

the prisoner. Anything that might be an ingredient of, or converted into an explosive, is, in prison language, very "hot" and must be kept under lock and key at all times when not being handled by an officer. These include the very commonest of drugs, such as glycerin, nitric acid, sulphur, charcoal, potassium permanganate, potassium nitrate, potassium chlorate and many other items. No jeweler ever guarded his diamonds any more carefully than we do such drugs.

In conclusion, I would suggest that when you have the opportunity that you visit a Federal Penitentiary, for, after all, they are your prisons and we only work there.

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## THE EDUCATION OF A PHARMACIST.\*

(BUILDING FOR THE FUTURE.)

BY ERNST T. STUHR.<sup>1</sup>

To discuss the subject of education after the recent experiences of business in this rather disjointed world, is indeed a trying task. It might have been easier or more appropriate to consider what education is *Not!* Then, too—as some one has said, "The optimist sees the doughnut, the pessimist the hole." Realizing that my audience, the educator, the administrator, the practicing pharmacist and the pharmacist in the making, is possessed with a mutual interest, I shall attempt to discuss the educational progress with vital factors (not often alluded to by the average individual) contributing toward the development of a well-informed pharmacist, and the position he is destined to take in the health program and welfare of his community.

Let us consider the prospective student. Registration of an incoming class is always of interest to the faculty of an institution. To the student it is often a period of deep anxiety, mainly because of indecision, lack of finances and a realization of many living adjustments to be made. Most of the students come with high hopes, many wishes and, sometimes, fears. Observing the incoming group faculty members realize that the most timid may become the successful, and the student with excessive ego may develop into a failure through lack of effort, poor preparation or insufficient courage when he encounters a few hurdles. We know that some of the students come to college better equipped than others, not only from the standpoint of actual knowledge but also from the standpoint of mental and physical ability, social poise, emotional control, determination and that all valuable quality of stick-to-it-iveness. It is the duty of the faculty to help this heterogeneous group of freshmen to find themselves in their chosen field and help them to develop into the type of pharmacist who will be a credit to the institution and to the profession.

Before proceeding further perhaps the objectives toward which we are striving in pharmacy should be clarified, so that that which follows will have greater meaning. Professional education may be divided into three main headings:

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1. Knowledge—that which the student should know
2. Skill—that which the student should be able to do
3. Attitude—the way in which a student should behave professionally.

It is doubtful if there are half a dozen people in the United States who would absolutely agree on just what should be included under the above headings. There would be a few fundamentals on which all would agree; beyond that, however, opinion would enter, and every one has a right to his own viewpoint—trusting of course that his belief is based on well-founded principles. Perhaps at some time in the future educators will agree so thoroughly on these points that we can have a definite set of educational objectives drawn up for the country at large. The knowledge, skill and attitude must be based, of course, on the type of positions the students wish to pursue upon graduation. Some will go into purely professional pharmacies, some into pharmaceutical research and manufacturing laboratories, many into drug stores in both large cities and small towns, some will be salesmen or detail men for drug manufacturing firms and others will enter the teaching field.

When you consider the diversified amount of knowledge and skill involved in all these fields, and the varied types of freshmen with whom one has to deal—the problem of education becomes rather complex. It would be comparatively simple if we were preparing each student to enter only one phase of pharmacy.

Not only is there more or less disagreement as to the content of a pharmacy curriculum but there has also been a great deal of discussion and some controversy over methods of teaching pharmacy. Should you visit the Oregon State College campus, it might be worth while to meditate and study the trend of education as depicted by the murals in the reading room of the library. One picture shows the imparting of tradition by the Indian father talking to his son. In those days knowledge, skill and attitude were more simple and less diversified than they are to-day. The second picture shows the modern family circle surrounded by the arts and sciences of to-day. It would be impossible for the father to know all there is to know about history, geography, chemistry, biology, medicine, etc. The vast increase in the knowledge has necessitated a specialization—consequently a need for organizing this material and choosing that which is most necessary for the student—hence formal schooling has grown up. The old apothecary shops in which the pharmacist handed down knowledge to an apprentice might be compared with the ideas expressed in the first mural; the education of the pharmacist to-day might be compared to the second picture.

Tradition, however, still has a place in modern education. The professional spirit and ideals of the pioneers in the field of pharmacy continue to stand out as shining lights in pharmacy. Their spirit and their ideals are still being handed down from one generation to the next, mainly through tradition—a development within ourselves of those professional characteristics we have seen in older members of our profession whom we have greatly admired and respected.

In looking toward the future we are aided by the ideals and standards of those who had sufficient courage to pioneer our profession through the medium of teaching and research. Scientific achievements always open the pathway for further knowledge and responsibilities—thus the pharmacist's education is never complete.

The introduction of new medicaments into the U. S. P. and N. F. are indicative of the progressive advances of pharmacy through scientific accomplishments; thus the potentialities of the pharmacist multiply and his education must be revolutionized in order that he may cope with the world in which he has to live—the world of to-morrow. Progress is the key-note of American life, but many do not care to put forth the necessary effort, or feel they cannot afford the price which spells success!

The formal education of a pharmacist at first extended over only a few months, but as knowledge increased and the duties of the pharmacist increased, the course became lengthened to two years, three years, and finally, to a full college course of four years. This has been due not only to a need for more professional knowledge and professional skill but also to a change in thought in education. Formerly, a student went to school to learn a trade or study a profession. Perhaps he went to a trade school or to a professional school in which the courses were limited strictly to his chosen field. In other words, he went to school to learn how to make a living.

The services demanded of institutions at the present time differ somewhat in different countries, but there is one common denominator for the schools of all countries. These institutions exist primarily for the purpose of preparing students for the practice of the various professions and to lay the foundations for more effective professional practice through research. This is the primary rôle, but modern educators feel that the institution should do more than this—it should have a three-fold purpose:

1. Prepare the student to earn a living
2. Prepare the student to live a life
3. Prepare the student to mold a world.

The last two purposes are those which are being stressed by social educators under the title of education for leisure and education for citizenship. Perhaps the pharmacist will say, "Where is my leisure?" However, there should be a few hours in which the pharmacist is not working, sleeping or eating and it is education for those hours of relaxation which help us to live better lives. Present schooling has the task of developing a "balanced life in a rather unbalanced age."

It must be remembered that we are not teaching a subject—we are teaching students. From that point of view we should afford proper opportunity for them to develop their potentialities to the greatest degree possible. When we speak of educating, we mean bringing out the best that is in an individual, so that he or she will be able to cope with the world in which he lives.

In our eager hope of seeing professional success and progress, are we helping students to develop traits of courage, foresight, dependability? Human behavior must be considered as well as technical education. Are we helping the student to acquire poise in meeting the public? Are we preparing him to grasp the ways in which he can be of service to his community? As a responsible citizen in his community he should learn to serve intelligently the laity, the physician, the dentist, the veterinarian, health officers, horticulturists, poultrymen and farmers.

As far as education for leisure is concerned, time should be allotted in the curriculum which will enable the student to take courses in art, music, sports, industrial arts, horticulture or any other course in which he might have an interest as a hobby. "Life is not a cup to drain, but a measure to fill!"

Considering all of these objectives, what should be included in the curriculum? It makes you feel like the father who was sending his young son to nursery school. Upon being told that his son was learning to coöperate he replied, "Well, I want him to learn coöperation but I think he should learn to be selfish enough to be a success in the business world."

The course of study in the basic pharmacy subjects should be supplemented with practical instruction which will broaden the student and develop confidence in the commercial world, thus expanding his usefulness. Certainly, we can agree that the curriculum of a school should also give opportunity for the student to select courses in the applied fields which will better enable him to serve his community. The progressive pharmacist should be well informed in the following fields, in addition to the foregoing:

- Proprietaries and detailing the medical profession
- Principles of first aid and emergency treatment
- Biological products and serum therapy
- Laboratory procedures (bacteriological and clinical)
- Surgical, hospital and dental supplies
- Disinfectants and procedures of disinfection
- Synthetics and chemo-therapy
- Cosmetics
- Sign card writing and window displays
- Pests and pest exterminators
- Animal parasites and remedies
- Business methods, procedures and ethics
- Practical experience in an ethical prescription pharmacy.

NOTE: Adequate library facilities should be available.

A pharmacist is first of all a servant to public comfort and health. Many educators do not realize that a future pharmacist does not receive adequate preparation for public health service through a regular college course. These courses must include both theory and practice—the relationship and correlation of these elements are significant, and require a broader environment than the school room. In order to be a qualified pharmacist the student must spend time in supervised practice. This experience and practice is an essential part of his or her education. College training must be supplemented by actual experience in the profession for proper development.

The last point to be discussed is one in which we are all interested—the faculty of the school of pharmacy. Needless to say, the members of the instructional staff should be thoroughly qualified; they should have the type of professional attitude that they would like to see the students emulate; in other words, they should practice what they preach! Also, they should be progressive in their own fields, keeping up with the research of others and abreast of the trend of thought in their profession, and should be interested in doing research if they are so adapted.

The faculty members should be genuinely interested in each student. Too often this relationship is sadly neglected. He should try to find out not only what the

student can do but also what he cannot do and what kind of a person he is. Only then can he be of aid in helping each one to develop to his greatest ability. The student should be encouraged to feel free to discuss problems with the members of the instructional staff. The interested staff member can be invaluable as a personnel worker among students.

Intelligent instruction coupled with complete student coöperation is essential, as the educating of a pharmacist is highly specialized; supervised guidance is paramount for success and contentment; an understanding of human nature is indispensable.

The better a faculty member understands a student, the more qualified he is for helping a student find his niche in the field of pharmacy. A student with a feeling of inferiority may be a total failure in a pharmacy in a sophisticated community; whereas, he might be a splendid success in perhaps a smaller town. An egotistical graduate may be an excellent man for traveling for a drug firm, whereas his over-aggressiveness in a drug store might irritate his employer and the customers so much that he would lose his position. The placing of the right man in the right position is very important and can be properly accomplished only by understanding the natural traits of the individual.

The faculty student relationship should not end with the graduation of the student from college. The faculty can learn a great deal about changing problems in the field through discussions with graduates. He can also discover what points should have been stressed more fully through questions which come back to him from the pharmacist in the field. Nobody claims that curricula are perfect, but the aggressive and open-minded faculty members are constantly on the alert to adapt curricula to changing times and advance in scientific knowledge. The school or college has no magic formula that will assure success or a competency to its students and graduates, but what it seeks to do is to afford proper opportunity to develop potentialities.

To summarize briefly:

1. We should consider the knowledge, skill and attitude necessary for the pharmacist in his many possible fields.
2. The curriculum should be built on education for earning a living, for living a life and for taking one's place in society as a responsible individual.
3. The professional part of the curriculum should be built on adequate and sound basic subjects, on practical phases of pharmacy, on allied subjects which round out the education.
4. The faculty members should be genuinely interested in each student as an individual and should feel a reasonable amount of responsibility for helping each one find the place in life for which he is best suited.
5. A certain amount of faculty student contact should continue after college life for mutual benefit.

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#### GOLDEN JUBILEE OF THE NORTHERN OHIO DRUGGISTS' ASSOCIATION.

The banquet celebrating the 50th anniversary of the organization of the Northern Ohio Druggists' Association was held January 27th at Hotel Statler. The event is recorded under golden cover in a 100-page publication with a foreword by Editor Carl Winter. The booklet is an album of the former presidents

and an historical record of the events of 50 years.

Associations and men prominent in pharmacy have contributed to the interesting publication. The felicitations of the AMERICAN PHARMACEUTICAL ASSOCIATION were given by Secretary E. F. Kelly. Familiar faces speak from the past who had a large part in National and State organizations and contributed to the progress of pharmacy.