A discourse on medical botany / by Earl Stanhope.

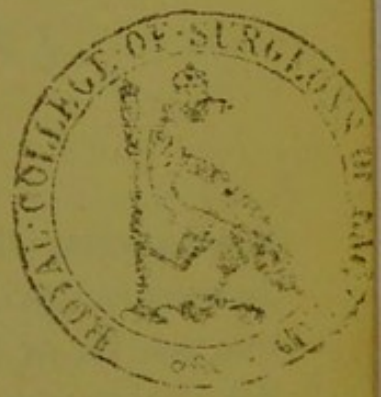
4

A

DISCOURSE ON MEDICAL BOTANY

BY

EARL STANHOPE,



BEING THE SUBSTANCE OF

Unpublished Addresses Delivered by Him

TO

THE MEDICO-BOTANICAL SOCIETY,

OF WHICH HE WAS PRESIDENT.

LONDON:
JOHN CHURCHILL, NEW BURLINGTON STREET.
MDCCCLIV.

LONDON:
G. J. PALMER, SAVOY STREET, STRAND.

A DISCOURSE

ON

MEDICAL BOTANY.

THE sorrow and embarrassment which the retirement of your late President, Sir James M'Gregor, has occasioned, is felt most severely by you all; and I speak in all the sincerity of my heart when I declare, that it is particularly felt by the individual who now addresses you, and whom you have been pleased to select as his successor. On me devolves the weighty responsibility of an office which I did not solicit, and for which I have not the vanity to consider myself qualified. Although I feel most grateful for your kindness and partiality, and prize, as it deserves, that honour which I owe to your confidence and good opinion, I am aware that I must, unhappily, exhibit a striking contrast to the qualities which distinguished my predecessor, and that I cannot boast of those scientific attainments, nor of that medical knowledge, which must be important, and which may be regarded as indispensable for that situation. I am aware that an eminent Physician, like your late President, is more peculiarly qualified for this office; and if such a person were proposed on this occasion, you will do me the justice to believe, that I would not enter into competition with him, and indeed I could not do so without unpardonable presumption. May I venture, however, to hope that I shall be favoured with

your kind indulgence, which I so much require in discharging the duties of this office, and that I may enjoy the happiness of which I am ardently desirous, of promoting your welfare by my unremitting assiduity, by my industry, which, as I am not employed in any profession, or in any public situation, I am the more able to exert in your service, and by the zeal which, from early youth, I have always felt for the objects of this Society, and which is founded upon my firm conviction that they are most important, and most beneficial, to this Country and to Mankind. In every situation in which I may be placed, whether as the President, or merely as a Member of this Society, my humble exertions, whenever and wherever they can be useful, will be employed in your service with unabated activity and zeal.

I trust that I may be allowed to offer a few observations on the objects of this Society, which are concisely and clearly defined in the Prospectus, and are stated to be for the purpose,

> "Of investigating, by means of Communications, Lectures, and Experiments, the Medicinal properties of Plants, their Botanical characters, and Chemical constituents;
>
> "Of promoting the study of the Vegetable Materia Medica of all countries;
>
> "Of collecting and describing the various substances appertaining thereunto;
>
> "Of improving their Pharmaceutical preparations;
>
> "Of disseminating, by correspondence and publication, such discoveries as may be made of new Medicinal Plants, and of new uses or preparations of those which are already known;
>
> "Of adjudging honorary or pecuniary rewards to the authors of such discoveries;
>
> "And of cultivating Medicinal Plants."

The general design is therefore the extension and improvement of the Vegetable Materia Medica through the means of Botanical inquiries, of Chemical analysis, and of Medical investigations and experiments. We never entertained either the desire or the intention of establishing new theories, which must be hazardous, which might be dangerous, and which would deservedly expose us to the censure of the world, and more especially of the Medical Profession. We do not attempt or even wish to form a sort of Revolution in Medicine, to subvert the doctrines, or to supplant the practice which we find established; we are not actuated by such presumption, nor do we proceed on such principles. We have thought, and we have still the strongest reasons to think, that the Medicinal properties of Plants have not yet been sufficiently ascertained, and not yet accurately known, and are highly deserving of a patient and attentive examination, and of careful trials. For a proof of this assertion, and without referring to the ancient Herbals, in which some plants were not perhaps correctly defined, I need only remark, that modern works of that description, and on Medical Botany, often mention, with doubt and uncertainty, the virtues which are ascribed to particular Plants, and do not notice the trials, if any, which were made of their efficacy, and, in many cases, contain contradictory statements. This is unfortunately the fate of many of our indigenous Plants, an acquaintance with which must be interesting, and might be important. It has also been found by experience, that diseases had been successfully removed by Plants, which some writers allow indeed to be efficacious, but consider to be possessed of different properties from those which would be useful in such complaints. All these are proofs of an imperfect knowledge, on which full reliance cannot be placed, and to which further researches are indispensably requisite.

To these researches Botany is of great importance, by

enabling us, with respect to those Plants which are nearly allied to each other, to distinguish those which are poisonous from those which are harmless, and those which are known to be medicinal from those which are not at present considered to be such. Nor is this the only use and advantage of that science in the study of Medicine, for it also enables us, by the exterior character of a Plant to form some judgment of its properties. The world is indebted to a German, Camerarius, of Nuremberg, for the first discovery of the invaluable principle, that Plants which coincide in their exterior forms are allied in their properties, a principle which was in the following century confirmed by Linnæus and Jussieu. Upon this principle we proceed in new discoveries, from those Plants of which the medicinal qualities are well known to those which are little known, and even to those which are altogether unknown. With this view, Botany becomes important and attractive, instead of being, what it may sometimes appear, a mere classification and nomenclature of the Vegetable kingdom. The immense and almost infinite variety of Plants which we see around us becomes highly interesting, and we find ourselves in the midst, not of a crowd of strangers but of acquaintances, whose connexions and characters are well known to us.

Let it not, however, be supposed that we can derive advantage only from those persons who are skilled in Botany, and that a knowledge of that science is absolutely requisite to constitute an useful Member of this Society. I am, as you all know, and as the preceding observations have sufficiently shown, fully sensible of the importance of Botany; but I must contend, that the practical trials of any Vegetable, which are made with care and patience by a Member of the Medical Profession, and which are attended with success, are in the highest degree valuable and beneficial, although he may not be able to give a Botanical description of the Plant,

or even to name the Genus and Species to which it belongs. Botany may, in some cases, lead, but ought, in no case, to limit our inquiries; and the evidence of facts must always be considered to be, what it really is, superior to all others. For example, the Roots of the common TRITICUM *repens*, which is a very troublesome Weed in our fields, are employed on the Continent with great benefit, as a mild aperient, and are given in a decoction to purify the blood; and yet it might not appear from botanical analogy that the Plant possessed such properties, as it is one of the *Gramineæ*, some of which are considered to be only nutritive.

The Chemical analysis of a Vegetable is undoubtedly curious, interesting, and useful; but we all know that it is much more imperfect and much less satisfactory than the analysis of substances from the Mineral kingdom. The real essence which constitutes the active property of a Vegetable, and produces its medicinal effects, may sometimes elude chemical examination; and yet such an examination ought to be pursued with a view of making such discoveries as may be in our power. The nature and qualities of those substances which impart to a Vegetable its peculiar taste, and which may also give to it the peculiar qualities which it possesses, are not always within the scope of Chemical analysis; and after the most careful experiments, it is found that only an imperfect enumeration has been made of the various principles which it contains.

The utility of Chemistry in Medicine is eminently shown in Pharmaceutic Preparations, when it is indispensably requisite to endeavour, as far as possible, to fix that which is volatile, to preserve that which is corruptible, and to retain in every case those properties in which the virtues and efficacies of the Plant are found to consist. It is no less necessary to avoid the decompositions which might unskilfully be produced through an ignorance of the affinities and

the deterioration which might result from an improper preparation.

Medical Investigation and Experiments are of primary importance to the objects of this Society, and ought to be zealously and constantly, but carefully and cautiously, pursued; and I cannot too strongly recommend to you, the actual trial of the medicinal properties of Vegetables, as I am fully convinced that nothing can be more requisite, that nothing can indeed be so desirable, and that nothing can so much contribute to promote our views, and to extend and to improve the Materia Medica. For this purpose, it is not intended to proceed rashly or ignorantly, or upon grounds which are insufficient to warrant the trials. In some cases, they would be made in consequence of the Botanical analogy between the Vegetable, which is the subject of examination, and others of which the medicinal qualities are known. In other cases, the trials would be recommended by Chemical analysis, if it showed that the Vegetable possessed the principle, which is believed to constitute the medicinal virtue of some others, and if it is found in that Vegetable unmixed with such qualities as might counteract its effects, or might, in other respects, be injurious. Again, in other cases, trials would also be made from knowing that a Vegetable had been used with success in a variety of instances, though it had been employed by persons who do not belong to the Medical Profession; and the traditional evidence which is often found upon the subject, is not to be disregarded, and ought not to be undervalued. I have known, for example, that an Infusion in Vinegar of the leaves of the common Artichoke, has been administered, with great advantage, in cases of Rheumatism, and without acting always as a Diaphoretic; and has accomplished a cure when other remedies had failed, although that Plant is regarded by a medical writer as merely diuretic, and useful only in Dropsy. His observation may indeed

have been applied only to the esculent parts, and not to the Leaves which grow on the stem, and which are employed in rheumatic complaints; and we all know that, in some cases, the secretions, in different parts of the same vegetable, are totally different in their nature and qualities, of which a striking instance is given in the Peach.

When a Vegetable is administered, not in a simple state, but combined with other substances, the experienced Medical Practitioner will carefully investigate the nature of the preparation which is prescribed, and will consider what are the chemical affinities of its constituents, whether any decomposition or chemical alteration is produced by their mixture, which of them are useful, and which of them may be regarded as useless, or as mere vehicles for the others. Without venturing to give any opinion upon the new system of homœopathic medicine, on which I am incompetent to judge, and according to which no substance is to be combined with any other when it is medically administered, it will readily be acknowledged, that the simplicity of a preparation is in itself a considerable recommendation, and enables the Medical Practitioner to form a more correct estimate of its effects. It would not be sufficient, nor would it be satisfactory to this Society, to state in general the effects which had been produced by any application, for in every case they should be distinctly and minutely specified, and a full report should be made of all the symptoms and of all the circumstances of the patient.

I look forward with the greatest anxiety and impatience to the results of such trials, which will eminently conduce to the honour of our Society, to the advancement of our objects, and to the improvement of the Art of Medicine. I ardently desire to see those results communicated to this Society, and through our Transactions to the world; and if my humble opinion and my most earnest recommendation

should have any weight and influence, I would conjure those Members of our Society, who belong to the Medical Profession, to use all the exertions in their power, and to employ their sagacity and skill in pursuing an object, which is of inestimable and incalculable value.

It would of itself be a distinguished honour to our Society, and would afford a decisive proof of its merits and of its services, and would confer a signal benefit upon our country, if the result of these researches were simply to substitute indigenous Plants for some of those which are brought from a great distance, and purchased at a great expense. You all know how often those articles are adulterated, or even falsified; and although there may have been some exaggeration, there was unfortunately too much truth in the statements which were made upon that subject by an eminent Chemist. I was informed, that a person who was, many years ago, examined before a Committee of the House of Commons, and who had stated in his evidence, that he had imported an immense quantity of Starch, was asked for what purpose so large a supply was required, and that he answered with great frankness, that it was purchased by him in Lisbon at one penny per pound, and was retailed by him at several shillings a pound, under the name of *Arrow-root*. Such a falsification is not, I believe, to be detected by Chemical Analysis, which, in many cases of adulteration, has produced such useful and important discoveries. With respect to indigenous Plants, you are certain that no adulteration or falsification can take place; you have besides the advantage of employing them without their having been injured by the effects of long voyages, and of the passage in some cases of the Equator. They may also be better suited to the complaints of those who live upon the same soil and in the same climate in which they are produced, than other Vegetable substances which are brought from countries that are totally different from ours.

I concur entirely in the opinion of M. Loiseleur de Longchamps, as quoted by Dr. Grateloup, that it is not necessary to procure from another hemisphere all the Drugs which we employ. I have also the strongest reason to believe, that some very common Plants in this country would afford excellent substitutes for several valuable medicines; and such substitutes would be of extreme importance to the poorer classes of the community, who, from the great expense of medicines, are often deterred from taking them, till the disease with which they are afflicted assumes a dangerous character, or becomes difficult of cure. They would also be of the greatest advantage in Hospitals, and in the Naval and Military Service, and would, with respect to the former, enable them to administer relief still more extensively than it is at present in their power.

This is not, however, all that we hope and confidently expect to accomplish; and I entertain a firm and well-founded conviction, that the researches of our Society will discover Plants, many of which may be indigenous to this country, that will not only be satisfactory substitutes for those which are now employed, but would also supersede those mineral preparations which may be injudiciously and injuriously administered, and would effect more speedily, or more safely, or with greater certainty, than is at present practicable, the cure of diseases.

We know that the Creator and Preserver of the Universe, who is infinite in Wisdom, Goodness, and Power, has "nothing made in vain;" and that in the order of his Providence there is nothing which is unnecessary, nothing which is superfluous, nothing which does not contribute to his wise and beneficent designs. If we contemplate his works in the Vegetable Kingdom, we find that many of them may be created to delight by their beauty, their brilliancy, or their fragrance; that many of them were intended for our food and

for that of other animals; that many of them are medicinal, and that many others are usefully employed in arts and manufactures. There remain, however, an immense multitude of others which, with our narrow views, with our limited information, with our imperfect judgment, are considered of no value. Some of them are found in the greatest abundance, propagate themselves with extraordinary facility, and in different modes, and are admirably contrived by Providence for that purpose; but as they are eradicated with the utmost difficulty, and as we are ignorant of their real uses, they are everywhere viewed as unwelcome visitors, and are called Weeds. I was once told by my learned kinsman, Sir Joseph Banks, that "a weed is only a plant which grows out of its proper place, and that a Tulip or a root of Rhubarb, if it were to be found in a Corn-field, would as much deserve to be called a weed, as a Turnip or a Potatoe which would be seen in a Flower-garden." It is through our ignorance that they are despised; but we cannot doubt that Plants, which are not ornamental in themselves, nor, as far as we at present know, useful in any manner, either to the human species or to any other animals, were not created with those powers of reproduction which furnish them, in vast profusion, and with that tenacity of life which render it difficult to destroy them, without their having been intended for some purposes of eminent utility and advantage. We might otherwise conclude, that they would not have been endowed with such qualities; but, like many Flowers which adorn our gardens and which hitherto appear to be distinguished only by their beauty or their perfume, they would have required to be reared with the same care, and would not, from their luxuriance and abundance, force themselves upon our notice. It was said by a Poet, that

"Full many a flower is born to blush unseen,
And waste its fragrance on the desert air;"

and in the same manner we may observe, that many Plants, which are now despised as Weeds, and industriously eradicated, might, if their virtues were known, be carefully collected and usefully employed.

There is nothing so interesting, nothing so instructive, nothing which, to a cultivated mind, is so pleasing as a contemplation of the works of Providence; and the Vegetable World being, as Dr. Grateloup truly remarks, the most productive of medicinal substances, and being already known to yield many which are as active and powerful as any other, there is an extensive field for the important and beneficial exertions of this Society. Utility is the best test, the truest criterion, of the advantages of every study, of every pursuit, and, indeed, of everything else; and, weighed in that balance, I do not hesitate to declare, that the objects of this Society are of pre-eminent importance. We are united upon the principle of utility, and do not, and cannot, attempt to amuse or to attract by showy exhibitions; but we deserve the approbation, and we hope to receive the support and encouragement of our countrymen, and to render valuable services to Mankind.

Health is, we all know, the first blessing, and necessary to the enjoyment of every other, as well as to the full possession of our mental faculties; and it is duly appreciated by us when, for a time, we are deprived of it, and when we suffer from the attacks of disease, or from the various infirmities to which we are subject. Its preservation or restoration is of extreme importance to us all, and is the design of the Art of Medicine, which is more beneficial than any other, and essentially requires the Materia Medica, which, as far as relates to the Vegetable Kingdom, it is the object of this Society to extend and improve.

It may appear superfluous to make further observations upon the real nature and genuine objects of this Society;

but it is, in every case, of extreme importance that the means which we employ should be adapted to the end which we propose, and that our attention should be steadily devoted to our designs, without being diverted from them by secondary or collateral inquiries. I wish that no Member of this Society may entertain erroneous opinions upon this subject, that our views may not be misconceived by the Public, and that it may not be supposed that they are confined, or even that they are principally directed, to Botanical Researches, or are to be attained by collecting and by studying Herbaria and Works on Botany. We are not a Botanical Society, and we have never wished or attempted to emulate the example of the Linnæan Society, which was established for the investigation of Botany, and of other branches of Natural History, and has, by its charter, obtained privileges with which we ought not to interfere. We are primarily and essentially a Medical Society, which pursues Botany so far, and so far only, as may be requisite for its object of examining and ascertaining the medicinal properties of Plants, and which, for the same purpose, is assisted by Chemistry. Botanical analogy or Chemical analysis may, as I before remarked, guide, in some cases, your inquiries, but the one, as well as the other, would be of little or no avail without the test of actual experiments, cautiously made and carefully recorded. It cannot be too frequently repeated, it cannot be too forcibly impressed upon your minds, that without such experiments this Society cannot be successful, cannot acquire that fame and reputation which would eminently promote its prosperity, and cannot confer upon mankind those benefits which I most anxiously and ardently desire.

With respect to our indigenous Plants, which ought to be the first, and are, I think, the most interesting object of our researches, and particularly with respect to such of them as are found in abundance, and which appear, therefore, to

have been designed by Providence for purposes of great utility, their botanical characters are already well known, and Botany could be of service only in determining the analogy which exists with others that have been ascertained to be medicinal, or in affixing the scientific names to Plants, which in different districts may receive various popular appellations. With respect to other Plants, and especially to those which may have been recently discovered, Botany is also of service, by defining the precise difference that exists between a Plant that is employed for medicinal purposes and other Plants which are nearly allied to it in their character. In the one case, as well as in the other, Botany is only an auxiliary, and cannot be justly viewed in any other light. I do not make these observations to disparage Botany, of which I duly appreciate the value, but to dissuade you from directing your attention and exertions to objects which are solely of a botanical nature, and from attaching too much importance to exotic Plants, to the neglect of many which we find in this country, and which are not indeed rare or curious, but are probably more suited to our use.

Of still greater value is Chemistry, particularly when applied to one of its most useful and important branches—Pharmaceutical preparations. One of the points which would deserve the investigation of this Society is, to ascertain, by Chemical examination, and afterwards by actual trial with respect to every medicinal Plant, and especially with respect to any Plant of which the virtues may be newly discovered, in what part of it are to be found principally those properties for which it is employed. We know that, in some Plants, different parts possess different qualities, totally dissimilar in their nature, and it may easily be supposed, that a property, even when it is found in every part of a Plant, may, however, prevail in a greater degree in one part of it than in others. As every Plant cannot always be procured

in a fresh state, it appears also very requisite to ascertain which of its medicinal parts can be best preserved; in what manner the decomposition of them can, in some degree, be prevented; whether the Juice, when reduced by gentle heat to an inspissated Jelly or Roob, continues to be possessed of its original properties; or whether the Roots and Leaves should be kept, as may be done for many months when they are dried, or whether Extracts should be prepared from them when they are fresh. It was found by Mr. Houlton, that the Extract of CONIUM *maculatum*, which he prepared by spontaneous evaporation, had been kept for two years with very little change in its sensible properties, and he was convinced of its decided superiority over that which is usually made. He is of opinion, that the mode which he recommends will produce an Extract always uniform in its nature, and will prevent the accidents which occur in the other process. I had the pleasure of presenting to this Society a very elaborate Dissertation in Latin, by Dr. Geiger, on the analysis of the CALENDULA *officinalis*, which the Author considers to be one of those common indigenous Plants that have unjustly fallen into disrepute, although it is supposed to be the same that was praised by Dioscorides for the cure of Steatoma. In that Dissertation, my learned Friend, who with the most laudable industry and perseverance had made, with respect both to the Flowers and to the Leaves, a number of experiments, the results of which he has minutely described, arrives at the conclusion, that the CALENDULA is certainly one of the most efficacious medicines, and makes an observation of the greatest importance, "*cunctas plantas cumprimis azotum continentes aut nutrientissima aut efficacissima medicamenta præbere.*" This principle may, I flatter myself, be of the utmost service in the Chemical analysis of Plants, respecting which I most earnestly wish tha many other Works existed similar to that of Dr. Geiger.

He recommends a strong Galvanic Battery as of the greatest utility in that analysis, for which he represents it to be "*quam maxime aptam*," and this remark ought to receive due attention in prosecuting such inquiries. The proper time of gathering the Leaves of the CALENDULA is stated to be before the appearance of the Flowers; and Dr. Geiger observes, that the parts of Plants are found, at a precise period which he describes as that "*maximæ actionis vitalæ sive summæ evolutionis*," to be peculiarly endowed with the properties which they possess. I understand this observation to apply to Flowers at the time that they are in full bloom, and to Fruits at the period of their perfect maturity; but with regard to the Roots of Plants, it is remarked by Mr. Houlton, in treating of the Extract of the LEONTODON *Taraxacum*, that "its excellence depends upon the season in which the Root is gathered;" that in the month of August "the Root is full of the *succus proprius*," but that the Extract "prepared in March has very different sensible properties and no appreciable medicinal virtue." When the Root is gathered at a proper season, and an Extract is prepared from its Juice by spontaneous evaporation, it was found, by Mr. Houlton, to be a "very efficacious medicine" in chronic derangements of the Liver and of the Stomach; and it appears, by a Letter addressed to him, to deserve fully the commendations which were bestowed upon it by the late Dr. Pemberton, and that it was used with great success as a "most excellent deobstruent" in hepatic affections. On the chemical analysis of Medicinal Plants, and on the proper mode of conducting it, you will find very valuable observations in a Paper by Dr. Fromherz, Professor of Chemistry, which, as it is in the German language, it would be desirable to translate for general use in this country.

I have said, that I consider our indigenous Plants to be the first and most interesting object of our researches, and I

need not remark, that the advantage of procuring them genuine, and in a fresh state, and at a small expense, is of very great importance, and that they may be supposed to be more peculiarly adapted to the diseases of the same climate than those which are brought from remote regions. The medicinal Plants which grow in other countries, but which seem to be suited to our soil and climate, might perhaps be reared in it without difficulty ; and a Garden would be very useful in which experiments might be made to cultivate the medicinal Plants of other countries, and from which their Seeds or Cuttings might be distributed gratuitously to Members of this Society.

Although the medicinal properties of many of our indigenous Plants are, in some degree, known, it must not, however, be supposed, that further investigations respecting them would be unnecessary or superfluous. The forms in which they ought to be exhibited, and the doses in which they ought to be administered, are not, in most cases, defined, nor are their particular modes of action fully and satisfactorily stated. Gray, in his Work on Pharmacology, enumerates many indigenous Plants which have laxative properties, but does not specify whether they have any other, and what action, or whether they operate simply as propellants, and therefore the disorders to which some of those Plants may be peculiarly adapted are not described. Such is the admirable order which Providence has established in the creation, that every production has its own properties and uses ; and it cannot be thought that all the Plants to which I have just referred are exactly similar in all their qualities, or should be administered alike in all cases in which laxative medicines may be required. It is by distinguishing the precise mode of action of each medicinal substance, by defining its use, and by determining its application in each particular case, according to the nature and symptoms of the malady, that the Physician is guided in his prescriptions. To

speak only of those laxative medicines which are yielded by vegetable substances, we all know that Scammony could not with propriety be administered in every case in which Manna or Jalap might be given, and that the qualities of Rhubarb, for example, are very different from those of Senna. We may conclude, by parity of reasoning, that similar differences may exist with respect to those indigenous plants which are already known to possess in common a medicinal property, and we perceive, that even with respect to such plants there is much that deserves inquiry.

Upon examining some foreign Pharmacopœiæ which I would recommend to your attentive perusal, it will be per ceived that the Austrian Pharmacopœia contains 71 Plants,*

* Æsculus hippocastaneum.
Achillea millefolium.
Amydalis Persica.
Angelica Archangelica.
Arctium Bardana.
Arctium Lappa.
Arnica montana.
Artemisia Abrotanum.
Artemisia santonicum.
Boletus fomentarius.
Boletus igniarius.
Cannabis sativa.
Chenopodium ambrosiodes.
Cochlearia officinalis.
Cucurbita Pepo.
Curcuma longa.
Fumaria officinalis.
Geum urbanum.
Glechoma hæderacæa.
Gratiola officinalis.
Hyssopus officinalis.
Illicium anisatum.
Imperatoria Ostruthium.
Juglans regia.
Lactuca scariola.
Ledum palustre.
Lichen parietirius.
Lichen rocella.
Ligusticum Levisticum.
Loranthus Europæus.
Lycopodium clavatum.
Lythrum salicaria.
Matricaria Chamomilla.
Melilotus officinalis.
Melissa officinalis.
Mentha aquatica.
Mentha crispa.
Ononis spinosa.
Orchis mascula.
Orchis morio.
Phellandrium aquaticum.
Pimpinella Saxifraga.
Pinus Larix.
Polygala vulgaris.
Polypodium vulgare.
Prunus Cerasus.
Prunus Lauro-Cerasus.
Prunus spinosa.
Pulsatilla pratensis.
Ribes rubrum.

which I do not find in the Pharmacopœia of the Royal College of Physicians. Of such Plants there is an additional number of 31 in the Bavarian Pharmacopœia,* which appears to me admirably arranged, and of 29 in the Prussian Pharmacopœia,† making a total of 131, of which 64 are

Rhus Cotinus.
Rumex acutus.
Salvia officinalis.
Sambucus Ebulus.
Saponaria officinalis.
Satureja hortensis.
Scabiosa arvensis.
Symphytum officinale.
Tanacetum vulgare.
Teucrium Scordium.
Theobroma Cacao.
Thymus Serpyllum.
Tilia Europæa.
Triticum repens.
Urtica dioica.
Veratrum Sabadilla.
Verbascum phlomoides.
Verbascum thapsus.
Veronica officinalis.
Viola odorata.
Viola tricolor.

* Anemone pratensis.
Antirrhinum Linaria.
Apium petroselinum.
Arundo phragmites.
Berberis vulgaris.
Calamus Rotang.
Capsicum annuum.
Carex arenaria.
Carlina acaulis.
Ceramium helminthochorton.
Ceratonia siliqua.
Centaurea benedicta.
Chelidonium majus.
Clematis erecta.
Convallaria majalis.
Lawsonia inermis.
Maranta Galanga.
Mesembryanthemum crystallinum.
Ocymum basilicum.
Plantago Cynops.
Prunus padus.
Rhus radicans.
Scandix cerefolium.
Secale cereale.
Sedum acre.
Sysymbrium Nasturtium.
Teucrium chamædris.
Teucrium chamæpitys.
Teucrium marum.
Vicia Faba.
Zizyphus vulgaris.

† *Achillea ptarmica.*
Althæa rosea.
Amomum curcuma.
Amomum Zedoaria.
Amyris Zeilanica.
Aristolochia rotunda.
Arum maculatum.
Athamanta oreoselinum.
Bryonia dioica.
Calophyllum Tacamahaca.

indigenous to this Country. Of 234 Substances which are enumerated in the Austrian Pharmacopœia, 174 are vegetable; and it is well known that the vegetable kingdom furnishes a much greater number of medicinal substances than any other. Amongst the indigenous Plants which are received into these Pharmacopœiæ, but not into ours, is the common Lime tree, which, in some English Works on Medical Botany, is not even noticed as being possessed of medicinal qualities, but of which I have, on several occasions, experienced the salutary effects as a mild Diaphoretic; the ACHILLEA *millefolium*, of which a Decoction is administered internally for the cure of Hæmorrhoids, and is said to be of very great service in that complaint, and of which the Root was considered by Gray to be a substitute for Contrayerva; and the PHELLANDRIUM *aquaticum*, which I find to have been prescribed by the celebrated Hufeland. These Pharmacopœiæ exhibit additional proofs, if indeed any could be requisite, of the value of several indigenous plants, which may be of great utility in the Materia Medica, even when they only afford satisfactory substitutes for others which are of foreign growth, and which are always more expensive and often less genuine than those which we could procure at home.

Croton lacciferum.
Dictamnus albus.
Epidendron Vanilla.
Ferula Persica.
Geoffroya inermis.
Hypericum perforatum.
Linaria vulgaris.
Laurus pichurim.
Origanum Creticum.
Origanum majorana.
Pæonia officinalis.
Pyrethrum Parthenium.
Pyrus malus.
Rhododendron Chrysanthum.
Scorzonera Hispanica.
Strychnos nux vomica.
Thuja articulata.
Thymus vulgaris.
Viscum album.

The Plants of which the Names are printed in Italics are indigenous to this Country.

One of the most important and beneficial discoveries which could be made by this Society would be of Plants, by the operation of which the diseased organs might be primarily affected in the same manner as the action of the DIGITALIS *purpurea* appears to be directed to the Heart, and that of the CHENOPODIUM *olidum* to the Uterus. Might we not hope, if a medicine could be found of which the action were directed to the Lungs in a diseased state, that it would be possible to cure Pulmonary Consumption, which is so insidious in its origin, so dangerous in its progress, and so destructive in its effects? Such a discovery would deserve a public reward, and would justly entitle its author to the gratitude of Mankind; and the trials which would be requisite for the purpose might be made without danger in some stages of the disorder. Upon this point I would call your attention to a Plant, mentioned in a Work which I recently procured in Germany, and which was published last year at Leipzig. The Plant is termed by the Author, GALEOPSIS *grandiflora*, and appears to be the GALEOPSIS *ochroleuca*, or *villosa*, which is indigenous to this country, and a Decoction of the Flowers and of the Leaves is given in cases of Consumption. He states that this Plant is much employed as a popular remedy, and its efficacy ought to be submitted to actual trials in a variety of cases. I think that Experiments may properly be made with respect to any of those vegetable substances, which, though they are not professionally prescribed, are, however, used as popular remedies in several Districts, from an experience, or even from an opinion of their virtues; and, also, but with more caution, with respect to other vegetable substances which, from Botanical analogy and from Chemical analysis, may be considered as medicinal.

Another most important discovery would be, that of a vegetable substance which would have a specific action on

the Liver, and which would cure, without the assistance of mercurial preparations, the diseases of that organ. The deleterious effects of some of those preparations on the general health, and on the vital powers, are too well known, and have been too generally experienced to require any observations from me; and you will concur in my opinion, that a substitute which might be found for those remedies, and which could be administered with safety in other respects, would be of great benefit to Mankind. The mineral waters of Carlsbad, in Germany, have very long possessed much reputation in the cure of disorders of the Liver, for which they have been found, by experience, to be eminently efficacious; and they do not appear, by Chemical analysis, to contain any portion of Mercury. It cannot, therefore, be justly contended, that Mercury is the only specific for such disorders; and I speak from the authority of a most eminent Physician in this country, when I state that, in his judgment, there is no medicine which is so much misused as Calomel. Although Mercury forms no ingredient in the composition of the Carlsbad Waters, I am ready to admit that, in addition to those substances which have been found in them by analysis, such as Soda, Glauber Salt, Common Salt, &c., they may contain some others, which, from the peculiarity of their nature, may not be discovered by the art of Chemistry, and which may greatly contribute to their salutary effects. A very remarkable instance of this is exhibited in the Waters of Gastein, which are also in Germany, and which are of extraordinary and indeed surprising efficacy in the cure of contractions, even of such as are the most inveterate, although those Waters appear by analysis to contain only substances so insignificant in their nature, and in such very small quantities, that some Physicians have considered those Waters to operate only by their heat, which, when they rise from the spring, is stated to be 38° of Reaumur, or 118° of

Fahrenheit. A German Physician, for whom I entertain the highest respect, related to me from his own personal observation, a most remarkable cure, from the use of the Gastein Waters, of a distortion of the limbs which had existed from infancy; and he had communicated a report of it to the Academy of Medicine at Paris, of which he was a Member.

It appears also very desirable to investigate accurately the nature and properties of the COLCHICUM *autumnale*, and to ascertain whether it will dispel a fit of the Gout; whether it ought to be taken in small doses, as was done by Sir Joseph Banks, to serve for an alterative, and to prevent the recurrence of a fit; and in the one case, as well as in the other, to discover in what manner it ought to be prepared and administered, or with what other medicines it ought to be blended, in order to secure the Patient from any deleterious effects. The medicine which is supposed to be made from it is known to be very potent; but, in chronical disorders, the potency of a remedy may not be so important as its safety; and the effects, when they are slow, may not be the less certain, and seem more congenial to the course of nature, which, in the formation and developement of vegetables, as well as of animals, advances gradually in its work, and with that admirable order and arrangement which exemplifies, in every case, the infinite wisdom and goodness of Divine Providence.

You will not, and indeed you cannot, suppose that I am guilty of the vanity and presumption, which I should think unpardonable, of giving any opinions of my own, if even I were competent to form them, upon these Plants, or upon any medical question to which I have directed your notice. Upon every subject that is connected with Medicine, it behoves me, who am not of the Medical Profession, to speak with the utmost diffidence and humility; and as I have now the honour to speak in the presence of some who are emi-

nently distinguished in that Profession, and who unite the advantages of great personal experience with those which they have derived from the study of Medicine, I feel the more sensibly my own deficiencies, and find it the more requisite to solicit your indulgence. As I am, and shall always continue to be animated with an ardent zeal for your prosperity and success, I have considered it to be my duty to submit to you some of those suggestions, which, I flatter myself, may be useful in your researches, and, amidst the variety of objects which might attract your attention, to recommend some practical inquiries which appear to be of great importance and advantage, and which, if their results should realize your wishes and my own, would very much promote the fame and reputation of this Society, and thereby extend the sphere of its activity. Here I must again repeat, that actual trials of vegetable substances are indispensably necessary for your designs, in which you would otherwise fail, however learned, however laborious might be your theoretical and scientific investigations. You know that the virtues of the Peruvian Bark were first discovered by accident, that further experience confirmed the knowledge which was thus acquired of its salutary effects, and that it would not otherwise have been considered as belonging to the Materia Medica, or received into any Pharmacopœia, although the most elaborate disquisitions had been written upon its Botanical analogy, and the most accurate examination had been made of its Chemical constituents. The trials which I so strongly recommend cannot be conducted properly, or in a satisfactory manner, except by those who belong to the Medical Profession; and in this, as indeed in every respect, their assistance will confer inestimable advantage upon this Society.

Allow me to again exhort you, though in language less energetic and impressive than the importance of the subject

would require, to prosecute your inquiries, with a steady and undeviating attention, to their ultimate object, which is of a practical and not of a theoretical nature, to extend them far beyond mere Botanical examination, and even beyond Chemical analysis, to subject the medicinal qualities of vegetable substances to the unerring test of experience, by actual trials, made by those Members of the Medical Profession, whom we have the happiness and honour of seeing associated with us in this Society; and to recollect, always, that as our views are directed to general utility, we ought first to investigate the qualities of those Plants which, in that respect, are justly entitled to the preference. It is by these means, and by these only, that you will succeed in attaining the useful and most beneficial objects which you have in view, and which no person has more at heart than the individual who now addresses you; and that you will receive, as I fervently hope may be the case, increased support and encouragement from the world, for in this, as well as in other instances, the Tree will be judged of by its Fruits.

Is it to be supposed that those Vegetables are quite insignificant and useless which do not attract our attention by their sensible qualities, and which do not appear to be active in their medicinal effects? If I could presume to offer any opinion upon such a subject, I would remark, that the efficacy of a medicine may depend not only on its potency, but also on its facility of assimilation. We know, for example, that only three grains of Steel are contained in the whole quantity which is consumed of the Waters at Tunbridge Wells by a patient who takes them during the usual period, and yet the strongest chalybeate medicines which can be administered do not produce the same operation. Nature, which is always admirable, and, to our feeble and limited understandings, often incomprehensible in her works, prepares these and other Mineral Waters with a skill which no

Art can attempt to rival, and shows that their sanative power does not result from the quantity, or from the direct agency of the constituent substances which Chemical analysis discovers in them, but from other qualities which hitherto we have been unable to investigate. As the body derives nourishment from the quantity and quality of the food, which is not merely received into the stomach but is converted into chyle, so also the efficacy of medicinal substances, which are employed as alteratives or in the cure of chronical disorders, may arise from their being easily assimilated, and that property may reasonably be expected to be found more in Vegetables than in Minerals. Even in acute disorders the repetition of a dose may be preferable to one more powerful in its immediate activity; and the principle is often illustrated in Nature, that an effect is produced, not by the force but by the frequency with which the cause operates, and could not, in some cases, be produced otherwise with safety. The celebrated Dr. Tronchin, a disciple of Boerhaave, removed with ease and expedition, by administering every half hour a small quantity of coarse Sugar dissolved in tepid water, a visceral obstruction which had continued for many days, and which became very painful and alarming; but if a violent remedy had been employed great injury might have resulted to the patient. As the circulation of the blood and animal heat are gradually to be restored to a frozen limb, which would be destroyed if it were to be suddenly exposed to the warmth of a fire, so, in many cases, would it be imprudent to employ too violent or too immediate a counteraction to the evil which it is intended to remove. The gentle operation of some vegetable medicines, far from being an objection to their use, ought, in some cases, to be considered as a recommendation, and may peculiarly qualify them as alteratives, for which several of those Plants may have been designed which are not much distinguished by their sensible qualities.

Some vegetable substances are as powerful in their operation as any which are furnished by the Mineral Kingdom; but it would be a rash and unfounded conclusion, that those which appear to be feeble are, therefore, of no value. Some of them may have been intended by Providence for external use, and to be employed by the Surgeon more than by the Physician, as Vulneraries, as Styptics, as Emollients, or for other topical applications. I am informed, that the most grievous malady with which human nature is afflicted—mental derangement—has been effectually cured in a short period of time by Fomentations and Cataplasms of the GLECHOMA *hederacea*, applied to the sutures of the head. Ray mentions the case of a violent and inveterate headache, which was entirely removed by drawing into the nostrils the juice of this Plant, upon which he bestows so high an encomium, that he says, "*Medicamentum hoc non satis potest laudari, si res ex usu estimarentur auro æquiparandum.*" This Plant, which is received into the Austrian Pharmacopœia, but not into that of the Royal College of Physicians, was considered by Dr. Pitcairn to be of extreme efficacy in Consumptive cases; and a Syrup of its Juice was recommended by Boerhaave, in the Hooping Cough, in Spitting of Blood, and in Hæmaturia. It appears, therefore, that its qualities should be fully examined, and should be subjected to a Chemical analysis, and afterwards to actual trial.

With respect to those plants which, from Botanical analogy, are considered to be medicinal, but which, from an imperfect knowledge of their properties, are not employed by the medical practitioner, nor even as popular remedies, their constituent principles can only be ascertained by Chemistry, which ought to commence the investigation, and to precede the trials that might subsequently be made. It would thus be found, whether and in what degree the principles which they contain are similar to those of other Plants, the qualities of

which are already known, and consequently whether they might be supposed to produce the like effects; whether they seem to possess more or less activity than those which they resemble; whether they can be extracted with greater facility or in larger quantities; or whether, on the other hand, they are feeble and blended with other qualities which impair their power, and might be prejudicial to their success. If it were to be shown by analysis, that a Plant possesses, in a powerful degree, and in great abundance, any principle which seems to constitute the sanative quality of another, it might afford an useful substitute, and might be found to be a valuable addition to the Materia Medica. In the opposite case I would not, however, draw the contrary conclusion, or condemn, as undeserving of further notice, a Plant which appeared, by analysis, to be only slightly endowed with medicinal qualities, and to be composed principally of substances which, through our ignorance of their nature, are supposed to be insignificant. Chemical analysis, though its examination may be very accurate and minute, and though it may be conducted with great skill, aided by the advantages of long experience, cannot ascertain, in every case, what are all the constituents of a vegetable substance, nor even in which of them resides its medical virtue. The art of Chemistry, in its present state, and notwithstanding the vast progress which it has made, does not seem to be sufficiently advanced for the purpose; but it is of signal utility in directing our inquiries with a view to those practical trials, the advantages and importance of which cannot be too highly prized.

When Dogs are bitten by one which is, or is supposed to be, in a rabid state, it is usual, and no doubt very proper and advisable, to destroy, or to confine them for the prevention of further mischief; but a very important discovery was made by means of one of them which was imprudently allowed to range at large, and which sought an Antidote by the same

instinct that leads them to eat Grass as an Emetic. The fact was remarked by an accident that fortunately supplied the place of the accurate and attentive observation which would otherwise have been necessary, and which would have required great precautions to have guarded against danger. A remedy was thus discovered which is acknowledged to be very useful, and may, perhaps, when properly administered prove to be efficacious. It appears from the statement of the Chevalier de Swinjin, and it is mentioned by the excellent Röver, in one of his instructive works, that a man in the government of Tula, in Russia, who had climbed upon a tree to escape a Dog which had for some days been in a rabid state, perceived the animal to stop when it reached a marshy spot at a short distance from the tree, and to scratch eagerly with its feet till it had grubbed up a root, which it voraciously devoured. He remarked that the Dog, in half an hour afterwards, ceased to foam at the mouth, and that its eyes, which had been dull and inflamed, resumed their natural appearance. The Dog came to the tree, recognized the man who was upon it, and was found by him to be perfectly recovered. He went to the marshy spot, took a portion of the Root, and employed this remedy with the greatest success for twenty-five years. This Plant, which is entitled to a most careful examination and to further trials, is a very common aquatic weed, the ALISMA *Plantago*, of which there is an ample description and accurate drawing in the second volume of Curtis's *Flora Londinensis*, p. 78. Two or three doses were considered sufficient for a cure, and the Roots were given in powder; but the fresh Roots would, I think, be far preferable, and the Plant might be cultivated for the purpose of having a constant supply of them. May we not suppose that Dogs would be deficient in an instinct of that description if the *Rabies Canina* did not exist among those which appear to live in a state of nature? and if it were a malady arising

altogether from domestic habits, from such unsuitable food, from such exposure to heat, or from such continuance of excessive exertion, as they would shun in their primitive condition ?

I would also solicit your attention to the GENTIANA *Chirayita*, as we are informed upon medical authority, " that it has been proved by numerous trials to act as efficaciously in removing visceral obstruction, and in promoting the secretion of the bile," as preparations of Mercury, that it will in such cases supersede them, and that it has from time immemorial been esteemed by the natives of Bengal, where diseases of the Liver are so frequent and so violent with Europeans. A safe and effectual substitute from the Vegetable Kingdom for those mercurial preparations, which are given in disorders of the Liver, appears to me an object of primary importance, and well deserving the researches of this Society. The substitute, wherever it may be discovered, will be of the greatest advantage, and I am not without hopes that it may be found amongst the Plants which are indigenous to this country.

It may be said that I overrate the value of those Plants, that I assume as an axiom, and without proof, that all of them are useful, and that I expect common Weeds to be employed as specifics. We know, however, that none of them were created without some purposes of utility, that a contrary supposition would be inconsistent with the order of Divine Providence, and that those which are not ornamental or fragrant, must be considered to be in some other mode subservient to the uses of Mankind or of the animal creation. Those uses may be either for Food, for the processes required in Arts and Manufactures, or for Medicine ; and it may not be unreasonable to conclude, that the latter may be intended when the two former do not apply. That conclusion would be drawn with respect to any particular Plant, either from Botanical analogy, or from Chemical analysis ; and if both the one and the other were satisfactory, the Plant would be considered

to be medicinal. As to those Plants which are termed Weeds, the very circumstances attending some of them, that they are propagated with great facility, like the LEONTODON *Taraxacum*, or that they are eradicated with great difficulty, like the PLANTAGO, seem to me to afford indications of their having been designed for very useful and valuable purposes. The former is already known to be an excellent remedy, and if it has not always been duly appreciated, this may perhaps have arisen partly from the season in which it was gathered, partly from the manner in which the Extract was prepared, and partly from inattention to another circumstance mentioned by Mr. Houlton, that its virtues are much impaired by severe cold, as was found by him to be the case after last winter.

The assistance of the Medical Profession, which I have always been most anxious to obtain, is indispensably requisite to our success, for it is only by those practical trials which their professional talents enable them to direct in a safe as well as satisfactory manner, that the medicinal qualities of any substance can be fully ascertained. A Plant may appear from Botanical analogy to be endowed with active powers, and such may be proved by Chemical analysis to be the fact, but its precise operation, the cases in which it ought to be administered, and its actual effects in any diseases for which it may be considered useful, can be learned only from repeated trials judiciously made, carefully conducted, and accurately observed. In countries where Botany as well as Chemistry are unknown, many remedies have been beneficially employed, and their efficacy is evinced by the unerring test of experience, but we may be unable to pronounce with certainty what is their mode of action or even what is the principle which constitutes their potency. Such is the case with many popular remedies, which may not receive due attention in medical practice, but which always afford valuable hints to further investigation, and may frequently be employed with

advantage. I may mention, as an instance, that, a person with whom I am well acquainted, and on whose veracity I can implicitly rely, assured me that while suffering from a hoarseness which rendered his voice almost inaudible, he had the curiosity to try a remedy that is mentioned by the celebrated John Wesley, in a work entituled "Primitive Physic." It consists in rubbing the soles of the feet with Garlic and Hog's Lard, before a fire at bed-time, and the result was that the hoarseness was immediately removed, and that in less than two minutes afterwards the taste of the root was perceptible in the palate. It would be difficult, it may perhaps be impossible, to explain in this case the *modus operandi*, the manner in which the taste of the Garlic was so rapidly transmitted, or the cause by which the complaint was so suddenly cured, but some instruction is to be drawn from this fact which is noticed only as an illustration. It will not be supposed that I recommend an empirical practice, but I would not omit any opportunity of renewing my recommendations of submitting to actual trials those substances which may be administered with safety and which are supposed to be successful in the treatment of diseases, and also of investigating fully and of employing scientifically those remedies which have been found to be useful, although they are not contained in any Pharmacopœia, and have been administered by unlearned persons who have acquired only by tradition a knowledge of their virtues.

It is only when applied to purposes of practical utility, which are alone of real importance, and which ought constantly to be the objects of our pursuit, that Botany can be of value, for it would have very little merit, and have no claims on our attention, if it were to be confined, as is too frequently the case, to the complete enumeration and minute description of Plants, or even to their systematic arrangement, which, notwithstanding all the care and industry that have been be-

stowed upon it, seems to be still far removed from the perfection which is so much to be desired, and will, I have no doubt, be ultimately attained. The imperfection of the present nomenclature and classification is evinced not only by the multitude of Synonyms, but also by innumerable cases, in which the same plant is arranged in a different Genus, by some Botanists, from that which others have considered to be more appropriate. Hence arise that uncertainty and confusion which is so injurious to Botany itself and so inconvenient to those who study it; and hence we may reasonably infer that the present system is not entirely satisfactory even to those who are the most competent authorities upon the subject. Although Linnæus classed the whole Vegetable Kingdom into 57 Natural Orders, they have since been increased to the number of 229, some of which have been again divided into Tribes, Sections, and Sub-Orders, while there are 34 Orders, each of which contains only two Genera, and about as many other Orders, comprising only a single Genus, and in some cases a Genus which has but one Species. While some plants, like Mignionette, the Pomegranate, and the Cobæa *scandens*, appear to be thus unsociable, there are others which, notwithstanding all their dissimilarities, are classed together; and the Elm, the Hop, the Fig, and the Nettle, are included by Jussieu in the same Order, and according to what is called a Natural Arrangement. According to another classification, the Elm belongs to the Order Ulmideæ, the Fig to the Artocarpeæ, and the Hop with the Nettle to the Urticæ. Classification is the more important, because Plants which are similar in their characters are so likewise in their qualities, and ought therefore to be arranged in such a manner as to facilitate the investigation by analogy. The advantages that are derived from that analogy would of themselves offer a sufficient recommendation to the study of Botany, which is also of extreme utility in es-

tablishing those precise and accurate definitions by which each Plant may be recognised, and may also be effectually distinguished from every other. The study must, however, be pursued with reference to some practical object, without which it becomes uninteresting to ourselves and unprofitable to others.

Amongst the Chemical preparations that have attained great celebrity is Calomel, a Medicine which enfeebles all the vital powers, and which may, from that circumstance, derive its efficacy in subduing active inflammation, but its operation is eminently injurious, and it cannot be sufficiently deplored that it should be rashly and ignorantly employed as a domestic remedy, and even as an ordinary aperient, instead of being reserved solely for those disorders which might seem to require it under the advice, and by the authority, of a medical practitioner. As it is frequently thus misapplied, and as fashion, which is so often synonymous with folly, has promoted its use even in the tender age of infancy, we cannot be surprised that nervous disorders are common, that bodily vigour and mental energy are impaired, and that cases of insanity have become more numerous. An eminent Physician, whose experience in such cases was very extensive, and whose opinions were founded upon accurate observations, assured me that insanity had, in many instances, arisen from the injudicious employment of Calomel, and such must naturally be the result, when both the mind and the body are debilitated by factitious means, when the infirmities of old age are prematurely produced, when life becomes languid, and the power no longer exists of enjoying the gifts of Providence, and of sustaining with composure the cares and vexations of our earthly pilgrimage. Under such circumstances, an infirmity may become intolerable, and the mental faculties may be disturbed, if not destroyed; but even when such lamentable consequences do not ensue, a shattered constitution, a sort of

nominal existence in a melancholy and miserable state of dejection and debility, with enfeebled nerves and almost exhausted powers, may be more afflicting to the patient than a chronical disorder. It will be said, and I am ready to admit, that a mercurial preparation has not, in an equal quantity, the same action on different individuals, and that some persons are more susceptible than others of its injurious effects; but this circumstance furnishes an additional argument against the unnecessary administration of such a remedy, since its power, in any particular case, can be learned only from experience, and is sometimes found to be greater than was expected or wished by the Physician. So extensive is the misuse of mercurial preparations, and so injurious are their ultimate operation, that it would be of extreme importance if effectual substitutes could be discovered for those medicines which, from their potency, may be dangerous, if not fatal, when they are misapplied, and which, even when they remove a disorder, may produce permanent injury to the Patient. That such substitutes may be found in some disorders, was shown in a case which came under my personal observation, of a Lady to whom I was related, and who had been accustomed, for the purpose of allaying the pain arising from an internal complaint, to take Opium, of which the dose was gradually increased till it amounted to a considerable quantity; but it was at last discovered, though it was then too late to remedy the evils which had been thus occasioned, that the same relief was experienced from drinking Soda Water. Nothing would more contribute to the advancement of medical science, to the honour of the Medical Profession, and to the benefit of Patients, than the cure, by safe and simple means, of difficult or dangerous diseases, instead of employing, as is too frequently done, and even in cases of a different description, substances which are poisonous, and therefore powerful, but pernicious.

It is well known that in some instances Drugs which are vended under the same name and might be supposed to be similar in their effects, are so different in their qualities and powers, that the administration of them is attended with much uncertainty and therefore with considerable danger. The same prescription may, in cases exactly similar, produce, from the dissimilarity in the properties of the Drug that is employed, either the cure or the fatal termination of the malady, and the accurate discrimination of the Drugs which are genuine from those which are of inferior quality, is of the utmost importance to those by whom they are compounded, as well as to those by whom they are administered. I speak from very high authority when I state, that of some Drugs which are vended in this country only four parts in a hundred are of the best quality, and are consequently possessed of their full efficacy, while the other ninety-six parts contain in some instances only one half the quantity of the active principles which ought to belong to them. I am assured that of the Colocynth imported into this country, only one hundredth part is of the best quality, that there is of Scammony, of the Peruvian Bark, and of Rhubarb, only a very small proportion, but that there is of Ipecacuanha and of Sarsaparilla a larger proportion, and a larger still of Jalap, and all of these are, I need not say, very important medicines which are frequently administered. If all of them were of an inferior quality they would of course be far less efficacious, but there would not be the same difficulty and danger in employing them, as is now experienced from the inequality in their power and consequently from the uncertainty in their operation. The great difference of price between those of the best and those of an inferior quality offer a strong inducement to use the latter, and it would be an inestimable advantage to the art of Medicine if satisfactory substitutes for them could be discovered amongst the

plants which are indigenous to this country, of which the analysis would be highly interesting, and may, I hope, be considered worthy of the scientific researches of this Society, the objects of which are so important and beneficial to mankind.

It is the opinion of Dr. Hancock, that this country possesses indigenous remedies "equal in all respects to those abroad, were they duly attended to by intelligent persons, and employed in sufficient doses," and that "although in hot climates the essential properties may be more highly elaborated, yet those of this country are doubtless equally adapted to its diseases." The former of these propositions is illustrated by an admirable Paper of Dr. Rousseau, on the efficacy of the common Holly in curing intermittent Fevers, even such as had resisted the use of Cinchona and Quinine; the latter by Dr. Sigmond, with respect to Elm Bark which, in some Leprous diseases that are known in this country, can be administered with very great advantage, although more potent remedies, like the Ionidium *Marcucii*, may be requisite in South America where the malady assumes, from the heat of the climate, or from other causes, an aggravated character. It cannot be supposed that any of the diseases which have existed even from the earliest ages were incurable except by Drugs that could be procured only from the other side of the Atlantic, and that until the discovery of America, those who were thus afflicted were doomed to languish in a helpless and hopeless condition. Such a supposition would be inconsistent with the dispensations of Divine Providence, which display infinite goodness and wisdom, and which induce me to believe, that in every country those remedies are indigenous that are best suited to its maladies, influenced as they must be by its soil and climate, which determine also its vegetable productions. Nor can it be supposed that, for the cure of any of those diseases, we must necessarily have

recourse to the operose processes of Chemistry, which remained unknown during many centuries, and still continue to be so in many countries, and that until they were invented, and unless they were employed, the sufferings of the human race could neither be remedied nor relieved. The advance of civilization has brought with it new medicines, but also new disorders; and those which now prevail seem to indicate debility, while those of former ages were of the contrary character. I will not now inquire whether this circumstance may be ascribed partly to the misuse of mercurial preparations, and partly to another cause, which appears to be of extreme importance, but not to have been sufficiently considered. Longevity has been promoted, and the habits of the world have happily become more temperate; yet it cannot be denied that, amongst the rising generation in this and in some other European countries, bodily and mental vigour have declined as well as that energy and animation which accompany health, and are requisite for the enjoyment of life. Although great improvements have been made in Medicine, which, as a science is more interesting, and as an art is more important than any other, we ought not to undervalue the practice which has been found successful in other parts of the world, even in countries that are uncivilized; but, on the contrary, we should endeavour to acquire ample and accurate information upon the subject, in order that medical practitioners may judge whether such remedies might not in some cases be adopted or imitated with advantage, and, above all, we should ascertain whether efficient substitutes might not be found for them amongst the vegetable productions of this country. It is by these and similar researches, pursued with the zeal and perseverance which their importance so eminently deserves, and which I earnestly hope, and confidently expect, will be crowned with success, that the fame of this Society will be extended, its

utility will be duly appreciated, and its objects will be attained by promoting the benefit of mankind.

Dr. Hancock has, in several instances, known the Indians to make "sound cures of limbs which had been condemned to amputation by European Practitioners." It is not the skill and science which may be displayed in an operation, or the success which may attend it, that are either the most advantageous to the Patient, or the most honourable to the Practitioner; it is, on the contrary, that superior talent, when it is possible to exert it, which, by judicious treatment and by due attention to the constitutional disease, renders the operation unnecessary. The amputation of a limb cannot justly be considered as its cure, but as the lesser of two evils to which the Patient is exposed, and requisite in some cases to the preservation of his life, or, according to the expression of an ancient Physician, "*detractio amissio partis est, non sanatio ;*" and I need not observe that a Solvent for the Stone would be very far preferable to the dangerous and painful operation of Lithotomy. I am informed, upon authority deserving of credit, that an Ointment, made from the Leaves of the common Bean, gathered when the Plant is in flower, has been very successful in dispelling those cancerous humours which, if allowed to continue, might require excision; and we know that the operation does not always remove the disease, which in most cases returns, and ultimately proves mortal.

The important advantages which may be derived from popular remedies were fully appreciated by Dr. Osiander, who composed a most instructive work upon this subject, and has collected, with great industry, many interesting facts. He states, as the result of his own experience in a variety of cases, that remedies which appeared insignificant had, however, proved effectual, when the strongest medicines and the skill of eminent physicians had failed of success.

Such was also the opinion of Hoffmann, who, after a practice of many years, found that the remedies, which he describes as "*vernacula, parabiliora, et domestica omnibus nota,*" were far preferable, both in their power and in their utility, to chemical preparations, and accomplished a safer and more certain cure. Many medicines, which now are universally prized, were originally only popular remedies, some of which were discovered perhaps by accident, as was lately the use of Cotton in cases of burns, and some of them may have been derived from an attentive examination of the habits of animals, guided as they are by unerring instinct. It is stated by my learned friend, Dr. Sigmond, in his excellent Paper on the *Secale Cornutum*, which is considered by Mr. Mitchell, after long experience, to be a "safe and efficacious medicine," possessing "all the properties which a Practitioner could desire," that it was not tried in this country till 1824, although it was mentioned by Camerarius in 1688 as a common remedy in Germany. The constant employment of any popular remedy shows that it must, at least occasionally, have been successful, and that it is deserving of accurate and scientific trials, made with that caution which may have been neglected in popular practice. I am aware that empiricism on the one side, and credulity on the other, have given great vogue to some pretended nostrums and universal medicines, which seem to assume that all diseases have the same cause and are susceptible of the same cure; but these are not what are termed popular remedies, and the former are almost unknown where the latter are often employed. As an example of the medicinal effects produced by Vegetables which appear to be insignificant, we are told by Rust, that a young woman, who, till the twenty-second year of her age, had been afflicted with St. Vitus' Dance, and had derived no relief from medicine, was completely cured by living, during ten weeks, entirely on Spinage.

As an example that Vegetables may possess other medicinal qualities than those which are generally ascribed to them, I may mention that an Infusion of the common Tansy is used in Russia to cure the Jaundice, although Professor Geiger, whose name I cannot pronounce without the utmost reverence for his inestimable services, says that its medicinal qualities are "*nervina, anthelminthica, diuretica.*" A warm Infusion of Sloe Leaves, which are so often employed for the adulteration of Tea, has been administered in cases of Scrofula; a Decoction of dried Peach Leaves for the Stone; and Yew Leaves, reduced to powder, for Hydrophobia. These, like other popular remedies, demand our attention; and the veneration which all of us must feel for the authority of Linnæus ought to add weight, if it were possible, to his admonition: "*Discant itaque juvenes medici minime spernere, sed ea annotare accurate, quæ apud vulgum audiant medicamenta decantari.*"

One of the most important inquiries which can occupy the attention of this Society, and of the Medical Profession, is the most eligible mode of procuring, from any particular Plant, and of preserving from decay or decomposition its active and essential principles, whether Decoctions, warm or cold Infusions, or Extracts, are to be preferred, and whether Water or Alcohol is the proper solvent? This inquiry is the more interesting, as well as the more requisite, from the difference of opinion, and therefore of practice, which seems to prevail upon these points. It is said to be well known to Chemists, that the residuum of Infusions or Decoctions of Cinchona will yield nearly as much Quinine as the fresh powder, and if so, it would appear that a very small portion of that principle is obtained by those preparations, the utility of which is, however, acknowledged. It was the opinion of Bate, and it is also that of my learned friend, Dr. Hancock, that Nitrous Ether, which he considers to be one of the most

useful remedies, is superior to any other menstruum for facilitating the extraction of the active principles of Plants, which would afterwards be disengaged from it, when they are evaporated so as to form an Extract. He found also, "from a long course of practical experience," which, he says, was fully confirmed by the experiments of Poggiati, that Water has a "very weak action" on the active principles of Sarsaparilla, which is far more efficacious when dissolved in Wine or Spirits, and which is injured, and loses much volatile matter, by long coction. In every instance there arises the preliminary and most important question, what is the active principle of any particular Plant? Chemistry may indeed ascertain with accuracy the proportion which it contains of any known educt, but its efficacy, as compared with that of any other preparation of the Plant, can only be learned by medical experience, by repeated trials made under similar circumstances, and accurately observed. Its efficacy may not consist in any single principle, but in a combination of its chief components, and we are informed, by Dr. Hancock, that "a very small dose of the aggregate will often suffice when none of the remedies separately taken will produce any sensible effect." This is entirely conformable to the remark of Dr. Harrison, that the Fevers in Lincolnshire may be cured by a combination of Bitters, Astringents, Bistort and Calamus *aromaticus*, although no advantage was gained from their separate employment. The doctrine of Linnæus is undoubtedly correct "*ubi vires ibi virtus;*" but we could not safely predicate the contrary, and we ought not rashly to reject as useless and inert all those constituents which appear inactive. They may, in combination with others, possess sanative properties, and we know that many which exist in nature are so subtle as to elude Chemical analysis—a fact that may be exemplified in several instances.

In a Paper, which was communicated to us by Mr. Alsop,

on the preparation of Vegetable Infusions, by what he calls a "more uniform and effective mode," it is proposed to accomplish the object by percolation; but it may be questioned whether some substances do not require a long maceration, for the purpose of extracting their medicinal virtues. Coffee is often prepared in this manner for domestic use; and I found, by an experiment which I made, that the residuum, when boiled in water, was very nauseous; so that in this case it was obvious that all the aromatic principle had been obtained by percolation; but it cannot therefore be concluded that the same process would be successful with substances which do not possess that principle, or in which the sanative qualities are of a different description. It might be important to examine, both medicinally and chemically, the residuum of Coffee, in order to ascertain whether it is noxious, which I am inclined to believe, and whether the mode of its preparation, which in this country is too common, must not be prejudicial to health. He proposes also, as a "simple means for their preservation, so as to admit of their extemporaneous employment without waste," that the Infusion should be strained while hot into the bottle, which should be completely filled, allowing the cork to displace its own bulk of the liquid. If, however, a perfect exclusion of the air is requisite to prevent decomposition, the object would of course be frustrated as soon as some of the Infusion was used, and could not be attained for more than an uncertain, and perhaps a very short period. I have observed, by trials with several Infusions, that they are prevented from becoming mouldy, by adding to them a small quantity of Cloves. It is stated by Mr. Philips, in his Translation of the new Pharmacopœia of the Royal College, which unfortunately does not give any directions upon the subject, that Infusions are never to be kept for use longer than a few hours, but prepared for the occasion upon which they are prescribed;

and he remarks, that they are weaker when cold water is employed instead of hot water, unless the digestion be continued for a much longer time. The questions still remain, upon which I do not venture to form, and much less to offer, an opinion, whether a cold Infusion possesses more of the medicinal qualities, particularly of such as are volatile, than a Decoction, and also in what cases an Extract may be preferable, and in what manner it ought to be prepared, whether by spontaneous evaporation, or by heat; and if by the latter, in what degree, or for what duration, it ought to be applied. Extracts being more concentrated are, I need not say, more conveniently administered than those Infusions or Decoctions which, like alterative medicines, may be given in considerable quantities; but the latter have, however, the advantage, which appears to be very important, and which is not neglected in medical practice on the Continent, of enabling the dose to be regulated with greater accuracy, according to the constitution of the Patient, and to the effects which it produces. "The improvement of the Pharmaceutic Preparation of Vegetable Substances" is one of the primary and most important objects of this Society, which will, I hope and confidently expect, derive great benefit from the assistance of Mr. Squire, who is known to have devoted much attention to this subject, on which he has acquired very extensive information and experience.

A subject of extreme curiosity and also of medical importance, but which hitherto has not been sufficiently examined, has been brought under our notice by my learned friend, Dr. Sigmond, whose merits and services are eminently entitled to our respect and gratitude. The Paper to which I refer relates to Odours, many of which must be considered to possess a therapeutical agency, and such was the doctrine of some of the ancient Physicians, one of whom recommended them in Epilepsy, another in diseases of the stomach, and a third

enumerated those which ought to be received into the Materia Medica. In latter times Fragræus wrote a dissertation on the *Medicamenta Graveolentia*, and Wahlin published, in the *Amœnitates Academicæ* of Linnæus, a tract on the *Odores Medicamentorum*, which he divides into seven classes, to five of which he ascribes medicinal qualities. Thus the *Aromaticæ*, such as Cinnamon, excite the circulation; the *Fragrantes*, such as Saffron, stimulate the nerves; the *Ambrosiaceæ*, such as Musk, act on the heart; the *Aliaceæ*, such as Onion, promote perspiration; and the *Hercini*, such as the GERANIUM *Robertianum*, affect the bowels, the kidneys, or the uterine system. Odours being yielded spontaneously, are of course to be distinguished from those exhalations which are produced by the action of heat, but the latter are known to exert a powerful influence; and a very remarkable instance of their operation is mentioned by Dr. Sigmond, in his excellent Lectures on Materia Medica and Therapeutics. It is that, and I quote his own words, "of a couple of well-behaved married people, who had always lived upon the most affectionate terms, and with good conjugal feelings one for the other, almost a pattern of connubial happiness; but it was observed, that when this amiable couple had spent some time in a particular room in the house, they became engaged in a most violent quarrel, though everywhere else they were fond and well-behaved. The room was considered enchanted; but after some time the mystery was dissolved, by the discovery that these terrible disputes were owing to a quantity of Hyoscyamus placed near a stove, and as soon as it was removed perfect harmony was restored." He also informs us, that the effluvia of Hemlock and of Opium have caused Apoplexy, and that "Asthma has been produced by exposure to the aroma from Ipecacuanha during pulverization." These facts may, however, be more easily explained than that relating to the Hyoscyamus, which,

from its narcotic qualities, might have been expected to have an anodyne, not an irritating, effect. We are told, by Dr. Barton, that the smell of the MAGNOLIA *glauca* occasioned a paroxysm of Fever, and increased the severity of an attack of Gout. Dr. Sigmond relates, in one of his Lectures, the very powerful effects which were produced on Mr. Howison, during a voyage, by the smell of the Tobacco with which the vessel was loaded. The first symptom which he experienced was a feeling of suffocation followed by frightful dreams, and when he awoke he was aware of the occurrences which took place, but was "totally unable to speak or move," and "he felt as if the principle of life had departed from his frame," though he suffered no pain or uneasiness. He became, afterwards, quite insensible; but, having been roused by the rolling of the ship, contrived to go on deck, and was recovered by pouring a bucket of sea water on his head. His memory, which had been entirely lost for about a quarter of an hour, then returned, and "he acquired a most vivid recollection of a vast variety of ideas and events which appeared to have passed through his mind and occupied him during the time of his supposed insensibility." Odours may be supposed to operate, either by being inhaled into the lungs, and from this mode of action it is said in Germany that the effluvia of fir forests are beneficial in Pulmonary complaints, or by being absorbed through the pores of the skin; and thus it is, I presume, that those who inhabit houses constructed principally of the Cinchona Wood are secured from the intermittent fevers of Peru, or by a direct agency on the nerves. It was the opinion of Linnæus, that those medicinal substances which affect the smell more powerfully than the taste, operate upon the vascular system, and those in which the contrary is perceived, upon the nervous system; but it is, in many cases, difficult to compare, in different organs, the degrees of intensity in which they are severally

excited, nor does every individual possess those senses in equal power. Those Odours which act upon the nerves might, perhaps, be useful auxiliaries in some or all of those diseases included in the class of *Neuroses*, by Cullen, and of *Neurotica*, by Good; and it is known that a very painful malady of the nervous system, the *Tic douloureux*, has been cured by inhaling, through the nostrils, the Sulphate of Quinine. Some Odours seem to have been intended by Providence as Antidotes against pestilential exhalations, for we perceive that those arising from stagnant waters are corrected by the Mints which grow near them; and in the same manner a fumigation of Juniper Berries is considered to be very salutary in damp weather. Lord Bacon mentions, that "Groves of Bays cure a pestilential disposition in the air;" that the vapours of Rose Water, Vinegar, Violets, Vine Leaves, &c. are proper in ardent fevers, consumptions, and want of sleep; and that dry Bay Leaves, dry Rosemary, and Lignum Aloes, are a good fumigation in the morning. It would be extremely desirable and important to ascertain with respect to each Odour, what is its peculiar mode of operation, whether by being inhaled, or by being absorbed, or by acting on the nerves, and to determine with precision its effects. I do not here refer to those articles of the Materia Medica which, by their Odours, may be expected to have influences similar to those of the substances from which they emanate; nor do I refer to those which, like the common smelling salts, may be only pungent, and which may consequently have a mechanical, more than a medicinal, action. We all know that a very salutary and scientific employment has been made of the exhalations of medicinal Plants, by passing through them hot air or vapour, and that such baths have been found very serviceable in a variety of diseases. In some of them, the cure may have been promoted by the heat to which the Patient is exposed; but any effect which does

not and cannot arise from that cause, must be ascribed to those exhalations.

A wide field, which has not yet been adequately explored, is open to your researches, and in every step of your progress, you will be interested by the curiosity of the objects that surround you, and will be animated by the consideration, that your pursuits are not insignificant or unimportant in their nature, and do not resemble those laborious and unprofitable inquiries of which the difficulty seems to constitute the only merit; but that they are, on the contrary, of the utmost practical utility, and are directed to the benefit of Mankind. May you in your progress prosper as you deserve, and as I ardently desire; may you receive the approbation of all those who witness your laudable exertions; and may you attain that success which is confidently anticipated from them, and which is due to industry and talents, when they are usefully employed. The success, which I fervently hope will crown your patience and perseverance—the discovery in the Vegetable Kingdom of an efficacious remedy for any of those disorders which afflict humanity, and which, hitherto, have been found difficult of cure, or have baffled the art of Medicine, would be attended with such a reward as no Society could bestow. It would confer upon its author an imperishable fame, extending to all civilized countries, and exciting the gratitude of future generations, as well as of the present age. And last, but not least, amongst these considerations, the author of such a discovery would carry with him to the grave the consolatory reflection, that he had eminently fulfilled his duty, and discharged the solemn obligation imposed upon him by Providence, which has placed us in this world as the common Children of one Parent, for the benefit and assistance of each other.

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