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ADDRESS

DELIVERED BY

JOSEPH WALSH, M. D.

MEMBER OF THE

PHARMACEUTICAL ASSOCIATION, D. C.,

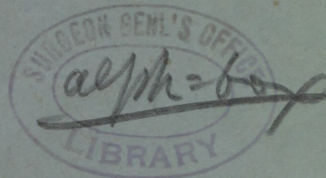
AND OF THE

NATIONAL PHARMACEUTICAL ASSOCIATION, U. S.

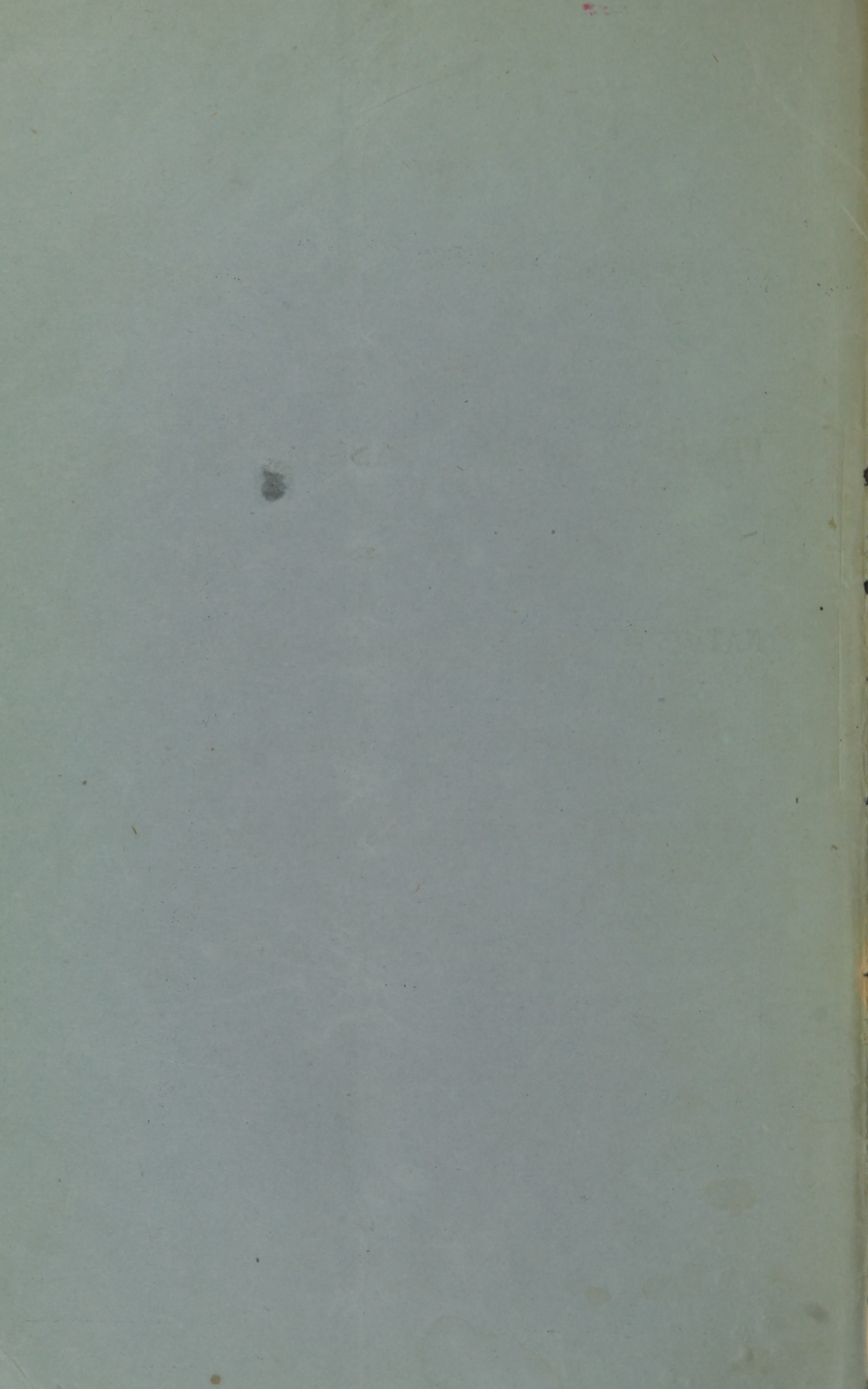
BEFORE A REGULAR MEETING OF THE

PHARMACEUTICAL ASSOCIATION, D. C.

ON THE FIRST JULY, 1857.



WASHINGTON:
HENRY POLKINHORN, PRINTER.
1858.



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GENTLEMEN :

Medicines are substances which have the power of so modifying the actual state of the organs—the Solids and Fluids—as to render them applicable to the cure of disease. They differ from *Remedies*, which are of a more generic nature, and which include all the various means—Moral as well as Physical—employed to alleviate or cure disease: thus, Heat and Cold, Electricity, Surgical Operations, the influence of the emotions, the various passions of the human mind—Anger, Hatred, Pride, Vanity, Benevolence and Love, are all *Remedies*, but cannot properly be called *Medicines*.

“*Materia Medica*” is the science which treats of Mineral Substances—*Mineral* or *Vegetable*—and it may be sub-divided into three parts.

1st. *Therapeutics*—the application of remedies to the treatment of disease. 2nd. *Toxicology*—the consideration of their poisonous effects; and 3rd. *Pharmacy*—or the art of compounding, preparing, and dispensing Medicines for use.

This last, gentlemen, is the subject of the present Lecture, and the object, aim, and ambition of our Association.

The commercial history, botanical and chemical properties, the manufacture and preparation of medicines, are so well described in our Dispensatories and Pharmacopœias, that it would be superfluous, on this occasion, to enter on that subject. I will, therefore, proceed at once to the consideration of the more important and practical part of Pharmacy—namely, *the art of preparing and dispensing Medicines*.

The extemporaneous admixture and preparation of medicines from the prescriptions of medical men, and the supply and administration of remedial agents to the public, constitute the primary object and most ostensible duties of the Pharmaceutist. All other operations are performed in anticipation of those connected with the Dispensing of Medicines.

The duties of the dispenser are of a very important nature, and for their discharge a certain combination of qualities is required in the individual who undertakes them. With some degree of physical strength and agility, he should combine a quick perception, sound judgment and firmness of resolution. He should maintain a constant and lively attention to every operation (however trifling) with which he may be occupied, and evince, both by night and by day, a readiness to fulfil his duty in serving others, even at the sacrifice of his own pleasure and convenience. And above all, he who prepares the dose for the sickly and often fastidious pa-

tient, should be especially careful that he add no extraneous repulsiveness to that which of necessity belongs to the prescribed remedy.

The most responsible and delicate part of the Dispenser's art is the reading, understanding, and preparation of the Physician's Prescriptions. When a prescription is presented for preparation, the first thing to be done is to *read* and *understand* it. This is sometimes the most difficult part of the Dispenser's duty, requiring the exercise of serious attention, quick perception, sound judgment, and prompt decision. The writing in prescriptions is often very bad and the words are mostly abbreviated. Moreover, the language in which prescriptions are written is, in many cases, very imperfectly known to both writer and reader. There are, it is true, but a limited number of formal expressions which are commonly used for conveying the requisite instructions, and a knowledge of these is easily acquired; but the Pharmaceutist will not be qualified for his duties as a dispenser, if he possess only a knowledge by rote of the expressions most frequently used in prescriptions. The prescription is intended as a *medium of communication* between the prescriber and dispenser, and an acquaintance with the language in which it is written is quite as requisite to the latter as to the former.

The Dispenser has a two-fold difficulty to contend with: he must first decipher and then translate the writing of the prescription. Moreover, he must not only do this correctly, but *promptly*. If he stand poring over the prescription for a long time, it may induce a supposition on the part of the customer, that either *he is ignorant* or the *Physician careless*. Nothing should be done that could possibly tend to weaken the confidence of the patient in Prescriber or Dispenser.

The Prescription should be first looked over with a view of determining certain leading points, the knowledge of which will greatly facilitate the comprehension of minute details. The questions relating to this point will present themselves somewhat in the following order: Is the Medicine intended for *internal* or *external* use? Is it to be in the form of pill, powder, mixture, ointment, or what other form? What is the quantity ordered, and what the dose?

These points being determined, (for which a single glance of an experienced eye will suffice,) a more careful examination of every word and symbol must follow, with the view of fixing definitely on the mind what are the several ingredients ordered and the directions with reference to them. Should a doubt arise in deciphering the names of any of the ingredients, the knowledge of the purpose, form, and method of administering the medicine, will aid in the decision of such points by affording

suggestions as to what would be suitable and what inappropriate. It is much better to meet any difficulty that might arise with the previous knowledge of every attainable fact that could assist the judgment, rather than to seek these aids after an erroneous idea had been impressed upon the mind. In deciphering the writing it will often be found advantageous to compare the characters in a doubtful word with those most nearly resembling them in some part of the prescription which is intelligible. Should the difficulty still remain, the opinion of a second party, when available, should be sought, and in doing this let not false pride prevent the enquiry being made from others who are capable of judging. Such enquiries, however, should not be made in presence of the customer. Sometimes a word may occur in a prescription which is quite legible, but the meaning of which is not understood; in which case reference should be made to a Dictionary or other book in which the terms used in prescriptions are explained; and in this case again, it should be done without exciting the suspicion of the customer that any doubt exists as to the meaning of the prescription.

If, after adopting all these means, it be still found impossible to read or to comprehend the instructions contained in the prescription, it will be the duty of the Dispenser to ascertain who the Prescriber is and to apply to him for explanation.

But difficulties such as these are of rare occurrence.

There is, generally, no difficulty that an experienced Dispenser does not easily overcome in reading and understanding prescriptions.

If the Medicine is waited for, as little delay as possible should occur before its preparation is commenced. A good and accomplished Dispenser will make it his study to inspire a belief that he quickly comprehends and promptly executes the orders which are entrusted to him.

The wretched character in which a large number of prescriptions are often couched, add greatly to the other perplexities of the Dispenser.

Long practice, however, which gives familiarity with a great variety of hand-writings, will enable one to overcome, in a great degree, the ill effects of the careless chirography of medical men.

It is essential to keep a book for the record of all prescriptions, as well as another in which extraordinary prescriptions may be noted, with their contents and the manipulations they may require. The destruction of files or obliteration of prescriptions thereon, would be a serious loss which the former only can repair, and the latter will in time prove a store of valuable information fraught with usefulness in difficult cases.

The use of Latin terms for the directions of prescriptions has almost

fallen into disuse in this country—and a knowledge of the Latin language is not made an indispensable requisite of Pharmaceutical education. Prescriptions are, however, occasionally presented clothed in a classic garb, and to meet this difficulty the Pharmaceutical student must have recourse to some table of contracted medical phrases.

Though it is not expected that the Apothecary should understand the Therapeutical action and effects, the Hygienic and Toxicological properties of Medicine, yet an acquaintance with their virtues and medical uses might well be expected from the Pharmaceutical student, whose ambition is to become an accomplished and useful member of his profession.

The form in which Medicines are used may now be considered.

Medicines are used in the *Solid* or *Fluid* state, and these may be subdivided as follows :

| | | |
|---------|---|---|
| SOLIDS. | { | Pills, Powders, Confections, Thoches, Electuaries, Extracts. |
| FLUIDS. | { | Decoctions, Infusions, Solutions, Medicated Waters, Tinctures, Wines, Spirits, Ethers, Oils, Syrups, Vinegars, Oxymels & Honeys. |

Of these I will select three—Mixtures, Powders and Pills: These, as to the mode of their preparation, will speak for the rest, and will present to the Student of Pharmacy the prudent admonition and emphatic caution, "*Ex uno, vel, ex tribus, discite omnes.*"

MISTURÆ.—The term *Mixture* is generally applied to a liquid Medicine, not intended for a *local* application, which is administered by the mouth in an undiluted state, and of which the bottle in which it is dispensed contains more than *one dose*. It is a very common form for the administration of Medicine.

Mixtures intended for adults usually measure 4, 6 or 8 ounces. Sometimes, however, they extend to a pint, or even a quart. When intended for children, the quantity is generally from one to two drachms.

The ingredients which usually enter into the composition of *Mixtures* are salts and other solid bodies which are soluble in, or easily mixed with, aqueous *menstrua*, together with *Tinctures*, *Spirits*, *Syrups*, *Infusions*, *Decoction*, and *Distilled Waters*.

In preparing a *Mixture*, the Dispenser has to consider how he can best effect the solution of solid substances which are soluble—the equal diffusion of those which are *insoluble*, throughout the *Menstruum*, and the intimate admixture of all the ingredients of whatever kind, so that every dose, when taken, shall be of similar composition.

It is not necessary, nor is it always desirable or even *practicable*, to mix the ingredients in the order in which they are named in the prescription. The Dispenser is expected to exercise his judgment in determining the best method of effecting the combination.

PULVERES.—The ingredients of powders are mixed in a mortar or on a smooth piece of paper. As a general rule, a mortar should be used, except when the prescription is for one dose, or when the quantity used is so small that it is necessary to avoid losing the portion that would adhere to the mortar and pestle. It is important in all cases, that the admixture of the ingredients should be effected as completely as possible, and more especially when, as is often the case, the ingredients are of very unequal degrees of activity.

The order in which Powders are to be mixed is the reverse of that which is adopted in introducing the ingredients of a *Mixture* into the bottle. Instead of beginning with the least bulky ingredient, the most bulky, or I should rather say, the most inactive ingredient, should be put in first, and the more active on to the top of this. The object in this is, to avoid as much as possible, the loss of any part of the active ingredients by their combination being taken up in the pores of the mortar. The combination is effected by trituration, which should be continued long enough to insure the perfect distribution of the ingredients—due regard being paid to their *activity*, *bulk*, *specific gravity*, &c.

Substances of various texture and density are associated in prescriptions: Such as crystals, gum resins, leaves, and roots; and as it is a common custom to pulverize many of the substances after they are weighed, the Dispenser has to exercise care and judgment as to the order of their introduction into the mortar. When Camphor is to enter Powders, it should be first thoroughly broken up by the addition of *Spirits of Wine*; then, if any other substances require trituration, the Camphor is removed from the mortar, and these are reduced to powder. The Camphor is then

returned, and by a gentle rotary movement of the pestle, the associated powder is mixed with it, without much pressure at first, so as to avoid conglomerating the camphorous particles before they are covered with the other powders.

PILULÆ.—There is, probably, no form of Medicine more frequently prescribed than that of the *Pill*. It is a form well adapted for the administration of many medicines, including those of a fetid or nauseous character—those whose specific gravities render them difficult of administration when mixed with liquids—those which are designed to act slowly, such as *alteratives*, and those whose action is designed to be retarded until the medicine shall reach the lower intestines. Among the substances which enter into the composition of pills, are the vegetable and other extracts, the Resins, Gum Resins, Balsams, Essential Oils, &c. Those are more frequently administered in the form of Pill than in any other form, and with them are combined many powders and mineral preparations.

The object in forming a pill-mass is to obtain a consistent, firm and adhesive paste, which shall be sufficiently plastic to admit of being moulded without adhering to the mould, and sufficiently stiff to prevent the pills from losing their shape when made into the proper form. A pill mass may be said to consist of two essential parts—the active ingredients which enter into its composition, and the excipient, by which the proper degree of consistence and tenacity are given to the former.

The substances employed as excipients in pill making, are numerous and of very different natures. The most common are, Syrup, Mucilage, Soap, Water, Spirit or Tincture, Gum, Sugar, Magnesia, Starch, &c., &c.

The principal art in pill making consists in selecting the proper substances as excipients to suit the peculiar nature of the other ingredients of the pills.

Those substances only should be used as excipients which, fulfilling the specific requirements in other respects, will not be incompatible with any of the ingredients of the pills: will modify their action as little as possible—either by causing them to become hard, or in any other way—and which will not unnecessarily or inconveniently increase their size.

The Physician frequently names in the prescription some particular excipient which is directed to be used. Whenever this is done the instructions of the prescriber should be carried out if practicable; otherwise, the Dispenser must follow his own judgment. It would be much better that the selection of excipients in these cases should be always left to those who dispense the Medicines, as the prescriber rarely possesses the practi-

cal knowledge requisite to enable him to determine what kind of excipient is required. We frequently find two or three soft extracts which, when combined, are too soft to admit of being properly made into pills, ordered to be mixed with Mucilage or Syrup "*quantum sufficit.*" In this case, although the Dispenser cannot act up to the letter, yet he may carry out the spirit of the instructions by using Gum or Sugar.

It is not my purpose, nor is it necessary on this occasion, to enter into the history of Pharmacy. Suffice it to say that it is coëval with the "Healing Art," the history of Pharmacy being the history of Medicine: one being the hand-maid of the other.

Whether the art of prescribing and dispensing Medicines was united in one and the same person among the Ancients, is a subject of doubtful enquiry. Thus we find a prescription for Scabies of a Greek physician, Serapion, quoted by Celsus, "Nitre 6 drachms, Sulphur 4 drachms, incorporated with plenty of resin," and a Collyrium of Euelpides, which he called the "Spharion," Blood-stone, Washed, 2 drachms, Pepper, 5 grains, Cadmia, washed—Myrrh, Poppy tears, each 3 drachms, Saffron, pure, 4 drachms, Gum, pure, 3 grains, which are to be rubbed down with Aminæen Wine.

These, with several others which might be enumerated, furnish an interesting subject of inquiry as to the extent of the Physician's practice, measured by the time required for preparing and dispensing his prescriptions, on the supposition that he was his own Apothecary laden with his saddle-bags in the style of our modern country practitioners. We find in the fourth book of Homer's Iliad, that when Menelaus was wounded by the arrow of Pandarus, Machaon, one of the Surgeons of the Grecian Host, on being summoned to the presence of the chieftain, "Where to the steely point," as described by the Poet,

"Where to the steely point the reed was joined,
The shaft he drew, but left the head behind,
Straight the broad belt, with gay embroidery graced,
He loosed! the corset from his breast unbraced,
Then sucked the blood, and *Sovereign Balm* infused,
Which *Chiron* gave, and *Æsculapius* used."

The surgical treatment of not extracting the head of the arrow, lest a *Hemorrhage* may ensue, would, I apprehend, be approved by Surgeons of the present day. "*Sucking the wound*" is not incompatible with more recent discoveries in Toxicology, (the arrows of the Ancients, as at present among the South American Indians and the Asiatic, being generally impregnated with some Animal or Vegetable poison,) from the well known fact that in the absence of *abrasion* the mucous surfaces of the lips and mouth are a sufficient protection from the contact of the most active poi-

sons, even the bite of a rattle-snake or a rabid dog. But "the sovereign balm" which he infused, belonged then, as now, to the art of Pharmacy. This, we are informed, he learned from Æsculapius and Chiron. And if the former be claimed as the "*Father of Medicine*," we claim the latter as the *Father of Pharmacy*.

If we turn to the *Hebrews*, we find that whenever the Physician is mentioned with honor, so also is the Apothecary. Thus, in *Ecclesiasticus*, "*Honor a Physician with the honor due unto him, for the uses which ye may have of him, for the Lord hath created him. The skill of the Physician shall lift up his head, and in the sight of great men he shall be in admiration. The Lord hath created Medicines out of the earth, and he that is wise will not abhor them.*" "*Was not the water made sweet with wood, that the virtues thereof might be known.*"

"*Of such doth the APOTHECARY make a confection, AND OF HIS WORKS THERE IS NO END—and from HIM IS PEACE OVER ALL THE EARTH.*"

Again—"The remembrance of Josiah is like the composition of the perfume that is made by the art of the APOTHECARY; it is sweet as honey in all mouths. and as music at a banquet of nine."

And again, in *Ecclesiastes*: "Dead flies cause the ointment of the Apothecary to send forth a stinking savor—so doth a little folly him that is in reputation for wisdom and honor."

And in the "Song of Solomon:" "*Because of the savor of thy good ointment, thy name is as ointment poured forth, therefore do the Virgins love thee.*"

Among the Ancients, we are principally indebted to the Greeks for the cultivation of Pharmacy. Indeed, our modern Medical Technicality is almost altogether borrowed from the Greek Physicians, and the very name, "*Pharmacy*," from *Pharmakon*, denotes its origin.

So also, *Pharmakopolæ*, or the "Vender of Medicines," and *Apotheca*, or the repository or shop, from which our English word, *Apothecary*. The names of *Hippocrates*, justly styled "the Father of Medicine"—of *Diocles*, of *Hierophilus*, *Chrysippus* of *Erasistratus*, and of *Asclepiades*, are familiar to the medical world; and there can be no doubt that they understood and probably practiced the art of Pharmacy.

It may be here observed, *en passant*, that the character bearing the appearance of the letter R, placed at the head of every Medical formula, and which is rendered as the Latin word "*Recipe*," is a relic of ancient Greek superstition. The symbol in question is the old astrological sign of Jupiter, ♃, and it was anciently placed at the head of the prescriptions to invoke the aid of the god of thunder in its operation.

The Romans received their knowledge of the "healing art," as well as all their other arts and sciences, from the Greeks.

Their most celebrated Physicians, such as Celsus, Galen, &c., display in their writings a practical acquaintance with Pharmacy. There can be scarcely a doubt that Pharmacy was a distinct profession, at least in their great cities, from the fact that among the late discoveries in excavating the ruins of Pompeii and Herculaneum, Apothecaries' shops have been found in nearly every respect similar to ours, with counter, mortar and pestle, scales, weights, &c.; medicines labelled, pill boxes and pills, &c., &c., &c.

As before observed, the History of Medicine is also that of Pharmacy, and while the various schools were rejecting old theories and propounding new ones—while the Hippocratic School was succeeded by Paracelsus, and he again by Van Hellmont—while in England, France, and Germany, theory succeeded theory, like "wave succeeding wave," the "Humoral and Solidist"—the "*Hallerian*" and "*Brunonian*"—the "*Broussais*" and "*Mesmeric*," down to the present day of the "*Allopathic*," "*Homœopathic*," "*Hydropathic*," and "*Expectant*," theories or systems; yet, during all these cycles and epicycles of conflicting opinions; during this never-ending, still beginning interminable warfare of *system* opposed to *system*, and *Theory* to *Theory*, and *Practice* very often opposed to all—PHARMACY continued on her *silent, steady* course, accompanying *Commerce* over the trackless ocean, to search for plants possessed of healing virtues—side by side with the *traveller* over the wild, unbroken deserts, the rugged mountain or the peaceful valley—over the vast primeval prairie, or by the shady bank of lake or river—through summer's heat and winter's snows, with a firm step and watchful eye, *Pharmacy* has examined the medical properties of every tree and plant, and fruit and flower that has come under her observation, from the ice-bound cliffs of the North to the frigid pole of the South—from the rising to the setting sun—and prepares and dispenses and presents them as her *love-offering* at the couch of sick and suffering *humanity*: and all the discoveries in modern chemistry, in so far as they relate to medicine, are gladly and speedily appropriated, and carefully preserved and prepared for administration by the *Genius* of Pharmacy, in her *high and holy mission*.

Some of the most eminent Physicians of the last and present century commenced their profession as Apothecaries.

The names of *Cullen*, *Broussais*, *Haller*, *Boerhave*, the *Hunters*, *Rush*, and others, while exciting a thrill of proud emotion in the breast of the Physician, yet reflect honor on Pharmacy, the fond and fostering mother

“that first cradled their fame.” And Pharmacy herself can proudly point to her children, who, either as *Chemists, Philosophers, or Apothecaries*, have wreathed on her brow a crown of *living light*, still shining undimmed by other suns.

Priestly, Scheele, Sir Humphrey Davy, Lavoisier, Balard, Courtois, Cavendish, Dalton, Donovan, Pereira, Kane, and a host of others.

I have already alluded to the *education, skill, moral and physical* character, and other qualifications required in the person of him who prepares and dispenses medicines. If the Astronomer who observes the starry heavens and sweeps through the boundless fields of illuminated space, through the silent watches of long, sleepless nights, must not only have an *eagle eye* and *steady hand*, but have *prepared* himself for this practice by years of previous study in the highest and most intricate branches of Mathematics, lest some *errors, some oversight* in his calculations, might prove fatal to the Mariner on the deep, who trusted his ship and cargo and life to the accuracy of the Nautical Almanac and Ephemeris—how much less qualified in his profession should he be who, at various times, by day and by night, *weighs* those *powders*, which approach to within *one-twelfth of a grain* of DEATH, and *measures* those *acids*, on a single drop of which may be suspended *Life or Death!*

Were we to enumerate all the other arts and occupations of life, we would find that society requires not only that every man should *attend* to his own business, but should also *understand* it. Without these prerequisites, *success* in any calling is impossible. But where the profession involves the *life* of others, the responsibility of the individual rises in proportion—and the public have a right to demand a guarantee for its confidence in those who are intrusted with the delicate and important duty of compounding, preparing and, dispensing medicines.

In most countries of Europe, the Student of Pharmacy is required to pass a preliminary examination in the ordinary branches of elementary education. Some knowledge of Latin and Greek being also required, he must serve *seven years apprenticeship*, and must pass a successful examination on Pharmacy and Chemistry before he receives his “*License*.”

In this country, on the contrary, the only “*License*” required is a *legal*, not a *scientific* one; a “*License*” from the *Municipal* authority—not from a *College of Pharmacy*. So that so far as the *Law* is concerned, (from a modest objection, perhaps, to trespass on the Domain of Science,) it makes no distinction between the dispenser of *Strychnine* and *Prussic Acid* and the vender of *Tapes* and *Ribbons*; between the dispenser of *Morphia* and *Brucine* and the vender of *Oorn-meal* and *Molasses*.

In such a condition of things what could Pharmacy do but call upon her members to advise, consult, and commune together, as to the best mode of *preserving* and *elevating* the profession; of protecting their own interests and honor—and of ensuring the security, safety, and confidence of society.

With this view has the Pharmaceutical Association of the District been organized. Its object is to preserve Pharmacy in this District from the unhallowed touch of the unworthy or incompetent.

To require the Dispenser of Medicines to possess a *full* and *perfect knowledge* of his art; to be, in every respect, worthy of his profession—and, at the same time, to *exclude* the *ignorant*, the *immoral*, and the *incompetent*.

Another result of such an Association will be, to bring its members together at stated times, that by a community of interest, interchange of ideas, and common experience, they may *assist*, *instruct*, *comfort*, and *protect* each other—that in such pleasant “*re-unions*” of members of the same profession, they may learn to *know* and *respect* each other as friends, and realize that saying of the wise man, “*Happy is he who hath found a faithful friend, for a faithful friend is the medicine of life.*”

It only remains, gentlemen, that I should return you my thanks for the honor you have conferred in selecting me to deliver the inaugural address before this Association. This could have been so much better and more ably done by many others I see around me, that I fear what your kind partiality assigned to me has been but feebly and imperfectly performed. Yet I trust it may be an incentive to every member of our Association to deliver, occasionally, an Address on some subject pertinent to our profession.

Allow me to conclude, gentlemen, by presenting my best wishes for the prosperity and success of the Association, with a firm conviction that it will ever continue a benefit to society and an ornament to the profession.

