

powders are always ready at hand, but how much more convenient and time-saving would the ready ampul be.

It is absolutely necessary that only distilled water be used, as ordinary tap water, on account of the presence of bacteria and foreign matter, is objectionable. Few physicians have distilled water constantly on hand in their offices, and especially in time of war, the possibility of securing distilled water in a non-contaminated room, on the battlefield, is hopeless and to procure the necessary amount from the usual sources of supply, at times of peace and more so during times of war, is time-consuming and otherwise inconvenient, hence the advantage of using prepared ampuls.

It is manifestly all important that solutions for hypodermic injection should be sterile. It is likewise evident that physicians are very frequently unable to prepare sterile solutions extemporaneously, especially on the battlefield during times of war and therefore by using ampuls, all of these difficulties can be overcome.

THE POSSIBILITIES INHERENT IN A COLLEGE OF PHARMACY FOR RENDERING THE MAXIMUM OF EFFICIENT SERVICE TO PHARMACY.*

FREDERICK J. WULLING.



I am to speak upon the future possibilities inherent in the St. Louis College of Pharmacy. The possibilities of this college are the same in kind, as those of any other. The fundamental purpose of any high-grade college is, or should be, to render the maximum of efficient service to the calling and through the latter to the public. To render the most efficient services a college must meet many requirements and must conform to some quite definite standards. Some thoughts that have come to my mind in the matter I have formulated into an outline which I submit herewith and which I will use as the basis of some remarks:

Composition of the college.—1. Governing body, 2. faculty, 3. quarters, 4. equipment, 5. students, 6. alumni. All of these are organized to render the maximum of efficient service to (a) the student body, (b) the profession, and through these to (c) the public.

Under the heading of governing body comes the consideration of business administration, which includes executive faculty officers; budget; clerical assistance; card indices; statistics; co-operation with faculty; appointments; salaries and salary scale; faculty promotion; research; fellowships; scholarships; publications; future development and extension work.

Under the heading of faculty comes the consideration of organization, which includes executive faculty; executive officers; classification of teachers into dean, professors, assistant professors, instructors and assistants; conferences; aca-

* An address delivered at the fiftieth anniversary of the St. Louis College of Pharmacy.

demic freedom; sabbatical year; administration of educational matter; relation to governing body; relation to students; ratio of teachers to number of students; relations with other faculties; co-operation; promotion; salaries; research; fellowships; scholarships and extension work.

Quarters should be well-located; abundantly lighted, naturally and artificially; spacious; modern; sanitary; fireproof; well-adapted, and preferably a separate building.

Equipment should be, sufficient in quantity; adequate in kind and variety; up to date; extensively used; systematically kept, and inventoried.

Under the heading of students comes a consideration of the kind to attract; entrance standards; courses of study both undergraduate and graduate; rating of work in "credit hours"; conduct and discipline; honor system; employment while at college; organization; health conditions; moral standards; graduation standards; and degrees.

The alumni owe it to the college to keep in touch with it; send qualified students; advise in conduct of college; and uphold college ideals by precept and practice.

GOVERNING BODY

I will consider the first two divisions, governing body and faculty together.

Any college of pharmacy to be successful in the rendition of a maximum of efficient service must have a general aim and ideal, and a policy and a suitable and well-constituted organization to carry them out. This organization must include the governing body and the faculty. The respective functions of these two divisions within the organization should be designated, by conference and agreement, as clearly and definitely as possible, although in many respects the line can not be drawn very closely. In a general way, the governing body (the regents of universities and the dean, or the trustees of other educational bodies or associations and the dean) is usually and logically the dominating division, and has in charge the financial administration and, with the aid of the faculty, determines both the business and the educational policy of the institution. In the case of weak institutions the cause of the weakness can usually be found in the governing body, which, through indifference or incompetence or failure to fully recognize its duties and responsibilities on the one hand, or through unfavorable or uncontrollable conditions on the other, is unable to provide and maintain adequate quarters and equipment and a competent faculty for the fullest exercise of the purpose for which an educational institution is supposed to be created. In some few cases it appears that the governing body and the faculty are made up in whole or part of the same persons.

The second division of the organization is made up of the faculty. Where there is a weak governing body the weakness usually extends into the faculty and into all other divisions, while correspondingly a strong and well-qualified governing body establishes and infuses strength into all divisions. In some cases a strong faculty or a strong executive officer of the faculty succeeds through affirmative influence upon the governing body, in developing the college into a tolerably efficient working unit. These cases are not so rare as would generally be supposed. Indeed, in numerous cases, it is a single individual, usually clothed with some authority,

who sets the pace and formulates the ideals to be reached, and by patient endeavor and hard work corrects or overcomes the weakness or indifference of the governing body. A strong governing body will concern itself with the establishment of a sound financial basis for all divisions, resting upon a sufficient and equitably distributed budget to provide and maintain a representative faculty, adequate quarters and a well-selected and balanced equipment. An organization thus composed should divide the responsibilities of its functions into (a) a business administration, and (b) an educational administration; the governing body assuming the former and the faculty the latter.

BUSINESS ADMINISTRATION

The business administration, of course, is relatively important in that it must provide the funds for the conduct of the institution, and because the nature of the conduct depends upon the quantity of finances. There are practically only two classes of pharmaceutical teaching institutions in this country, and their division is based largely upon the sources of their finances. These sources are, on the one hand, primarily the student-bodies; on the other hand, the student-bodies and the States. In the former case there is often required a very careful and economical business administration, and because of the insistence of some of the teaching departments, as over against the claims of others the division of the finances is not always equitable unless the practice is followed of considering the needs of each department in the light of the needs of all departments and crystallizing the agreements into the form of annual or biennial budgets. In this part of the administrative work the faculty should render much assistance. Indeed, the organization should provide that the dean and the heads of faculty departments agree upon the distribution of the sums available for the educational administration and then submit their recommendations to the governing body.

Aside from the administration of the financial affairs, the business administration should provide for a sufficient clerical force, whose duty among others it should be to keep a complete set of books and from which should be compiled annually much information in the nature of statistics, which should be card-indexed for ready reference. This business record should include information as to receipts and disbursements, as to moneys paid for salaries, for supplies and for office staff, an index of the supplies, including their cost, etc., acquired annually under the respective budget divisions, etc. There are firms who make it a business to systematize other businesses. They do this often at a very low price, and money thus expended usually bears much fruit.

EDUCATIONAL ADMINISTRATION

Next in importance to or possibly co-equal in importance with or even superior to the business administration is the educational administration. This educational administration should be vested exclusively in the faculty, the latter, of course, subject to the governing body. A representative faculty is one composed of members who possess a high degree of attainment not only in their chosen fields of work, but also in the more academic fields of scholarship and in culture. It is imperative that they possess as the first essential pronounced abilities to teach. They should have a special pedagogical training and should be versed in

psychology and logic and philosophy. They should have a pronounced love for their work and should carry it on with enthusiasm and be able to communicate their enthusiasm to their students. They should be men of representative personality and of some affairs, and should be able to measure themselves satisfactorily with the successful teachers in other professional callings. The men in the higher ranks should possess not only the ability, but should also have the necessary incentive and time to carry on research work. The academic freedom which has so greatly contributed to the development of educational institutions in this and other countries should be enjoyed more fully by members of pharmaceutical faculties. They should also enjoy the advantages of the sabbatical year. It would redound greatly to the benefit of the college if it were an established rule that the men in any of the professional ranks be given the opportunity of a year's work and study in a foreign country, or even in some of the higher institutions of our own country at intervals of seven years. Where the sabbatical year is recognized the professor is usually away on leave of absence for either a full year at half salary or a half year at full salary.

THE FACULTY

The faculty should be composed of an executive faculty, accountable to the general faculty; an executive officer, who usually is and should be the dean; professors, associate professors, assistant professors, instructors, and assistants. The faculty should formulate all educational policies as well as establish the courses of study, the entrance and graduation requirements, the method of interpreting the work of students in credit units, the rules for the conduct and discipline of the students—in short, should administer upon all the educational activities of the college and be responsible only to the governing body. All faculty actions should be final only after approval by the governing body unless the latter has given the faculty power to act in either a general or special field.

CO-OPERATION OF FACULTY AND GOVERNING BODY

The governing body and the faculty should co-operate in the selection and appointment and in the promotion of faculty members, always with the fact in mind that it usually is not an easy task to find the right man at the low salaries offered, and that on this account great care in the selection of permanent additions to faculties should be exercised, lest insufficiently competent men lower the faculty standard. It would be a good plan to more universally adopt the practice of some colleges of appointing instructors from year to year and assistant professors and associate professors for periods of three years. This arrangement relieves both parties of embarrassment and the obligations are understood on both sides. Appointments of full professors are usually for an indefinite period, the unexpressed understanding being that the teacher who has reached the full professorial estate has also acquired the qualification to continue his work satisfactorily.

Many governing bodies have erred greatly in the past by bestowing academic titles on teachers wholly unqualified for such distinction. Indeed, there are numerous cases in which, instead of any salary or a sufficient salary, services were rewarded by titles which were often but not usually deserved. In this way pharmacy has been greatly abused, especially the title of professor.

The two divisions should further co-operate in establishing fellowships to foster research and in creating other opportunities for research; in providing scholarships for worthy and capable students; in promoting a continuous and developmental growth, including possibly extension work, and in other matters, such as a proper ratio of teachers to students; faculty salary scales; social work among students, including a study of their health conditions, environment, associations, entertainments, moral and social standards and suggestions for the improvement of these; rules of student conduct and discipline; student publications; honor system; relation of the college to other colleges and to organizations; college publications; maintaining the interest of the alumni in the college and securing their help and advice in the conduct of the college, etc.

The faculty should have frequent conferences, in which the members should harmonize and co-ordinate the work of the curriculum, each with the full and intimate knowledge of every other members' work and responsibility, to the end that each can give the fullest measure of effective service to the students and to the college. The work of a faculty is distinctly inferior where each member carries on his work independently and without regard to the work of the other members except in a very general way. It is the duty of the dean to see that the divisions and units or departments of a college co-operate and co-ordinate in all respects, even in the less important details, and that every member of the faculty is concerned at least as much in the welfare and success of the college as a whole as those of his own particular department. Over-development of some departments as against others should be avoided because it disturbs that balance in the nature and conduct of work which should characterize the efficient and high grade college. I do not hesitate to say that in the average faculty there is not enough co-operation and coherency to insure a maximum of efficient service.

For the most effective service the faculty should be a separate organization and should work as a unit. To facilitate its administration work, much of the work should be apportioned to appropriate committees; the heads of departments should constitute the executive faculty and the dean the administrative officer whose powers should be defined largely by the governing body. Individual effort and growth should be stimulated and recognized, especially in the lower ranks of the faculty. No two persons possess identical ability or capacity, but in the absence of special agreement the entire effort and ability of every full-time member, whatever it may be, quantitatively and qualitatively, should be contributed to the college. Every faculty member is doing his duty to the college if he contributes conscientiously the entire product of his activity, irrespective of quantity or quality (though these must, of course, measure up to a certain minimum), to the common cause and purpose of the college. Team work is the only kind of work faculties should do, and team work is the concerted work of a number centralized into one common purpose to produce that degree of efficient service which only earnest and willing working together will bring and which is the only kind of service any faculty should deem itself worthy of giving.

FACULTY AND STUDENTS

The faculty and the students should always co-operate to produce the best results for each. Much of the advice given to students is also applicable in a

degree to the faculty. The presumption is that the members of faculties always have in mind the fact that they also are students, but of a maturer growth, and in this light the faculty has duties to itself as well as to the student body.

The most important and far-reaching duty which the faculty owes extends, of course, to the student body. The students soon become the responsible practitioners. They carry with them the fullness or the paucity of ideas and ideals instilled into them during their student days; as the faculty so the students, in a large measure. While I would not belittle the importance of a well-rounded and conscientiously taught course of study, I yet would subordinate it to the imparting to students of high aims and lofty ideals in human conduct; to the students' development of a high sense of moral responsibility; to the creation within the students' hearts of an enduring love and enthusiasm and respect for their chosen calling; to the students' recognition that capacity for self-help and the continuous and capable exercise of that capacity and the effective use of specialized knowledge is far more necessary and resultful than the acquisition of much mere information subject to neglect and loss by the memory; to the students' conviction that the exercise of the reason, the use of sound and well-considered judgment, the practice of logic and the habits of order, sequence and accuracy are the essentials for personal and professional development, and that their opposites in an equal or even greater degree retard growth and usefulness and therefore impair quality of service. Students should be imbued with the fact that mere knowledge is of no inherent or intrinsic value if it is allowed to lie dormant and latent, but that its real value lies in its judicious use and application to purposeful ends, and that the capacity developed in its acquirement makes the students correspondingly competent to administer upon more and more difficult problems as they appear. Not only is the victory worth while, but the struggle is even more so. The faculty which believes in easy and lax methods and is indifferent in its graduation requirements and fails to advance very markedly the students' professional and personal ideals falls far short in the successful exercise of its duty and fails to recognize the very large opportunities for and the great privilege of rendering upward service which its place in the college gives it. In the ultimate the value of every individual to humanity is measured by the quality and quantity of service rendered, and, according to the law of cause and effect or the law of compensation, or whatever one may call that principle which balances things, capable and unselfish service weighs more heavily than any other factor. This matter of service is constantly impressed upon students by some faculties, and emphasis is laid upon the fact that any kind of training must include not only the possession of a sufficiently wide scope of knowledge and the ability to add to it and to employ it wisely and effectively, but also all those other virtues that mark and distinguish the cultured and refined and unselfish and devoted practitioner.

QUARTERS AND EQUIPMENT

Adequate quarters are a very real necessity for the conduct of the best kind of work. No matter how competent the worker, if he is not properly housed or quartered, he is unable to do his best. In general, quarters should be well located, abundantly lighted (naturally and artificially), consistently spacious, modern, sanitary, fireproof, well-adapted and preferably constitute a separate

building. The location determines in a large measure the usefulness of a college. Obviously, the college should be located in the largest center of population of a given geographical district, and the more convenient the location within this large civic center the better. If the quarters constitute a separate and well-planned and adapted building, the possibility of service is that much enhanced. In the planning of quarters, as a rule, not sufficient attention is given to the lighting problem. The quarters should be lighted naturally from all points of the compass and provisions should be made in the planning of the building for access of sufficient daylight. The quarters should be consistently spacious. Overcrowded and cramped quarters are not much better for efficient work than too spacious rooms, in which the traversing of large areas consumes much time and strength. It is obvious that the quarters should be modern, sanitary and fireproof. Good sanitary conditions are essential to good health and the safety of the occupants of the building requires that the latter be fireproof or that it have sufficient protection against fire. One of the most efficient protections against fire in buildings that are not fireproof is the sprinkler system. This is recognized by the fire underwriters, and buildings equipped with this automatic sprinkler system are insured at a much lower premium than other risks.

Equipment is another of the essentials for producing the best results in the work of a college. Equipment should be sufficient in quantity and adequate in kind and variety. It should be up-to-date, be extensively used, systematically kept and carefully inventoried. Much could be said on the matter of equipment, but time and space forbid.

CONCLUSIONS

A college which meets the standard I have hastily and all too incompletely presented to you, is fitted to render a service to pharmacy and to the public that is correspondingly equal to the service now rendered by any college representative of other professions. If all colleges of pharmacy were of this standard, their combined influence would soon place pharmacy into its rightful rank of co-equality with other learned professions. The service which a highly developed profession of pharmacy can render is as valuable, dignified, responsible and respectable as that which any similar agency in any human activity can render. Why should pharmacy be so modest and self-effacing as it appears at present to be? There is no reason that I would regard as sufficient. If pharmacy does not enjoy the same respect accorded to other learned callings, it surely is not because it does not merit similar recognition. At present pharmacy lacks self-assertion and the recognition of its rightful place in human affairs. Education is fundamental. Pharmacists as a class are under-educated, and for this condition they themselves are responsible. The awakening must come through pharmaceutical educators and through pharmaceutical educational agencies. Others will not elevate pharmacy, except that through widespread pharmaceutical incompetency a reaction might be initiated by the public which would demand a much higher grade of pharmaceutical service than is now the rule, and which it might seek to secure through legislation.

The St. Louis College of Pharmacy already meets in a very large degree the standard I have suggested. To meet it fully and even to exceed it is one of its

possibilities. With the sure foundation of fifty years of useful work and service, and with the valuable tradition behind it; with an enthusiastic faculty ever ready to recognize the growing needs of the times, and with a full knowledge of the necessity of valiant and persevering industry to succeed in the struggle of existence, the college is ready and willing and able to become acceleratingly useful with the passage of years. The history of the college is enviable. Its half-century of valuable service and influence has created for it the present duties of fostering even higher ideals; of entering upon an even more unselfish endeavor to stimulate and increase its service; of affiliating itself with every activity in the interests of higher educational and professional standards; of increasing its influence for better and higher pharmacy throughout the southwest, and thereby correspondingly throughout the country. The college, no doubt, is fully aware of these increasing duties and responsibilities, and can be trusted to meet them in a capable and competent manner, for it is written, "The glory of this latter house shall be greater than that of the former." The former house, your fifty years of enviable service, is the heritage into which American pharmacy has come; a heritage which we all cherish alike and which, full of honor and accomplishment and emulable tradition, becomes the foundation for the latter house. The former house was begun with splendid forethought and skill, with unselfish devotion to high ideals, with a consecration to high purposes and achievement, and with creative genius by those early pioneers in pharmaceutical education who have gone on to their reward, and whose courageous enterprise and hallowed memory we so deeply respect and honor, and to whom these splendid exercises are in a large measure dedicated. If all of those early founders could be with us to-night, how they could glory in their work, and how satisfied they could be with the structure for which they laid the foundation, and which their successors so nobly and unselfishly reared. Pharmacy owes them a deep debt of gratitude which can be repaid only by a continuation of their work in the same unselfish and sacrificing way in which they began it, and by a devotion to everything that tends to the fullest fruition of their noble aims. The latter house now to be reared is replete with possibilities of still greater service and achievement, the fruition of possibilities depending only upon the firm resolve and enthusiasm, courageous work and untiring perseverance of those entrusted with the continuance of the work so nobly begun by those who should be counted as among the fathers of American pharmacy. May they so build on that future generations may say, "They builded better than they knew."