ART. IV.—*The Present Position and Prospects of the Domain of Therapeutics, with a Glance at its Relations to the Neighbouring Sciences.*^a By WILLIAM WHITLA, M.D., Physician to the Royal Hospital, and Consulting Physician to the Ulster Hospital for Women and Children; President of the Ulster Medical Society; Vice-President N. I. Branch British Medical Association; Fellow of the London Medical Society; Fellow of the Royal Medico-Chirurgical Society of London, &c.; Author of “Manual on Materia Medica and Therapeutics;” Examiner in Botany and Materia Medica for the Pharmaceutical Society of Ireland; Member of the Senate of the Royal University, &c.

GENTLEMEN,—My first duty is to express to you my appreciation of the honour you have conferred upon me in electing me to the Presidential Chair of the Ulster Medical Society.

It occurred to me that I could with advantage occupy your attention for a brief period, in which we might look back at what has been recently taking place in some departments of the great field of medicine.

That branch of medical science which has for its aim the treatment and cure of disease possesses, I think, the most interest to the majority of the members of our profession, and if you permit me to crave your indulgence I shall attempt to take a rapid survey of the present position and prospects of the domain of therapeutics, and glance at its relations to some of the neighbouring departments.

We constantly hear expressions of opinion about want of progress in this branch of medicine, and it appears to be fashionable in some quarters to lament that whilst pathology, bacteriology, physiology, gynæcology, and every other “ology” is progressing with rapid strides, the treatment of disease remains pretty much in the same position as it did a quarter of a century ago. It appears to me a suitable opportunity to look into this question for ourselves, and see, if this be true, how far it may be in our power to remedy it; and if it be untrue to expose the fallacy.

To the hospital physician, as well as to the busy practitioner, the term therapeutics too often means that vague and somewhat shadowy land where the contradictory results of experiments upon the lower animals are hopelessly blended with opposing theories and fruitless applications of the resulting fallacies to the treatment of diseases in

^a Being the Presidential Address delivered before the Ulster Medical Society, December, 1886.

mankind. Much difficulty will be at once removed if we clearly recognise that there are *at least* two distinct sciences included in the ordinary conception of the term therapeutics. For, in addition to the "treatment of disease" there is the science of pharmacology—the science of the action of remedies apart altogether from disease; a study of the effects produced by remedial agents upon healthy or normal physiological conditions. Though this department of experimental medicine may still be regarded as in its infancy, it is making enormous strides. Called into existence by the creative genius of Magendie, during the lifetime of some of my present auditors, it has developed under difficulties sufficient to strangle the growth and progress of any other branch of science.

Opposed in our own country by the morbid sentimentality and wicked ignorance of hysterical agitators, and obstructed by the restrictions of a shortsighted Legislature, still pharmacology has continued to enrich therapeutics and alleviate human suffering—rearing a lasting memorial, in the face of unparalleled obstacles, to the truly scientific and self-sacrificing spirit of practical medicine.

Whilst the successful treatment of disease must always look for aid and guidance from the results obtained by the experimental methods of research employed in pharmacology, at present the application of still unperfected results is one of the dangers which the practical physician has ever to be on the look-out for. It is the ill-judged and hasty utilisation of such pharmacological results which, perhaps more than anything else, has tended to throw doubt upon the progress made in therapeutics. As we really look beneath the surface the unprejudiced observer must see that the solid foundations of a scientific treatment of disease are being surely and permanently laid. Encompassed about with clouds of witnesses, I need at this stage in passing only refer to the researches of Brunton upon the action of the nitrites, of Frazer and Crum Brown upon strychnine, of our Continental brethren who have been investigating the actions of the chinolin series and the mydriatic alkaloids, of Matthew Hay, who has recently demonstrated the action of the saline group of cathartics, and to the results which every month teem in upon us from the happy pastures where the anti-vivisection mania has not retarded the triumphant sweep of scientific research. It is true that these valuable results are not immediately revolutionising the treatment of disease, but it is certain that in two directions we are gaining ground. Firstly, in the introduction of new remedies

of great value and power; and, secondly, in the use of the older remedial agents with far greater precision and effect.

The other departments of medicine are adding their share in our advance, and if we look towards chemistry the results are almost startling. It is only within a very recent period that the intimate connection and relationship between physiological action and chemical constitution has been at all recognised, and it was, I believe, the not taking a roseate view of our situation which led Lauder Brunton, a few months ago, to declare that having passed through the flint, stone, and bronze ages, we are just now entering into the iron age of therapeutics.

The science of chemistry has contributed to this in no small degree, and the rapid working out of the principles upon which physiological action and chemical constitution are related to each other have already achieved results which but a few years ago would have been regarded as fabulous. We cannot surely be standing still when the pharmacologist can predict with almost unerring certainty that once the chemist can succeed in producing certain readjustments of the molecular particles of various carbon bodies, he will, with the resulting new compound, produce certain definite and novel physiological or therapeutical effects. To my mind there have been few advances in the whole range of science which during recent years can compare with this. Yet this prediction has been made, and is being constantly fulfilled, and every few months we are having antipyretic remedies created and placed in the hands of the physician, by which he can reduce fever heat with almost as great certainty and precision as the engineer can reduce the pressure of the steam upon his safety-valve.

The humble science of pharmacy has done much to help therapeutics, and it would be difficult to over-estimate the enormous advantage which the practical physician experiences daily in using the active principles of drugs instead of the crude vegetable decoctions of twenty years ago. Had we no other evidence of progress than even this, one could hardly say we were standing still. The alkaloids, isolated during the past few years, have furnished a new series of excellent and precise weapons which the scientific therapist can wield with a uniformity of result and certainty of action undreamt of by our fathers. The synthetical preparation of various rare and expensive principles by the pharmaceutical chemist, marks an era in our progress which is deserving of record, and, as I speak, come the tidings that one

cherished hope of the pharmacist has been realised, and that quinine has been successfully produced by artificial means.

To the practical pharmacist the physician is deeply indebted, and I fear we do not sufficiently recognise the invaluable labours of men who are ceaselessly toiling on and laying at our feet the richest remedial agents extracted from the great laboratory of nature. There is a development of modern pharmacy, however, which, far from being an advance, is decidedly, in my opinion, calculated to retard the progress of the healing art—I refer to the practice of huge American and English drug houses who are flooding this country with ready-made remedies, and cut and dry formulæ for every ache and symptom to which flesh is heir. This practice threatens to either exterminate our faithful ally, the scientific pharmacist, or convert him into a mere bottle-filling machine.

At this juncture we might refer to an event of some importance—I refer to the advent of the new pharmacopœia. When we wish to get a correct idea of the condition of the healing art, in any remote age, there are, perhaps, few more reliable methods than to study the pharmacopœia, or list of remedial agents in use during the time. Let us for a moment apply this test to our own day. Is the recent volume evidence of progress or decay? I find myself here in a difficulty. Dr. Quain, upon whom the great burden of the work has fallen, has by his great ability and indefatigable labour earned the lasting gratitude of the entire profession, and I believe no one man, of the present or past age, could have more successfully carried through the great undertaking. But we cannot accept the new work as an index of the progress made in therapeutics since the last issue, either judged by the number of worthless remedies still retained, or by the number of agents of undisputed merit omitted. Nevertheless, to the most casual observer the work abounds with conclusive evidences of solid progress, though it can never hope to be a true indication of the therapeutics of the day until the Medical Council avail themselves of the aid of practical therapeutists, whose duty it should be to send forward reports at short stated periods.

With this digression, we will leave the subject of pharmacy and glance at the relations of pathology to the science of therapeutics. It would be unfair to ignore the aid rendered by this science to the healing art. The President of one of the sections of the British Medical Association meeting, last August, declared that one of his predecessors in the chair had rightly said, "pathology is the basis

of every rational system of therapeutics." Allowing to pathology every credit, we might glance critically at some of the ways in which she has aided her offspring. The aid appears to have been more of the destructive than of the constructive kind, but it was, nevertheless, valuable. Once the naked eye or microscope demonstrated the grosser forms of pathological lesions, causing many of the well-recognised diseases, the death-knell of long-vaunted specifics was rung out, and a healthy scepticism was fostered. Looking down the tube of the microscope, for example, at the changes in the nerve cells of the posterior columns of the cord of an ataxic patient, the first reflection of the pathologist doubtless often was, "How useless, arsenic, silver, or iodides!—remedies *cannot* touch a lesion like this." As the various structural or organic affections were, one after another, demonstrated to be associated with grave and profound pathological changes, this feeling of unbelief in the older lines of treatment gradually gained ground, and a deeper longing filled the breast of the physician for a less empiric and a more rational system of treatment. I have no doubt that the change was one which benefited the department of therapeutics considerably. Like every other reaction, however, this one also went too far, and the spirit of scepticism became a barrier to progress—men refused to believe that remedies could produce results which, in their ignorance, they could not understand the *modus operandi* of, unless the effects were very striking and unmistakable. The new discoveries in the pathological field became more fascinating as the science gained more in exactness and the domain of treatment was comparatively neglected in the hospitals and medical schools. I have been often astonished at the brilliant and interesting clinics in the Metropolitan Hospitals, where the physician, after a long and elaborate account of the history, symptomatology, diagnosis, and pathology of a case, wound up his remarks sometimes without even a word upon the treatment, or more frequently in a single sentence, deploring his inability to satisfy himself about the utility of the usual remedies in the case before him. Young medical men leave the schools often without the faintest idea even of dosage, and innocent sometimes of any practical knowledge of the therapeutic action of the most valuable and reliable remedies. Contrasting these men with the older practitioners of half a century ago as regards their success in treatment during the first half dozen years of their practice, one might be tempted to conclude that not only was the science of therapeutics not progressing, but that it was fast retrograding.

Going round the wards with one of the most learned and distinguished physicians of a great Metropolitan Hospital, a few years ago, we came to a little patient suffering from chorea. He said to me, "How do you treat your cases of this disease in Ireland?" My reply was, "With arsenic;" and he asked, "Do you really believe in it?" "Undoubtedly we do." He said, "From what I know and have seen of the pathology of chorea I did not believe that arsenic could be of the slightest use to it; nevertheless, I determined to prove it, and I have demonstrated the fallacy which some men still cling to. I treated so many cases of chorea with teaspoonful doses of aqua camphoræ, and a similar series with arsenic, and the results were precisely similar. My large class of students have taken a deep interest in the experiment, and you can ask any of them do they believe in arsenic now." Upon inquiry I satisfied myself that the doses of Fowler's solution administered were so small that any practical therapist could have foretold with certainty the result of his protracted series of experiments. It is placed beyond doubt that choreic children can tolerate enormous doses of arsenic, and that in chronic cases this drug may be given in quantity ten times greater than are necessary to produce the ordinary tonic effects of the drug, and always with telling results. Under almost similar circumstances I was confronted by a distinguished pathologist who, after trying iodide of potassium in tertiary syphilis for some years, was convinced that it was of little value. I have since carefully examined several broad and sweeping statements of a similar class, and have generally satisfied myself that much of the scepticism about many of our oldest and most trusted remedial agents has arisen from ignorance of the elementary knowledge of their doses, and methods of administration. I have thought it advisable to refer to this aspect of the subject, because I believe it is, to a great extent, the explanation of the unfavourable opinion of the progress of therapeutics held by some of the most distinguished and scientific members of our teaching bodies. It is, however, better, upon the whole, for our science that scepticism should take the place of the blind faith that existed in past days—a faith in heroic doses and in a meddlesome polypharmacy which characterised the stone age of therapeutics.

We must not for a moment base our estimate of the progress we are making by the extent or quality of the knowledge imparted in some of the medical schools, or attach much weight to what may be the prevailing fashion in a few places of affecting a disbelief which

is too often grounded upon want of knowledge or a half-consciousness of ignorance.

Such a condition of matters is not evidence that therapeutics is standing still, but strongly suggests to us the serious possibility that men in their anxious search after new and more fascinating truths, and in their eager desire to keep abreast of the ever-streaming tide of discovery, may find themselves losing hold of some of the anchors forged by their predecessors after centuries of laborious observation and patient toil.

The *direct* advantages which accrue from a knowledge of pathology to the scientific therapist are too obvious for me to dwell upon, though I think they are often overrated. The late Dr. Moxon, himself a brilliant pathologist, in speaking to a class at Guy's upon the value of a knowledge of pathology, said he thought the pathology of the Pathological Society and of the *post-mortem* room afforded little help in the treatment of disease, except perhaps to give the physician confidence in himself. Thus he said:—"Pathology gives you a way of knowing what is happening and going to happen in your patient; and the public expects that of you. I shall take leave to pity you much if you do not get a good knowledge of such pathology, otherwise you will be ignorant and unstable; and if you have any conscience you will be full of fears that others better informed than yourself would conduct the patient's case better than you are doing. So you will take your unmerited fees in a properly nervous perspiration, suspecting all the while that the patient's aunt is strongly recommending Mr. Johnston. It is for your own good that you learn pathology, so that you may have sound knowledge to rely upon when rivalry outside and weakness within shall shake your nerves. Here is the difference then—pathology serves to give confidence in yourself, therapeutics serves to cure your patients, and you will find that is what your patients want." These remarks evidently apply to the individual more than to the science, as there can be no doubt that every genuine advance made in the science of pathology must ultimately benefit therapeutics. Still there is in them the foreshadowing of the great truth that the newer additions to medicine have rather tended to make men neglect the close and patient study of the immediate and remote effects of remedies used in disease in the same thorough and careful way in which our fathers did.

Physiology has in its onward march very materially helped the science of treating disease, and indeed the investigations of phar-

macologists have often been of service to the physiologist, both sciences being so closely linked together.

Did time permit us to closely examine the advances made in pharmacology, pathology, chemistry, pharmacy, and physiology, we would, without further evidence, be driven to the conclusion that, *nolens volens*, the therapist must be advancing.

A department like therapeutics, which is based upon all these sciences, *cannot* stand still. Should it once attempt to halt, like the tired or unwilling horse in the team, it would be lifted off its feet and swept on by its vigorous and ambitious companions in their swift race to reach the golden goal of truth.

Let us look for a moment at the RESULTS of therapeutic progress. We have said that at least in two directions the evidence is clear. Our old remedies are used with greater precision, and we have a vast array of new remedial agents of unquestioned value.

The *truth* of our first statement is so obvious as scarcely to require proof, and my only difficulty is in selecting an example out of the innumerable host which appears before me. Two of our commonest drugs suggest themselves—digitalis and mercury. When I first commenced the study of medicine I remember well my introduction to foxglove, which even at that recent period was regarded as a narcotic, and its virtues were impressed upon me with all the dogma of authority, especially its great power as a cardiac *sedative*. I was informed and taught that it would subdue a Hercules, and was of great value in weakening the pulse and soothing the heart when it was acting too strongly, but that it was dangerous, and should not be used when the pulse was weak and irregular. We now understand its action, and employ this drug daily as a cardiac tonic in imperfect compensation, watching its influence upon the cardiac ganglia, measuring its effect upon the lengthening of the diastolic pause, and observing how the wearied cardiac muscle gains new life and vigour by the increased coronary nourishment administered during the prolonged diastole. Though often we may be puzzled and disappointed, owing to the many complex disturbing influences at work, still constantly we shall find cases in which we can use this tried and faithful weapon with an accuracy approaching the mathematical. In the case of mercury, we might spend much time portraying the evils of the older methods of use in which profuse and sometimes fatal salivation followed the administration of the drug in heroic and long-continued doses. The physician now rarely, if ever, salivates, and by close

observation weighs the amount of the metal required to act as an antidote to the vital poison of syphilis, and by patient watching and close observation adjusts the balance sometimes with as near approach to complete success as crowns the efforts of the chemist in neutralising his solutions in the laboratory. Not only has the wild and culpable dosing by large quantities of mercury been long since abandoned, but, in our approach to accuracy, the infamy and discredit into which the drug had more recently fallen, are rapidly passing off, and we recognise its virtues and know its reputation to be now above the danger of future detractions by our descendants, as they are already beyond the extravagant praises of our ancestors. If anyone should still doubt that our methods of using this venerable remedy are incomparably superior to those employed even a few years ago, let him reflect upon the revolution which dilute solutions of the bichloride has wrought in obstetric practice, and how (as pointed out last week in an able address of one of our members) hundreds of lives are annually saved in the lying-in hospitals of the Continent by the judicious use of this fatal enemy of every member of the germ world.

By examining the methods in which we *now* administer the antiphlogistic, cathartic, diuretic, or expectorant remedies in use fifty years ago, we might easily satisfy ourselves that our progress was rapid and certain, even if we did not possess *one new* remedy of acknowledged power.

This brings us to the consideration of the difficult subject of New Remedies—a question requiring for its proper treatment a far more matured experience than mine; and in attempting to deal with it I must crave your indulgence whilst we consider—"Is the enormous number of new remedies evidence of progress or decay in therapeutics?" My experience is too short and my reading too limited to compare accurately our position in this respect with what it was at any given period during the last hundred years; but I believe that at no time during this century had the profession ever such an array of comparatively new and untried remedies placed before them.

It is interesting and encouraging to find that the multiplicity of remedies has always been regarded with suspicion and often with disfavour by the scientific physician, even in the stone and bronze ages of therapeutics. Thus Dr. Paris, writing fifty years ago about the remedies in use in his day, says:—"It has been very justly observed that there is a certain maturity of the human mind

acquired from generation to generation, *in the mass*, as there is in the different stages of life in the *individual* man. What is history, when thus philosophically studied, but the faithful record of this progress, pointing out for instruction the various causes which have accelerated, retarded, or obstructed it in different ages and countries? Thus is our art, in its earlier periods, like the young and sanguine practitioner, characterised by an excess of credulity—every object is tinted with imaginative hues and magnified in the mist of dawn; we find, for instance, the early herbals assigning almost incredulous virtues to every herb of the field, while in the present day the list of those which are admitted to possess any real efficacy is reduced to the limit of a few slender pages. Just so is it with the career of the individual. ‘When I was young,’ said Dr. Radcliffe, ‘I possessed at least twenty remedies for every disease, but when advanced in age I found twenty diseases without a remedy;’ or, in other words, his imagination had been tempered by reason and his early credulity subdued by long experience. The mirror of history casts its lights as well as its shadows. It discovers fallacies that may mortify our untaught conceit, but it as surely displays truths which must gratify our pride, inspire our hopes, and give a keener edge to our exertions.”

This truly scientific simile puts the host of new remedies in a fair light, and their number is suggestive of the infancy of therapeutics. If the venerable author of the *Pharmacologia* was to appear upon the scene to-night, I fear he would conclude, after glancing at the array of specimens before us, that we were fast entering upon our *second* childhood. But the case is not so bad as at first sight appears; and if we examine it more closely we will be able to satisfy ourselves that the present condition of current medical literature and the high pressure of professional life have to answer for many of the new remedies.

Nowadays a man, perhaps upon the result of a single fallacious observation, thinks he has discovered a specific, and without patiently waiting, as his fathers would have done, and verified his observation by repeated trials, he rushes into the weekly medical journal—whose pages are always at his command—burning to give his discovery to the world, and his own name along with it. This has, however, one advantage—his statements are put to the test by scores or perhaps hundreds of medical men over the world, and the life of the new remedy and his own fame wither in an hour. It is, however, sad to reflect how much ingenuity and labour it requires

to disprove one of these random puffs. Our process of sifting is much more rapid and severe than in former days, and if a new drug survives a year there is a fair chance that there is something in it. The vast majority of these ephemeral specifics are from the vegetable kingdom, and many hail from the New World, where quite a frenzy for therapeutic discovery has seized upon the great enterprising drug-houses, and men have actually been appointed for the *specific* purpose of hunting up the sickly survivors of old Indian and Mexican tribes, and introducing as potent remedies the weeds and shrubs whose virtues have been handed down for ages among these primitive men in mythic song and barbaric incantation.

This ransacking of the vegetable world has not been without some benefit to the healing art, and the ceaseless activity of the searchers after "cures" has brought unto the therapist now and then a diamond surrounded with tons of rubbish. Not only has the botanical kingdom been explored from every point in the compass, but the Russian, whose barren tablelands do not afford much vegetable wealth, has, with a taste less poetical and not so refined, turned his attention to the animal kingdom, and the great scientists of his realm are now in rhapsodies over boiled cockroaches and blattic acid. No wonder such results and practices have produced in candid minds a pardonable scepticism, or that that portion of the profession which is not given to deep reasoning and profound research should libel the department of therapeutics; but, after all, these are but some of the many evidences which hang upon the flanks of progress.

In the present enlightened age of medicine there is almost greater danger and temptation to the physician to scout *all* the new drugs, than there is for him to fall into the error of regarding them as specifics.

We have all been struck, in watching a clever workman at his labour, in seeing to what an infinite number of purposes he is able to apply some primitive-looking tool, which, by daily handling, has almost become part of himself. He performs with it innumerable feats which it never was intended to be used for, with more rapidity and accuracy than his less skilful fellow with his large assortment of formidable looking utensils. So is it in therapeutics, and it is the experience of every one of us that we can achieve, through long experience, with one of the good old remedies—when we have got to *know our weapon*—results of the most varied and certain kind, unknown and undreamt of by the hunter after newer agents. Thus,

yearly we lessen the number of our drugs as we acquire knowledge and dexterity in the use of them, and this tendency increases as we grow older, and ever will be the solid bulwark which will protect our *Materia Medica* against the swarming hosts of non-official remedies which threaten to inundate us. This conservative principle may, however, be carried too far, and undoubtedly, with many men, is a barrier to progress. As individuals we should adopt the rule to—

“Be not the first by whom the new is tried,
Nor yet the last to lay the old aside.”

Disregarding and discountenancing a large percentage of the so-called new drugs, a glance at the remaining list will show us that agents of marvellous power and uniformity of action have been pouring in upon us during the last few years. Measured by any standard we can apply, the discovery and introduction of these remedies are indicative of a progress by leaps and bounds, and not surpassed in any other department of medicine, save in the case of the new-born science of bacteriology.

When I thought of addressing you, it was, at first, my idea of reading some notes on each of the new remedies which I had tried and satisfied myself about; but I think the object will be best attained by asking your attention to the beautiful collection of new and rare drugs which, at my suggestion, Mr. Pring has most liberally and cordially placed before us this evening. The specimens have been selected with great care and skill by Mr. Green, and, I am sure, include some hitherto never exhibited before in Ireland.

The remedies and preparations of undisputed value which have been added to the *Pharmacopœia* last year number over 100. At least twenty are of primary importance, and are well known and almost universally used. To do justice to these would require a paper written separately upon each one. I shall now simply content myself with an enumeration of them:—

Salicylic Acid, which has in a very short time established itself as a medicine of great efficacy in subduing the pain and fever in acute rheumatism.

Boric Acid, the almost harmless or innocuous antiseptic by which we can disinfect the entire urinary tract with certainty and rapidity.

Apomorphia, which, in addition to its emetic qualities, is the best known expectorant.

Butyl-Chloral, which, in addition to its hypnotic action, specially affects the fifth nerve.

Caffein, introduced for its digitalis-like effects, without the dangers of this drug.

Gelsemium, which is a valuable addition to our anti-neuralgic remedies.

Chrysophanic Acid, which is almost a specific for psoriasis, but which should be given internally.

Cocain, the marvellous local anæsthetic.

Iodoform, whose introduction has revolutionised some steps in operative surgery, but which never should be used along with any other surgical dressing.

Jaborandi and Pilocarpin, by whose intense sudorific action life is often saved in uræmic coma.

Cascara Sagrada, *the* remedy for chronic constipation.

Codeina, nearly the only drug which influences the course of diabetes.

The Oleates, which already (as proved by Dr. Shoemaker) have achieved so much in the treatment of nearly every form of cutaneous inflammation.

Nitro-Glycerine, which, in the hands of Dr. Murrell, in addition to its valuable cardiac and vascular action, promises to be the remedy for sea-sickness.

Vaselin and Paraffin, which, perhaps, with the exception of Glycerine, have been applied to more uses than any other official drug.

Thymol, Menthol, the Sulphocarbolates, and other anti-zymotics.

It is when we come to the list of new remedies not yet included in the Pharmacopœia that one really faces the difficulty of estimating the value of recent accessions to our *Materia Medica*. The mere enumeration of the names of those which have been generally accepted would weary you; and, if I attempted to give an opinion only of the most highly valued of them, you could hardly fail to think that I was taking an extravagant view of their worth.

Abrus Precatorius (or Jequirity Seed), which, though of very recent introduction as a remedy for various chronic diseases of the conjunctiva, is only recovering from the reaction caused by the too extravagant and enthusiastic report of its wonderful properties.

Osmic Acid is rapidly coming into use as a successful remedy for inveterate epilepsy, sciatica, and neuralgia.

Casca (or Ordeal Bark), Lily of the Valley, Adonis Vernalis, and Mistletoe, by some mystical coincidence beyond the intellect of the therapist, have been successfully used in affections of the heart.

Ichthyol, a geological novelty, has already established its value as a remedy in scaly skin affections.

Lycoperdon Giganteum (the puff ball), an old and tried domestic remedy for trivial cuts and lacerations, has been recently re-introduced by Dr. Thompson, and found to possess hæmostatic qualities which place it by a long way at the head of the list of blood-staunching substances. The beautiful specimen upon the table was captured last year in Belvoir Park.

Papain, the new vegetable ferment (prepared by Finkler's method), bids fair to push pepsin out of the field, and by its power of digesting animal substances, it can be used to disintegrate the false membrane in diphtheria.

Of Coal Tar products, Naphthol, Naphthalin, Fuchsin, and Chinolin have made names for themselves which will not soon be forgotten.

Amongst the host of new antiseptics several have been demonstrated to be of great value for special purposes, as—Boroglyceride, Resorcin, Aseptol (or Sulphocarbol), Terebene, Trichloroacetic Acid, Iodol, and many others.

The therapist, in his search for remedies whose uniformity of action and certainty of result could always be counted upon, has introduced active principles, glucosides, and alkaloids of enormous value, and discarded the crude drugs when possible. Thus we have Hyoscyamin, Cotoin and Paracotoin, Pelletierin, Arbutin, Aspidospermin, Helenin, Eserin, Picrotoxin, Agaricin, Emetien, and numerous other active principles of great power and value.

It can hardly be questioned that the new departure of introducing physiological remedies so-called—as Hæmoglobin and albuminates of iron and mercury—has been a step in the right direction. Trypsin, Pancreatin, and Bynin, are also accessions of undoubted value.

Strophanthus Hispidus, the recently introduced cardiac remedy, has already won laurels, and Professor Fraser's prognostication of its uses and virtues has been more than fulfilled, and we must recognise in it a remedy of rare power and great value in failing compensation.

The new hypnotics, Paraldehyde, and Urethan, I sincerely trust will continue to hold the high place to which they have been elected. If future observers confirm and establish their freedom from cardiac contra-indication, they will soon push aside a drug whose danger and power for mischief is, I believe, only faintly appreciated—I refer to chloral hydrate.

Lanolin, the recently introduced basis for ointments, though only a few months old, is destined, I believe, to play a most important part not only in cutaneous medicine but in a much wider sphere. The rapidity with which it enters the system through the skin is astonishing. I am at present trying the inunction of several remedies in combination with it, and I hope to be able to report a satisfactory result.

The discovery and introduction of the antipyretic remedies, inaugurated by Skraup a few years ago, mark an important era in the history of scientific medicine—Hydroquinone, Thallin, Kairin, and Antipyrin—which have been tried by thousands of observers and reported upon by many of the great clinical teachers of the day. No truer test of the nature, extent, and rapidity of our progress could be found than is to be seen in a survey of the history of these chinolin derivatives had we time to enter into it.

About six years ago chinolin was synthetically prepared by Bayer and Skraup, and found to possess antipyretic virtues of a feeble and unsatisfactory type. Fischer, following up the discovery, produced the methyl and ethyl hydrides of oxychinolin which, under the name of kairin, attracted much attention a few years ago. Owing to the dangerous and fatal collapse following their administration, they have almost passed out of the field. Skraup, however, continuing his synthetical triumphs by aiming at the creation of substances more closely resembling quinine, produced methyloxychinolin, or chinanisol, whose salts were found to be powerful antipyretics. The administration of them, however, was attended with some drawbacks, and it was found that the hydrogen compound promised to give better results, and hence *thallin* or tetrahydrochinanisol—the most energetic of these bodies—was brought into use. It likewise was found to possess some dangerous qualities, and after a short time was born the almost harmless dimethyl-oxychinizin or antipyrin—the prince of antipyretics.

This drug has now been administered in many thousands of cases, and has been found to reduce fever heat with most remarkable certainty; the very few instances where unpleasant symptoms have been observed may be safely ignored, as the disturbances were noticed only where large doses had been given. One death attributed to its action may be fairly explained upon other grounds, and in judicious hands it may be regarded as practically innocuous. It has been given in fever arising from whatever causes with the same uniformity of result. I have administered it during the last two

years with frequency and to my entire satisfaction. It is in the burning and exhausting high temperature of phthisis that its value is most apparent. I have used it about fifty times under these conditions. Often have I seen the temperature of the parched and withered-up victim of tubercle fall 6° F. with a comfort and joy one could never forget. Here is a temperature chart selected at random from a series of hospital cases. Though the patient was suffering from an incurable malady of a terribly malignant nature—acute miliary tuberculosis—of only a few weeks' duration, the temperature fell with striking regularity after each administration; once a drop of 7° occurred, and the most indescribable ease and comfort was experienced. I wish that I could report that these remedies cured the diseased condition which causes the high temperature. I cannot satisfy myself that, as at present administered, they do more than is reported of them, but that their use is attended with the most beneficial temporary blessings no one can question.

The new remedies which I have thus briefly enumerated are but a few of the most remarkable, and I stop at them, not because the list is exhausted, but because already I have drawn too much upon your indulgence. Had time permitted I should have briefly referred to other startling strides in the progress of therapeutics. I must confess I omitted some because my language might have been considered more than wildly extravagant had I descanted upon them. It was my privilege to hear the first report in this country upon the trial of massage. I did not know that the speaker was Dr. Playfair, and, as he related the miraculous results of the treatment, I sat in astonishment wondering how any man could be expected to believe in results which appeared so utterly impossible. I certainly felt for the moment that the speaker's head required a little vigorous massage. But all he said and much more have been abundantly verified.

The results of the treatment of hydrophobia cannot be said to be less wonderful. Many remedies, such as these last-mentioned, cannot be exhibited in a collection like what we have to-night, but we must not forget them in our rapid glance at the proof of therapeutic progress. Such are the treatment of various nerve lesions by improved electrical appliances; of the hitherto fatal hyperpyrexia by cold baths; and of the treatment of phthisis by improved and better understood climatic agents.

Leaving then the past and the present behind us, and looking to the future, we ask ourselves—What are the prospects? None but

the foolhardy would venture to prophesy—our speed has been rapid during the last ten years, and the increased velocity has caused our equilibrium to become a little unstable.

Let us hope that, in our life-struggle against disease, we shall not at our *present rate* continue to add new weapons to our armoury. Rather let us pray for an armistice, during which time will be given to make ourselves thoroughly familiar with the handling, the range, and the action of the deadly implements placed in our hands.

The new discoveries run forward in swiftly diverging lines, and leave between them ever-widening wedges of virgin territory; ours be it to break up this unexplored soil and perfect—in the sure and slow way our fathers did—the science of the treatment of disease. Ever mindful of the universal law that high development and slow growth must proceed together, we might be tempted to prophesy that, in our approach to perfection, we may expect to move at a slower, steadier, and more uniform pace than in the immediate past. The bold outlines of a new science may be struck in a few short years, while it will take centuries of patient details to fill in and perfect it. So is it in relation to our recent advances in therapeutics.

Pursuing the broad suggestive latitudes, pardonable I hope in the opening address of a session, and discarding the logical exactness necessary in a paper, I might compare our position with a picture which suggests itself to me, as I reflect upon the recent *past*, the *present*, and our prospects of the *future*. There arises before me, as I speak, the idea of a great artist who is about to begin a painting which is to be his life-work, and which, in his yearning after immortal fame, he fondly dreams will hand his name down the ages.

A commencement is made, and the huge canvas is soon filled with the outlines of figures glowing with animation and beauty; and in a comparatively short time the entire plan of the picture starts into life under his enthusiastic touch. To the ordinary beholder the life-task in its effective and dazzling brightness is *almost* accomplished, and a few more touches of the brush only are needed to perfect the rapidly-accomplished work. Not so, however; the able artist realises that only *now* are his labours *really* beginning. For the last finishing touches to this graceful figure the statues of early Greece, Florence, and Rome must be studied. For that flowing head-dress must the wardrobes of the East be searched; while that antique armour may necessitate an examination of the spoils of ancient Egypt. For the warm sunlight of that glowing sky oriental hills must be climbed with burning feet ere the last

flashes of golden light can be added to the perfected vision. And the painter may feel the snows of winter upon his brow before the great task of his life receives the last strokes of development from hands already withering under the decay of age.

This brings us (in conclusion) to *our* part in the perfecting of the newer scientific therapeutics. Are we to stand idly by while others by their labours build up and give the finishing touches to the science of treating disease? Under the regrettable difficulties and obstacles mentioned at the beginning of my remarks, it is in the power of few, if any, of us to demonstrate the action of remedies upon the lower animals. It is, fortunately for our immediate purpose, hardly necessary; and I need not say that experimenting upon our patients would be both unjustifiable and immoral.

It is our duty to clothe the figures created by the genius of Magendie, Brunton, Fraser, Hay, Koch, Foster, Schroff, and the host of pharmacologists who may be said to have created, by their recent researches, a new science. The details of their glorious artwork can be filled in only by us. At the bedside, by patient and laborious observation only can the gaps be levelled up or bridged over, which the lines of recent discovery have left between them.

Did time permit I would fain dwell upon the ennobling influence of such a motive imparted into the daily task of our arduous lives. Finding out and clinging to truth when discovered, each one of us would become a true scientist, *working* for and *living* for *one* object—the perfection of our science and the relief of human suffering.

As I sit down it is with the painful feeling that some of you may think I have been “exhibiting the excess of credulity associated with youth, and that unconsciously I have been tinting the science of our profession with imaginative hues and magnifying it in the mists of dawn.” With all respect let me say it is you who are in error. Did we not *all at one time* feel overwhelmed with the grandeur of the profession we had just entered, or were about to enter? Let us ask ourselves—Why the change? And my seniors will pardon me when I say that the science of the treatment of disease has not become less worthy of veneration since the time they first entered its portals, but that their position and experience are exactly like that of my own when lately I stood spellbound under the shadows of the lordly Cathedral of Cologne, overcome with the silent majesty of its awe-inspiring dimensions.

To my surprise, after entering, and pausing a moment in the

long-drawn aisles and beneath the fretted vaults, my oppression soon passed away, and I felt myself ceasing to be impressed by the vast proportions of the gorgeous temple, till sweeping along the corridors of memory came up the lines of the master:—

“Enter—its grandeur overwhelms thee not ;
And why ? It is not lessened ; but thy mind,
Expanded by the genius of the spot,
Has grown colossal.”

ART. V.—*Exostosis in the Auditory Meatus.* By JOHN B. STORY, M.B., F.R.C.S.I. ; Surgeon to St. Mark's Ophthalmic Hospital.

A BRIEF mention was made of the following case in the discussion upon Mr. Arthur Benson's interesting communication to the Academy of Medicine on Aural Exostosis,^a but the interest attaching to the subject, and the remarkable success that attended the treatment, in spite of the untoward complication of a perforation of the membrana tympani, induce me to publish a more detailed account of the case in this Journal.

CASE.—In September, 1881, I was consulted by a gentleman, aged thirty-two, on account of a singing and deafness which had existed in his right ear for the space of a fortnight.

He stated that he had always been a healthy but exceedingly nervous man. Had had “debility,” in which I found he included spermatorrhœa, five years previously, and had been much “dosed” in consequence.

I found his hearing on the right side to be $\frac{3 \text{ m.}}{\text{c. v.}}$, or $\frac{0.5 \text{ m.}}{\text{wh.}}$ (i.e., my ordinary conversation voice was heard at 3 metres, and a low whisper at half a metre's distance, and on the left side $H > \frac{4 \text{ m.}}{\text{c. v.}}$, or $> \frac{4 \text{ m.}}{\text{wh.}}$ (my consulting-room does not allow me to register higher powers of hearing). Right ear detected Politzer's hörmesser at a distance of from one-third to 2 metres, and the left heard it at more than 4 metres. Tuning-fork on vertex heard best in right ear.

The external ears were normal on both sides, but the meatus were closed by large exostoses growing from the posterior wall, that in the right ear being larger than that in the left. The growths were covered with a red skin, and were quite painless on pressure produced by tapping with a probe. On the right side I could not pass the very finest of lachrymal probes between the wall of the meatus and the exostosis, but on the left side I could do so easily enough. The growth in the right

^a Trans. Acad. of Med. in Ireland. 1885. P. 129.