

"Congratulations are due the American Chemical Society for the high type of men appointed on the committee for this proposed institute. Dr. John Abel, of New York, has made many valuable contributions to pharmacology and is an earnest scholar. Dr. Raymond Bacon, of Pittsburgh, enjoys considerable popularity, largely because of his influential executive affiliation at the Mellon Institute. The chief of the scientific staff of Eli Lilly & Co., Dr. Eldred, represents a pioneer drug firm of the Middle West. The selection of Dr. Charles Herty, of New York, the editor of our industrial journal, as chairman, is logical. Dr. Reid Hunt, Boston, formerly director of the Hygienic Laboratory, U. S. Public Health Service, possesses both a thorough knowledge of chemo-therapeutics and a most excellently balanced mind. Professor Treat Johnson, New Haven, Conn., has created an enviable reputation in organic research. Dr. F. A. Levene, Rockefeller Institute, New York, is well known in the fields of physiologic-chemistry, not only as a result of his own investigations, but also those of his able collaborators. The eighth member, Mr. F. O. Taylor, Detroit, has published articles on pharmacy, and is connected with the house of Parke, Davis & Co. The personnel argues well for the success of the propaganda, and any criticism which might be offered is that there is a lack of well-known and recognized pharmaceutical chemists. The statements in favor of the Institute have been well brought out in the *Journal of Industrial and Engineering Chemistry*, and none should doubt the ultimate value to America of research stimulation. The wisdom, foresight, and courage which the committee possesses may be the means of finding a happy solution for the erection of a monumental research institute. Such are the hopes of American men of science."

PHARMACY, EDUCATION, AND SECTIONS IN PHARMACY.*

BY JOHN URI LLOYD, PHAR. M.

The Pharmacist.—According to the general definition of the word, a pharmacist is a maker or compounder of substances that are intended to be used as medicines. He may either delve deeply into the sciences that contribute to his art, or he may practically neglect them and still claim to be a pharmacist. He may either spend his spare time (for many pharmacists have leisure hours) in study or experimentation, or he may squander it in numerous directions that profit neither the mind nor the purse. In this article the term pharmacist is to be divorced from the lower of these connections and applied only to those persons who, as students, view their calling in the light of an exacting study, whether it be in immethodical experimentation or in systematic science research.

Natural Laws Dominate Pharmacy.—In this sense the conditions that control the physicist in his investigations concerning the various states of matter, become of vital importance to the thoughtful pharmacist as well. The investigations that have been made, and the studies yet to be made with liquids, solids, and gases, are a part of his heritage. The laws evolved by the study of chemistry, optics, physics, and especially physical chemistry, affiliate with the researches made and yet to be made in pharmacy fields.

It should not be forgotten, therefore, that in compounding pharmaceutical preparations, the laws that govern scientists generally must be considered, and that recondite phenomena in the broadest sense may be recognized if the operators

* At the request of Dr. Charles Rice, in the latter part of the last century (1894), I wrote the first volume of a treatise entitled "A Study in Pharmacy." This work, comprising two hundred and twelve pages, was put into type and presented in fascicles, privately, to a limited circle of friends likely to be interested in the problems embraced therein. Otherwise, publication was not ventured. May I not hope that after its twenty-five years of slumber, this fragment, seemingly yet pertinent, may not prove a cumberer to pharmaceutical literature? J. U. L.

so incline. The too often accepted opinion that a man of inferior mental abilities, who cannot become a scientist in a special section, may yet be a qualified pharmacist, is refuted by the fact that pharmacy proper demands of its thoughtful and conscientious followers an extended knowledge of the general phenomena of science, and that the energy dissipated by many pharmacists on general subjects, if applied in a restricted field, would have made them conspicuous scientific men.

Popular Definition of the Term Pharmacist.—Formerly pharmacists were compelled by circumstances to make their own boluses, electuaries, confections, and other similar crude preparations, that comprised the major portion of the medicaments of the past. This fact established the early definition of the word Pharmacist, which, regardless of our special qualifications in modern science fields, still makes us in popular usage simply mixers of medicine, which inadequate definition passes currently, unchallenged, from dictionary to cyclopedia, as shown by the following recent citations:

PHARMACY.—“The art or practice of preparing, preserving and compounding medicines, and of dispensing them according to the Formulae or Prescriptions of Medical Practitioners.”—*Century*.

PHARMACY.—“The art or practice of preparing, preserving and compounding substances for the purposes of medicine; the occupation of an apothecary.”—*Webster*.

PHARMACY.—“The art of preparing and preserving and compounding substances to be used as medicines; the occupation of a druggist.”—*Stormonth*.

In support of my opinion, such antiquated definitions as precede may be criticized as being true in substance but faulty in details. Those of our guild who appreciate the scope of our present labors and the depth to which our investigations may now often be carried, owe a duty to their comrades and themselves in the sense that a more comprehensive and broader definition of the term should be submitted to the revisers of these works. There are, now, branches in pharmacy; there has been an advancement in our art; and, regardless of the root or past meaning of the word, the foregoing expressions do not now correctly define our position.

“*In Your Journey Look Not Backward.*”—That the compilers of modern dictionary definitions have not heeded the advice of the poet quoted in the preceding sentence is evident to persons who take the trouble to compare the definitions of pharmacy of the past with those of the present. Phraseology has been altered somewhat from time to time, perhaps to escape copyright infringements, but I fail to see any attempt at modernization. One hundred years ago the pharmacist occupied a very different position from that of the present, but not according to the dictionary, as is shown by the following excerpts, which are practically identical with definitions most recent and already cited:

PHARMACY.—“The art or practice of preparing medicines.”—*Reed, 1845*.

PHARMACY.—“The art or practice of preparing medicines, the trade of an apothecary.”—*Johnson, London, 1824*.

PHARMACY.—“That part of physic which teaches the choice and preparation of medicines, the apothecaries’ art.”—*Baileý, 1763*.

If such men as Dr. Charles Rice, C. Lewis Diehl, and Dr. Frederick Hoffmann were to be consulted by the revisers of our dictionaries, more comprehensive definitions of the general term Pharmacist would result. Probably the ancient generalization would be allowed to stand, but distinctions would be drawn be-

tween—the “Pharmacist” who dispenses; the “Druggist” (pharmacist) who sells in quantities and also prepares medicines but does not dispense; the “Manufacturing Pharmacist” who neither retails nor dispenses, but who prepares medicines for dispensers and for physicians’ use, and the “Theoretical Pharmacist” who studies phenomena connected with our art (and which is chiefly embraced in manipulation) who instructs students, but who perhaps neither dispenses nor prepares medicines—for we have these well recognized subdivisions now, as a part of our fraternity.

Listen.—Largely through the labors of pharmacists the science of chemistry arose. Linked closely with chemistry is the science of botany and the study of microscopy, and all along the chain we find engraved conspicuously the names of prominent pharmacists. The toilers in all branches of applied science have ever included a large proportion of pharmacists, and this is the condition still. The drudgery of empiricism, in the early day that was the immediate forerunner of the classified and connected sciences, was performed largely in the apothecary shop. And the impulse to discoveries that enrich the circle of the sciences has been often furnished by the humble manipulator of the mortar and pestle, who perhaps in many instances has never received that just credit which would, if applied as merited, raise him from obscurity to fame. Many of the conspicuous scientific discoverers of the world have drawn their inspirations from the apothecary, whom all feel free to consult, who advises, suggests, assists, and then when humanity receives the return, is too often neither mentioned nor recognized.

These facts are self-evident, and recognized by all students, and it is pleasant to observe that most true scientists cover with charity the errors and revere the memory of those who, amid unpleasant surroundings, toil and struggle as pioneers, and who, in the laborious field of empiricism, collect the facts that serve as a ground work for the exact science that follows: There are, however, much to their discredit, persons indebted to empiricism for their scientific conspicuity, who sneer at those who adhere to experimental investigation, as there are children who hold in contempt the methods of their parents, whose toil, privations, and sufferings gave a heritage of luxury to their favored and too often snobbish offspring.

The True Pharmacist.—While it is true that too many of our members are content to rest quiescent and unprogressive in the lower plane of our calling, (and so far as most such medicaments as have been mentioned are concerned, the purely traditional, as well as mechanical), or even have retrograded and are looking altogether to superficial, material, and financial results as the only object of the art, it is also true that others, in performing legitimate work, constantly enjoy the pleasures of study and of experimental investigation that reach far into science fields, and which furnish to the sympathetic manipulator many enticing and alluring attractions. To the latter, who is necessarily a student worker, whether empirical or scientific, the days are all too short. The night that interrupts his study jars harshly upon such an enthusiastic searcher. He sees in every appreciable molecular change, not alone the final result (a money representative), in the form of a materialistic tincture of lifeless extract or proximate principle, but an experience enjoyable not only because it is valuable to humanity and the profession by reason of an evolved product that follows the end reaction, but as affording enjoyment to the investigator because of a healthful stimulus which the mind appreciates from

the consideration of the recurring phenomena, many phases of which are beautiful to contemplate. To him (the thoughtful apothecary) a finished product is not a merchantable commodity alone, but a something instinct with its own peculiar property and forces, which give to it a historic individuality. The path leading up to the final result becomes often to the manipulator the more important, for it has marked a course of pleasurable and recreative study and observation.

If any reader of this paper does not experience in his experimental work the keen satisfaction that comes to one who realizes that his own intellectual powers are vibrating in harmony with the Infinite Mind, and that the materials changing as dissolving views before his eyes are not inanimate, but upon the contrary are living and moving substances, teeming with enigmatical suggestions of possibilities in science fields—such a person will doubtless be content with the fallacious belief that the art of pharmacy possesses no attraction outside of business rivalries, and no incentive beyond the dollar. To him, absorbed only in the trade and traffic side of his art, the usual dictionary definition of the term "Pharmacist" will be entirely satisfactory.

I am convinced, however, that many are not content with such an imperfect and thoughtless estimate of the ideals of our membership. The under-current of pharmacy, whether considered as a science in itself or as an art, demands more appreciative attention than has as a rule been given to it heretofore, even by some authors after whom we read.

As the study of energy in modern science has at last dominated that of matter, so in pharmacy, material products may yet become subservient to a study of the forces that produce them. In the study of such phenomena comes a gratification to one's self, a credit to pharmacy, and a service to humanity.

VISION.

We only do the things that we see done at the start.

There is a great deal of difference between a dreamer and a man who sees visions. The dreamer awakes to the fact that he was asleep all the time, and the dream is soon forgotten; but the man who sees visions sees while awake, the workings of his mind and heart constantly building, formulating—bringing the thing to pass.

The man with vision is the man of understanding. He knows how to correlate experience with accomplishment. He can readily designate the real from the unreal.

No man or woman ever achieved anything who did not have vision.

There is a kind of silent mastery about the mind that can see visions. Visions are usually born in darkness, however. They are great lights that a man's brain sees, like some great star at night-time, that fascinates the eye above the billions of other, smaller stars. Vision is an attribute of character. Little men never have it.

You need no eyes to have vision—for the power of mindsight seems to melt into something very wonderful when it is ready for vision.

But vision isn't mysterious. It's very simple. It's the big in you that you know you can be. And it's the great outside of you that you know is able to come to pass.—George Matthew Adams.
