

# THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

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*Editor's Note:* Shall the pharmacist go after the dental prescriptions? By all means. The following paper by Professor Schicks tells how it may be done and also tells how we may prepare our students to serve the dental profession. It is worthy of careful perusal by all faculties of colleges of pharmacy.—C. B. JORDAN, *Editor*.

## SHALL COLLEGES OF PHARMACY TEACH DENTAL PHARMACY?

BY GEORGE C. SCHICKS.\*

The extension of the time period and the enlargement of the scope of course content in the present-day training of the student of Pharmacy stands as mute evidence of what has been uppermost in the minds of pharmaceutical educators. College courses have not been lengthened from two years to four nor course subjects doubled that the graduate in pharmacy might say, "I have attended college four years," nor has this change come about for the purpose of increasing the prestige of the profession of pharmacy.

No one will question the fact that professional prestige follows close upon increased training, a firmer scientific background and a greater adaptability in fields closely allied with pharmacy. But pharmaceutical educators have not thought first of professional prestige. Colleges of pharmacy have been scientific pioneers in professional usefulness. To such an end have their faculties shaped courses to widen the scope of the professional activities of their graduates. Professional usefulness must be the key-note of every pharmacy curriculum. Professional usefulness must be the pattern from which every basic scholastic activity of a college is fashioned. Professional usefulness must be first, last and uppermost in the minds of educators in our colleges; it must be—nothing else can be substituted, for professional usefulness is the salvation of Pharmacy.

It is fast becoming a reality that the man in pharmacy who can divorce himself most completely from the soda fountain, the cigar case, the cosmetic counter and the sandwich grill, is the man who has narrowed his competition to the minimum. May I say again—he alone among the keepers of shops is licensed by law to compound prescriptions. That has been the key-note of his training and his professional prestige will increase with his professional usefulness.

Each year splendid groups of fine young men and women leave our colleges of pharmacy—young people whose eyes have seen scientific wonders under microscopes; whose fingers have held tubes while scientific miracles have gone on within those glass containers; whose hands have stained slide after slide, that those eyes might behold the giants of disease which stalk among men. Are those young people going to give up their test-tubes and mortars and microscopes to make sodas or ham sandwiches?

Of course, they aren't. Those young people have caught the spirit of science. The spirit of science has captured them. They are the products of our colleges

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in the minds of whose faculties has been uppermost the ideal of professional usefulness.

It is this ideal of professional usefulness which is prompting me, a teacher in a college of pharmacy, to urge the association of colleges to emphasize the subject of dental pharmacy. Colleges are the scientific pioneers for professional usefulness and dentistry represents a large field for the prescription pharmacist.

There are some very definite reasons why dental pharmacy provides a fertile field for professional activity. Uppermost, perhaps, is the earnest desire of the dentists of this country to learn more about official drugs and preparations and the prescribing of them. Their enthusiasm and cooperation have been more marked than one dared even believe they could be. Here is a field where professional pharmaceutical usefulness is welcomed. In the few years that I have been engaged in this work, more than a thousand practicing dentists have given me their names and addresses requesting that they be kept informed regarding recognized and approved drugs and preparations. Letters have come unsolicited from outstanding dental educators and officials, encouraging us in our work and assuring us of their cooperation.

It has always been the privilege of the pharmacist, authorized by licensure, to serve the medical profession in all of its special branches. Dentistry represents the second largest field for prescription writing and therefore widens the scope of professional service.

Our student pharmacists need some training with regard to the needs of the dental profession. Much professional usefulness would be sacrificed if the service rendered is not an intelligent one.

The writing of prescriptions is a comparatively new field for the dentist. It must be remembered that the training of most dentists and of many physicians has been lacking in prescription writing. Colleges of dentistry recognize this deficiency and are strengthening their courses in *Materia Medica* and the prescription. The student pharmacist should be encouraged to develop an attitude of understanding and helpfulness. Ridicule of prescriptions will do much to retard cooperation between the dentist and pharmacist.

Some pharmaceutical supply houses have always made prescription writing as easy as possible for all branches of the medical profession. These houses are supplying dentists and physicians with prescriptions which in reality amount to nothing but a notation in good legible printing of a substance to be purchased at a drug counter, the patient to follow either the directions given on the bottle or package or those printed on the prescription. Such a practice robs the dentist of individuality in his prescriptions, encourages self-medication and discourages the use of any products other than the packaged type.

It would seem, then, that the student pharmacist should be thoroughly trained in Latin prescription writing. College courses in prescription writing should be so strengthened to assure adequate training. An accurate and brief method of writing prescriptions should be so outlined to the student that he could make helpful suggestions to the dentist when discussing prescription problems with him.

Charters, in his "Basic Curriculum Materials," mentions "Agents Acting on the Teeth and Gums," and totals them as numbering 121 substances. In a small booklet published by the N. A. R. D., entitled "Official Drugs and Preparations

Used in Dentistry," there are listed some 230 drugs and preparations official in the U. S. P. and N. F. A study of these items will reveal the many opportunities open to the pharmacist to supply these materials to the dental profession. At the present time a wide field for professional usefulness is lost to the manufacturers of dental supplies, for they are the only ones who are going after the business. It is their salesmen who supply practicing dentists with the information they get regarding the drugs they use in their practice.

Dentists in their practice use many of the same drugs and preparations used by the physicians, but unless such facts are pointed out to the student, he may pass them by with no thought as to their dental application. The teachers of Pharmacy, Materia Medica and Bacteriology should emphasize such drugs and preparations when they are studied in these courses and point out their special application to dentistry.

The questions now arise as to how and where in the pharmacy curriculum should dental drugs and preparations be considered and how much time should be allowed for this work?

It seems that a suitable place for the study of such drugs would be in the lecture and laboratory of Materia Medica or Pharmacology, Dispensing Pharmacy and Bacteriology. For instance, when the pharmacology of iodine is being considered, its use in dentistry should be mentioned, stressing the reasons for its use, the preparations commonly used, which may differ some from the U. S. P. and N. F. formulas but which contain official materials—whether or not it produces a permanent stain on the teeth, how such may be removed and the strength and solvents of iodine preparations used in the mouth, etc. Not only the antiseptic and germicidal value in the oral cavity should be considered but also its use in solutions such as a disclosing agent. The combination of iodine with other substances such as zinc chloride, potassium iodide, glycerin and water for this purpose should be noted.

It may be necessary to add a few new terms to the student's vocabulary, as in the uses of iodine as a "disclosing agent" and antiseptic and counter-irritant in the treatment of pericementitis. Attention should be brought to the fact that dentists usually use a weaker solution than the approximate 7% U. S. P. strength tincture. Those classes and combination of drugs used more commonly in dentistry, such as abrasives, obtundents, devitalizing agents, varnishes, etc., may be studied at some convenient time during the lecture and laboratory periods.

In dispensing pharmacy the student may be required to dilute the U. S. P. tincture of iodine with equal parts of glycerin, making a strength commonly used in dentistry—a strength not likely to cause severe irritation and one more readily uniting with the mouth secretions. To increase student technique, such a solution could be placed in glass ampuls—not that this has any special application to dentistry, but it would show how ampuls are filled and focus attention to the 3.5% iodine ampuls in the N. F.

In the same course, students should compound prescriptions used by dentists in office practice, and those written for patients. Characteristic prescriptions may be obtained from the files of local pharmacists and students could be asked to bring in dental prescriptions. Stock solutions and preparations which the dentist uses in his own office but does not usually prescribe should be made by the

student. For example, Talbot's Iodo-glycerol Solution, scouring powders, colored and flavored, obtundent solutions, digestive solutions or pastes for removing dead pulp or extraneous tissue, varnishes, disclosing refrigerant and counter-irritant solutions. The kinds of, and uses, for various abrasives and polishing agents found in tooth powders and pastes, such as precipitated and prepared chalk, tricalcium phosphate, tin oxide, pumice, magnesium carbonate, soap and others, should be referred to and their combinations studied and experimented with.

Tooth powders and pastes should be made by the student, using the above substances and others. The preparation of tooth-paste base should be given as an experiment. The formula for such a base appears in the September 1932, issue of the *Druggists Circular* and the February 1933, issue of the A. PH. A. JOURNAL. To this base, medication may be added upon prescription by the dentist. A similar experiment could be performed with vehicle mouth rinses.

The coloring and flavoring of substances such as sodium perborate should be considered. There is little excuse for requiring a patient to take ill-smelling or tasting medicaments. There are some substances, the flavoring of which might be experimented with by some especially interested students who are qualified to carry on the work, for instance, the preparation of a palatable solution of copper sulphate or chromic acid.

Since the lecture and laboratory work in dental pharmacy is not widely different from that usually studied in most pharmacy courses, a minimum of 10 hours of laboratory and 3 hours of lecture could be used to advantage in dispensing pharmacy. In bacteriology, when the antiseptics and germicidal power of certain agents are studied, special reference to dental use could be made. The germicidal claims of mouth washes and tooth pastes could be checked and compared, thus giving the student valuable information to discuss with the dentist. Attention could be brought to the fact that certain tooth pastes no longer bear the word "antiseptic" on the tube and some manufacturers of mouth washes have changed their dilutions to make claims more nearly true. In courses such as *Materia Medica* and *Bacteriology* special reference to the dental application of drugs and preparations should be mentioned as the drug is brought up for consideration.

Stress should be placed on the rulings of the Council of Dental Therapeutics of the American Dental Association, governing the acceptance of the drugs and preparations analyzed by its laboratory. Student pharmacists should be shown the wisdom of encouraging the use of non-secret dental preparations and preparations accepted by the Council.

At the present time there is not a publication known as "Accepted Non-Official Dental Remedies," although one is in preparation, and it is therefore necessary to get such information from the *Journal of the American Dental Association*. Permission has been granted me by the American Dental Association to publish in a pharmaceutical journal the list of accepted and rejected dental preparations. This information, it is believed, will be invaluable to the practicing pharmacist.

It will require extra effort on the part of the teacher to compile the necessary information regarding the drugs used in dentistry, as well as the arrangement of the laboratory experiments, but the work will be found most interesting and exceedingly worth while.

The following prescriptions may give some idea of the nature of the work:

R <sup>1</sup>	Iodine	3.50 Gm.	Glycerin	7.50 cc.
	Potassium Iodide	1.20 Gm.	Alcohol	1.00 cc.
	Zinc Chloride	1.00 Gm.	Menthol	0.05 Gm.
	Glycerin	25.00 cc.	Eucalyptol	0.05 cc.
	Distilled Water	25.00 cc.	Methyl Salicylate	0.05 cc.
Sig.	Disclosing solution to be used by dentist.			
R <sup>2</sup>	Zinc Chloride	1.00 Gm.		
	Solution Formaldehyde	0.25 cc.		
	Menthol	0.25 cc.		
	Oil of Cinnamon	0.50 cc.		
	Oil of Clove	0.50 cc.		
	Alcohol	25.00 cc.		
	Distilled Water to make	100.00 cc.		
	Tincture of Cudbear to color.			
Sig.	4 cc. in half glass of water as mouth rinse.			
R <sup>3</sup>	Iodine	20.00 Gm.		
	Phenol	60.00 Gm.		
	Glycerin	20.00 Gm.		
Sig.	To be used by dentist as a caustic.			
R <sup>4</sup>	Pepsin	7.50 Gm.		
	Diluted Hydrochloric Acid	0.50 cc.		
Sig.	Devitalizing paste.			
R <sup>5</sup>	Camphor	47.5 Gm.		
	Menthol	47.5 Gm.		
	Alcohol to make	100.0 Gm.		
Sig.	For facial neuralgia.			
R <sup>6</sup>	Rosin	20.00 Gm.		
	Chloroform	100.00 cc.		
Sig.	Varnish in dental work.			
R <sup>7</sup>	Ethyl Aminobenzoate	10.0 Gm.		
	Balsam Peru	15.0 Gm.		
	Glycerin	20.0 Gm.		
Sig.	For painful socket.			
R <sup>8</sup>	Arsenic Trioxide	Gr. LXXX		
	Cocaine Hydrochloride	Gr. XV		
	Oil of Clove to make a paste.			
Sig.	Devitalizing paste.			

The college teacher can find many outstanding books which will give him great assistance in outlining his work. Such books as the following will be found invaluable:

- Prinz, "Dental Materia Medica and Therapeutics," C. V. Mosby, St. Louis.  
 Prinz, "Dental Formulary," C. V. Mosby, St. Louis.  
 Buckley, "Modern Dental Materia Medica, Pharmacology and Therapeutics," Blakiston, Philadelphia.  
 Harris, "Dictionary of Dentistry," Blakiston, Philadelphia.  
 Fones, "Mouth Hygiene," Lea and Febiger, Philadelphia.  
 Fisher and Riethmuller, "Local Anesthesia in Dentistry," Lea and Febiger. Other reference books will be found listed among the dental textbooks of catalogs presented by publishers of scientific books.

Rutgers University College of Pharmacy has endeavored to stimulate a national interest in pharmaceutical service to the dental profession. Several colleges of pharmacy are now engaged in this important and helpful work. The undertaking is too great and the scope too national in character for any one college to undertake. I should like to urge the Association of Colleges to foster the opportunity which dental pharmacy offers for increased professional usefulness. I should like to ask them to again be pioneers in a field which offers so many possibilities for their graduate students.

<sup>1</sup> PHENOL IODATUM N. F.

<sup>2</sup> LIQUOR PEPSINI ANTISEPTICUS N. F.

<sup>3</sup> MENTHOL CAMPHORATUM N. F.

<sup>4</sup> SOLUTIO RESINÆ CHLOROFORMICA N. F.

NOTE: Many dentists use twice the amount of rosin in the same amount of chloroform.