clinic did not attain its true importance until after Morgagni's time, and therefore we can say that, first with and through Morgagni, the dogmatism of the old schools was completely broken, and that *with him begins modern medicine*. But I have another observation to make. When I said that the work "*De Sedibus et Causis Morborum*" was also, from the methodological point of view, to be considered a pattern guide, I did not mean it alone of the method of actual observation and the *épicrise* of single cases, but also of the method of the scientific treatment of the doctrine of disease in general. Wherein does this method of Morgagni differ most from that of his predecessors? and in what consists its special merit? It seems to me that neither the historian of medicine nor the representatives of special departments of study have done full justice to the genius of the great Forlisan. Till Morgagni the general or casuistical contemplation of disease or of the patient stood for everyone before the considerations as to the nature of the disease or, as one rather said, as to the essence of the disease. The processes were examined, the symptoms fixed, the changes in the body were attempted to be discussed, all was collected into one picture of disease and a name was given to it. If, as was often the case, the real nature or essence of the disease was not ascertained, it was attempted to clear up the matter in a constructive way and formulate the result. Then anatomical, or clinical, or etiological points of view became decisive, and yet these names of disease (chosen from such different points of view) were treated as co-ordinated denominations. If one did not succeed with the local phenomena one helped oneself out with a hypothesis, whereby the most wild hypotheses were accepted as reliable—nay, even as scientific. What has not happened with fever and with inflammation? Is there an essential fever? Is inflammation an *einheitliche* idea? How different do the answers sound that have been received during the course of time to these questions? Morgagni, who observed diseases as an anatomist, did not consider the question of their

great meeting within her walls. All Western Europe, the whole civilised world in fact, is bound to honour Italy as the motherland of the Renaissance of the sciences, chief among which medicine owed to her for centuries instruction and resources enlarged by discovery. Torn as she has often been by civil strife and distracted by foreign aggression she has never wanted men vigorous in mind and buoyant with hope to keep always alight the grand beacons of science. And so we come to the modern era which has witnessed Italian unity, the rise of Italy to great power, and, with this, the multiplication of scientific institutions and the reaccession of Italians to the mighty League of Universal Medicine. It was to this grand result of Time that the last Congress did homage in choosing the Eternal City for the seat of its successor. This concourse "proves," continued Dr. VIRCHOW, "that the ancient yearning which drew the Northman to the smiling regions of the South is not extinguished; only, and Italians should know it, they come as friends, as brothers." "Physicians," he said, "are the born vindicators of humanitarian thoughts, habituated as they are to subordinate their own convenience to their neighbour's appeal, and to promote the cause of humanity by unselfish coöperation. They, more than the cultivators of other fields of knowledge, are destined to be the harbingers of peace and of charity. Every new International Congress reinforces the sentiment of solidarity in all the members of the corporation of the healing art, and stimulates the zeal in the search for a profounder harmony of the means which are destined to remove the obstacles impeding the welfare of the social organism. May the present Congress contribute to strengthen knowledge of truth, to enhance the intensity of the moral aspirations, to tighten the bond of fraternity between the colleagues of all countries; may it add another route to the many lines subserving the pacific intercourse of the nations."

The keynote struck by these consummate orators was played up to effectively by the speakers who followed, those of them who used Italian as their medium (and not a few of them did so with skill and effect) naturally eliciting the most marked signs of appreciation. From the inauguration theatre to the nineteen Sections the oratory of the presidents of the latter betrayed no decline either in originality of conception or in felicity of language. In truth, the Eleventh International Congress, if disappointing in some of its details—due, doubtless to the unprecedented proportions it has assumed—will be remembered as having outshone its predecessors in "medical oratory," a pre-eminence it could hardly have helped achieving under the inspiration of its presiding head, Dr. BACCELLI, who, at the second Congress of the series—that held in Florence a quarter of a century ago—drew from its French president the praise of having been the Demosthenes and the Cicero of its discussions.

THE history of medicine has from time to time to be re-written, not only in consideration of new facts disclosed by literary research, but also by reason of the fresher, larger, juster view that a more exalted standpoint enables the modern historian to take. This reflection is irresistibly borne in upon the reader on perusing such occasional surveys

of the medical past, recent or remote, as MOLESCHOTT gives in his memoir of DONDEERS, or VIRCHOW in his rehabilitation of GLISSON. It is not that new details have been brought to light in these masterly monographs: it is that familiar history has been re-read by a keener, more experienced, better trained eye; and the result is a juster, more scientific appreciation of the subject.

What VIRCHOW did for GLISSON he has once more done for an even greater personage, GIOVANNI BATTISTA MORGAGNI. The theme was well chosen in itself, and equally so was the occasion of treating it. A meeting of the International Medical Congress in Rome was a fitting opportunity of reminding the world of what Italy had contributed to medicine, and of all men to whom the task could have been committed, a German of the standing and scientific record of RUDOLF VIRCHOW was the appropriate one. The outcome of this happy coincidence is a chapter in the annals of medical, chiefly pathological, progress which will remain memorable when much of the proceedings of the Congress is forgotten—an essay not more admirable for its knowledge, its noble impartiality, and its luminous characterisation, than for its masterly brevity of style and the haunting felicity of its phrases. In reproducing it in full in our columns we are aware that the processes of translation have a ruthless effect on the bloom of verbal expression.

Medicine reveals to VIRCHOW, in spite of its twenty-five centuries, an unbroken, a manifestly continuous, development. Greek in its origin as a branch of nature study, it remains Greek to this day, as is apparent in its nomenclature, even in the barbarisms of the youthful moderns—barbarisms which labour to conserve at least the gloss of Hellenic origin. The retrospect taken by VIRCHOW is in this way far more reassuring than that of the traditional historian with his "revolutions of medicine," which he is apt to represent as gyrating in a vicious circle. Accretion, development, modification—all are features in the record of the art, bringing it, like every other human interest, within the supreme law of Evolution. The influence of the Eastern intellect on the Greek medicine is an especially instructive passage of VIRCHOW'S exposition. That spiritualistic element—that *πνεῦμα*,—in which he finds the first dim anticipation of magnetism and hypnotism, was an Oriental contribution of which not a trace is to be found in the purely objective mind of that Greek of Greeks—HIPPOCRATES. Passed through the Arabian alembic, the Greek medicine took a fresh departure, principally at Salerno, where GALEN lived again rehabilitated in Latin translations from the Arabic, but suffered from the contra-scientific influences of the Church. Here, again, VIRCHOW corrects a popular fallacy in the very restricted value he attributes to the mediæval hospitals under ecclesiastical control. These were, as their name implies, little more than "guest houses" where medical relief was but occasionally given, and that of a dubiously professional kind. Those among such institutions which really figure in the history of medicine owe that honourable pre-eminence to their having largely fallen into secular hands. Losing their sacerdotal character, they thus became auxiliaries rather than opponents in that struggle so decisive for the fortunes of medicine—the struggle for the enrolment of the healing art in the study of natural history—the