

year and some method be devised so that all pharmacists may be privileged to take advantage of such a pharmaceutical service."

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### DENTISTRY AND PHARMACY.\*

BY P. T. MEANEY, D.M.D.

"On behalf of the dentists of the Northwest, and particularly the dentists of Oregon, I wish to thank the AMERICAN PHARMACEUTICAL ASSOCIATION for this opportunity of appearing before the assembled delegates."

In the history of civilization a century is but a brief span. In the history of pharmacy and medicine five score years seem longer, but they are still a very small portion of the life of a profession. In the history of American dentistry that period includes by far the more important part of its development. Much of the early history of pharmacy, medicine and dentistry is more or less involved in obscurity, and this is particularly true of pharmacy and medicine. They are not to be discredited on this account because history is, for the most part, a succession of fables which the people agree to follow. They take what is given to them by historians, who, in turn, use what they can of the records which are available. History must always be read with an open mind. Science, as we know it, is essentially modern, although its foundation was laid in remote antiquity. We find that in early periods all knowledge was more or less confused, and there was no differentiation between professions which are widely separated to-day.

It has been said that the tripod upon which every profession rests, if it becomes finally established, must be: The school for the instruction of the future graduates; the scientific society for fraternal intercourse and the presentation of knowledge, old and new; and the journal, to disseminate knowledge and to stimulate a wider education and a more general improvement by reaching a larger public. In short, literature, education and organization are the foundations of any lasting profession. One cannot say which is the most important, but one can safely assert that organization is a great consolidating influence.

A man cannot become educated in a profession until there is a recorded history of that profession. There must be available a carefully digested store of ideas, experiences and conclusions of the past, for it is upon the past that the present is founded. Education is what raises a craft to the dignity of a profession. A craftsman needs only to be trained. A professional man must be not only trained, but he must also be educated. This education can best be acquired from the literature of the profession.

Historically, the profession of pharmacy antedates the other health service professions.

With a history dating back four thousand years, broken only by periods of desperation for improvement, the professions of pharmacy and medicine, which were closely allied during most of their early history, have struggled through the ages to become at present two of our outstanding professions. In the early Assyrian,

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Egyptian and Chinese civilizations, we find some very interesting incidents relating to the professions of pharmacy and medicine. There is less known of the pharmacy of ancient China than there is of any other civilization, due, probably, to the fact that the Chinese have always been reticent and secretive to an unusual degree, and because there has been less research in the ancient literature of this living nation than in the literature of many other nations that have disappeared. There is a pharmacopœia-like compilation in Chinese called the Great Herbal. It consists of forty volumes and contains quotations from the works of nearly one thousand authors, many of whom date from a period long prior to the Christian era. The science of medicine, which includes pharmacy, is referred to as a benevolent art. Proof that there were no dentists in China during these periods, and if there were they were regarded with great favor, is indicated by a reference to the following early history.

There were many medical divinities in the religions of China. Of the seventy-two Buddhas, twenty-nine are gods of healing or of drugs. In Taoism, which is a philosophy of abstract virtue, a great part is played by the Yin Yang symbol, or Great Monad, which is a protective charm against evil. Taoism abounds with charms, lucky days and perfect numbers. Rewards and punishments are abundant. Of one hundred fifty separate and particular hells, one is reserved for pharmacists and one for physicians, but there is no mention of dentists. The thirteenth hell is where the victims are perpetually forced to swallow hot, disagreeable medical decoctions.

The profession of pharmacy has been responsible for the development and perfection of many of the basic sciences, chemistry being one of the most outstanding. This profession acts as an intermediary between the other health service professions and the public; therefore, indirectly, you become responsible to a large degree for the health of the great mass of humanity; a responsibility which no other health service profession can boast. Your profession has contributed to all other health service professions without having lost its identity.

From the time of Hippocrates, four hundred years before the Christian era, until the 15th century, all information on dental disease was a small part of medical literature. In 1728 Pierre Fauchard, in his book entitled "Surgeon Dentists," assembled the best of all that was known in dentistry up to that time. Shortly after the 18th century there began to appear in France small volumes written by surgeon-dentists and designed for the laity. Other writers in Europe continued to write upon dental topics and in the American colonies, in the 17th and 18th centuries, the only books on dentistry were the medical books. The main influence on dentistry came from Great Britain during this period. The five important British authors were Berdmore, Hunter, Blake, Fox and Murphy. The reading of these books from Europe stimulated writings in America. In the 19th century several American books appeared by American authors, Doctors Skinner, Flagg and others. The culmination of dental learning at that time was a book by Samuel S. Fitches, published in New York in 1829, written in six different languages. It was a digest of everything ever written on Surgeon Dentistry. It gave a soul to this branch of surgery, which had previously been lacking, and gave to the American dentists a concreteness which they had never had before. Other books written about this time established the preëminence of American dental literature.

Most writers on American dentistry start their history in the first decade of the 19th century. It is true that until 1840, in the United States, medicine and dentistry were essentially one.

The period beginning in 1830, and ending with the panic of 1837, was a period of speculation, mutation and popular unrest. There were acute disturbances within the medical profession itself, which, together with the general unrest, were to have a pertinent relation to autonomous dentistry.

Elisha Perkins' patented treatment of ills by galvanic current, generated by "metallic tractors," had been the vogue in the early years of this century. After the novelty wore off, another cult arose which taught that all medicines not of plain origin were poisonous. The members of this cult adopted the name of "Botanico," or Thomsonians, and received patents on their medicines. Requiring no training, experience or education, but only a sum of money for a book of instruction and a supply of medicine, the cult became popular, grew and prospered. To the annoyance caused by these and other cults was added the problem of medical sects.

Homeopathy, founded by Samuel Christian Hahnemann, was based upon the theory of drug potentiality and was a protest against nauseous doses in vogue with the regular school of medicine. Although there were no institutions in which homeopathy was taught, it made rapid progress because the public was in a restless mood toward medicine, owing to its recent attacks on the cults.

The Botanic-Electis, another powerful sect, was a protest against polypharmacy. They taught the doctrines of specific—the use of a single drug for each disease.

Without precedent, the new dental school founded in Baltimore in 1840 was necessarily modeled after existent medical schools. There was no requirement of preliminary education, and in order to attract medical school graduates, the full course was fixed at a single term of sixteen weeks. There were no clinical facilities, and the faculty, consisting of two physicians and two dentists, merely gave a series of didactic expository lectures, after which the student received the degree of doctor of dental surgery.

Five years later, in 1845, the Ohio College of Dental Surgery was established in Cincinnati. Patterned after the Baltimore School, but with some new features, it became the Western influence in dental education.

The one-session course was soon abandoned for two sixteen-week terms. This made the dental course the same length as the course in most medical schools. Unlike medical training, there was no requirement that the student continue work under a preceptor. The paucity of competent dental surgeons to serve as preceptors forced the dental schools to put clinical instruction into the school curriculum. At this time clinical instruction was not yet part of the medical training. There was little work done under preceptors until 1867, when the Harvard Dental School inaugurated a requirement of sixteen months under a preceptor, in addition to the school course, before the degree was conferred. The current dental journals hailed this as a great advance in dental education.

Another unfortunate occurrence was the application of the term "mechanical dentistry" to that part of dentistry connected with making dentures, as distinguished from the phase of operating on the living teeth of the mouth. Thus, the opponents of dentistry called mechanical dentists "mechanics" and classed them with

the various types of craftsmen, especially after they began to patent their inventions.

The medical profession considered patented instruments and appliances of the same ilk as patent medicines, and so this became still another factor in estranging the professions.

In an attempt to obviate the difficulty which prevented any of the societies from becoming national in character, Elisha Townsend organized the first American Dental Convention in 1855. These national conventions, like their medical counterparts, proved unsatisfactory because of lack of continuity. There being no continuing of officers, the conventions were a series of annual assemblies rather than meetings of an organization, at intervals of a year. There was no uniformity of policy or method, and no such affiliation as one would expect in an organization of persons of the same profession, with ostensibly the same aims, ideals and purposes.

The organization of the National Dental Association in 1897, and its reorganization in 1913 to become the American Dental Association, has continuously expanded its activities, until they now include a large number which extend into every field of the art and science of dentistry, and may be grouped into a dozen or more categories.

The practice of dentistry has not attained perfection. There is no dead level of perfection, and it is well that this is so, for the constant urge of progress is always an abiding stimulus to advancement. Important discoveries and improvements show that the evolution of dentistry has not been halted. As a health service, dentistry has never been more useful or widely appreciated. As a profession, it has never more earnestly and successfully striven to increase steadily in effectiveness.

Dentistry is a natural division of health service; it is a natural division of medicine.

For more than one hundred years dentistry, as a profession, has steadily improved. In the immediate past, the use of medical sciences in dentistry has made dental practice more scientific and effective. The use of medical sciences in dentistry, where they might be just as appropriately and effectively labeled "dental sciences," makes dental practice more scientific, and therefore more efficient. Medicine, in its most comprehensive meaning, includes the sciences and arts of health service in all aspects and in all relationships. In this generic sense, medicine includes not only conventional medical practice, but also dentistry, public education for the protection of health and for the prevention of disease, nursing, pharmacy and public health administration. All of these services are related to the human body and the maintenance, restoration or support of its function.

Recent graduates of a number of dental schools are receiving much more practical pharmacy in the dental curriculum. Dean Mickelsen, of the Pharmacy Department of North Pacific College, was one of the first to inject practical pharmacy training into the dental curriculum of that institution, and, in fact, he was the first to establish this training on the West Coast. Assistant Dean Schicks, of the Department of Pharmacy of Rutgers University, Newark, New Jersey, was responsible for similar training on the East Coast; and there are several other dental schools in the United States that are now providing this training.

I am sure that you are mindful of the contribution which dentistry has supplied both medicine and pharmacy.

In 1844, Dr. Horace Wells, a dentist of Hartford, Connecticut, discovered the use of nitrous oxide, or "laughing gas," as it was first popularly called. The use of ether was discovered by Dr. T. G. Morton, a dentist of Boston, Massachusetts, in 1846. The first operations performed under these anæsthetics were for the extraction of teeth.

The dental profession has been instrumental in doing a great deal of research regarding diets in relation to dental caries, the research of which has brought a demand for large amounts of phosphorus-calcium combinations, also cod liver oil.

The American Dental Association has a council similar to that of the American Medical Association, which was organized to determine the worth of various drugs and preparations used in dentistry. It is organized so that men in the dental profession can take guess work out of their medicaments and dentifrices. A council determines the therapeutic and scientific usefulness of products manufactured for dental use. In this way, the American Dental Association is attempting to rid its ranks of unscrupulous manufacturers who have no regard for either science or truth. It is refusing to rent floor space at dental conventions to manufacturers of questionable products; its leading dental journals are refusing to sell advertising space in the journals to manufacturers whose products are fraudulent or worthless. In line with its campaign to inform its members of worthless products through the reports of its council, it has laid down rigid rules covering the admission of proprietary articles to the list of accepted non-official dental remedies.

Of course, a manufacturer may have a product which is useful and represents it truthfully, and may not have applied to the council for approval. Under such conditions, ask for information regarding the product from the Council on Dental Therapeutics. It would have much more professional significance if a pharmacist inquired of the council regarding the merits of a product offered for sale by the manufacturer, than to have a dentist write to the council asking for information about a product a pharmacist tried to sell him.

The council on Dental Therapeutics asks only that a product have some scientific or therapeutic reason for existence. The American Dental Association published a list of Accepted or Non-Accepted drugs and preparations. The reports of the council of Dental Therapeutics should be a source of information for the pharmacist. It is only through coöperation of the health service professions that a complete service may be rendered to the public.

A national organization of the proportions of the AMERICAN PHARMACEUTICAL ASSOCIATION has unlimited power in educational progress, in unification of licensing procedure, in improvement of the literature and encouragement of research, in classification of laws, and in all those tendencies and forces that converge to develop a unified profession that can best serve public welfare.

LIQUOR AROMATICUS ALKALINUS,		Methyl Salicylate	0.5 cc.
N. F. VI.		Tincture of Cudbear	20.0 cc.
ALKALINE AROMATIC SOLUTION.		Alcohol	50.0 cc.
		Water, a sufficient quantity,	
Potassium Bicarbonate	20.0 Gm.	To make	1000.00 cc.
Sodium Borate	20.0 Gm.	A standard mouth wash formula of an alkaline character.	
Thymol	0.5 Gm.		
Eucalyptol	1.0 cc.		