PRESIDENT'S ADDRESS

The American Association of Clinical Chemists is now in the seventh year of its existence, and this is our seventh annual meeting. Though I am not a numerologist, I can't refrain from talking a little about the magical number seven.

From ancient times on, seven has been regarded by many as having a mystical significance. There are the seven lean years and the seven fat years in the Bible, there is the seven-branched candlestick which Titus carried to Rome after the capture of Jerusalem; and Rome herself is built on Seven Hills. There are the Seven Wonders of the World and ships are sailing the Seven Seas. We hear about Snow White and the Seven Dwarfs, about seven-league boots, and about the seven national saints. A week has seven days . . . this list could be continued for quite a while.

As scientists we are curious, of course, to know the reason for the magic of seven. The best explanation seems to be that the mystical meaning of this number was strengthened and perhaps even suggested by its use in astrology, in which the seven planets played a prominent part. Our precursors, the alchemists, I might add, had seven metals corresponding to these seven planets—lead for Saturn, copper for Venus, iron for Mars, and so on.

Jaques in Shakespeare's "As You Like It" speaks of seven ages of man:

All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances;
And one man in his time plays many parts,
His acts being seven ages.

Jaques goes on to analyze these distinctive periods of growth from infancy to senescence. Applying this analysis of the American Association of Clinical Chemists, one can say that our association is now leaving infancy behind and is entering the second stage. One must admit that it is a promising child that is getting into the schoolboy age, bringing along not

Delivered at the Seventh Annual Meeting of the American Association of Clinical Chemists, September 15, 1955, Minneapolis, Minn.
only a book (Volume I of *Standard Methods*), but also the first volume of his own journal, *Clinical Chemistry*.

I wish there were on hand a seventh daughter of a seventh daughter of a seventh son, since these are known to have the rare gift of seeing into the future. But since I have not found one, we must make our own predictions without benefit of supernatural assistance.

First of all, I believe, it should not be too difficult to produce during the next year one, or possibly two, additional volumes of *Standard Methods in Clinical Chemistry*. Volume III is in the planning stage. It will include a number of toxicologic procedures and should be particularly welcome, since it will eliminate a last-minute rush to the library to scan the widely scattered toxicologic literature when the sudden need for an emergency test arises. Volume I of *Standard Methods* was published over 2 years ago, in 1953, and some of you feel that succeeding volumes are overdue. Nothing good, of course, can come of haste, but while I am opposed to pressure as much as anybody, I feel it is not unreasonable to schedule the appearance of new volumes as regular annual events. I hope that a volume dealing with ultra-micro methods will soon become a reality, especially since we have talent in our midst well qualified to write on this subject.

The use of ultra-micro methods is essential for the proper care of premature infants. Their value is not restricted, however, to this field of pediatrics. There are, for example, unexplored areas of the blood chemistry of small animals, which could only benefit from the availability of ultra-micro methods. All of us have encountered the dilemma of a battery of tests to be done with insufficient blood. Ultra-micro methods will be of great value in such instances.

Turning to our journal, *Clinical Chemistry*, I believe we can be optimistic about its future. The Board of Editors have stated as their objectives: "to help provide answers to the many problems facing those engaged in clinical chemistry; to create and maintain standards of scientific research and writing that will reflect honorably upon our profession; and to provide a continuing forum for discussion of the scientific, technical, and professional problems of all members of our profession." In looking over Volume 1, one can perceive the effort expended by the Board of Editors in the realization of these objectives. It should be pointed out, however, that this is your journal and that all of us must feel responsible for it and participate in it, each to the best of his ability.

There are many other activities and responsibilities of the American Association of Clinical Chemists which could be covered in this annual address. I will restrict myself, however, to a few words about only one
other subject—the relationship between the profession of clinical chemistry and the medical profession.

Gone is the time when the medicine man went out into the moonlit night to collect rare herbs and prepared mysterious concoctions for the treatment of his patients. Drugs now come in little packages from the pharmacist's shelf and the practicing physician would not dream of retiring to his laboratory to synthesize a batch of acetylsalicylic acid for tomorrow's headaches. He gladly turns this task over to the pharmaceutical chemists, confident that the bottle bought at the pharmacy will contain aspirin if so labeled. The physician welcomes the help and assistance given by the pharmaceutical chemist. He certainly does not claim that the preparation of drugs for the treatment of disease constitutes the practice of medicine. This claim is not made, despite the fact that the material prepared by the pharmaceutical chemist is introduced into the system of a living human being.

Turning now to the clinical chemist, we all know, of course, that he does not prepare materials to be given to a patient orally, subcutaneously, intramuscularly, or intravenously. The clinical chemist is concerned with the analysis of material coming out of the patient no longer part of his living system, and not with the preparation of substances going in. Let me add hastily that in my 20 years of close contact with the medical profession I have never met an individual who has even pondered the possibility that the task performed by the clinical chemist might be construed as constituting the practice of medicine.

The last century has seen an enormous development in all fields of science, and it is, unfortunately, not possible any more for any one man to master all disciplines equally well. We are in a period of specialization and the united efforts of many individuals in many fields are needed to render the best possible service in any area of our complex civilization. This includes services to the patient. To ensure best medical care, it is essential that internists, surgeons, bacteriologists, radiologists, pathologists, clinical chemists, and many others cooperate and contribute their part. The problems of public health are too serious a matter to tolerate quibbling with self-appointed little demigods about ill-advised monopolistic tendencies. What matters is the welfare of the patient, and each of the various specialists participating in the attack on a medical problem must contribute his services in that segment of endeavor in which by virtue of his training and his experience he is qualified to work. If his training has been in chemistry and if he has learned to carry out analytical determinations on body fluids accurately and reliably, he is a clinical chemist. One becomes a clinical chemist through years of study and
through additional years of practical training. One does not become a clinical chemist by purchasing a book on laboratory methods or because one can collect and apply analytical data for the solution of a medical problem. A course in general biochemistry is not sufficient preparation for the practice of clinical chemistry. I took a course once in general surgery, which was duly credited. Nevertheless, I am not obsessed by the delusion that I am qualified to perform even the simplest surgical procedure. Let me repeat that best medical care requires the cooperation of many specialists, each serving in his field of training.

In the complex society in which we live, it is necessary to have legislation designed to protect the public welfare. An old German proverb says: "Schuster bleibt bei deinen Leisten," and if the cobbler doesn't agree to stay with his lasts, one might have to regulate his activities in the public interest through laws and legislation. Applying this thought to clinical chemistry, one could visualize legislation restricting the practice of clinical chemistry to those qualified by training and experience to practice it. A signature on a laboratory report, for example, certifying that a serum calcium concentration reported is a true and reliable value, should be the signature of a clinical chemist who is responsible for the result. A rubber-stamp impression of the name of somebody unfamiliar with the determination of calcium is also visible, but it is worthless as far as responsibility in a legal sense is concerned. I have heard of places where the clinical chemist is embarrassed while carrying out his professional duties by the existence of anachronistic legislation. We all know that we are not living in Utopia and it is hardly worthwhile, I believe, to waste words on the remnants of such medieval ignorance. When Faust reflected upon the modes of human endeavor, he came to the conclusion that it wasn't words but work and accomplishment that made a man's life worthwhile.

In this spirit the clinical chemist can look into the future with confidence. He must show again and again in his daily contacts with the medical profession that he is doing his share through accurate and reliable work, as a member of a team united in efforts to help the patient. With such an attitude of service and devotion, recognition is inevitable. Among the seven gifts of the spirit, there are three which are of particular value—knowledge, wisdom, and understanding. You must have a thorough knowledge of your field, so that your services are truly valuable. You must acquire wisdom, so that you can see beyond the walls of your laboratory and become a constructive element in our culture. Finally you must have an understanding of human nature, since such an understanding is absolutely essential to establish a true spirit of cooperation.

Otto Schales