

## Editorial

To capture emerging trends in the pharmaceutical sciences presents a tremendous challenge. The complexity of the design, production and application of drugs is staggering; the research, ranging from fundamental to applied, typically resides at the interface between several biological/biomedical and chemical/physical disciplines. With PHARMACEUTICAL RESEARCH we are eager to meet this challenge.

The pharmaceutical sciences are a rather young discipline with early roots in the scientific revolution of the 16th and 17th century that followed the renaissance period. Some roots can be traced back to the Swiss physician-chemist Paracelsus (1493–1541 A.D.) who first considered the body as a chemical laboratory. His ideas inspired generations of scientists who later would be recognized as medicinal chemists; he stated that "it is not the task of alchemy to make gold, to make silver, but to make medicines". Among those who contributed the milestones that mark the path to modern drug therapy we acknowledge Withering (controlled use of digitalis), Sertürner (isolation of morphine), Caventou and Pelletier (quinine), von Behring (antitoxins), Ritsert (benzocaine), Fourneau (antihistamines), Ehrlich (principal founder of "chemotherapy", salvarsan), Banting and Best (insulin), Butenandt (steroid hormones), Domangk (prontosil, the progenitor of the sulfonamides) and Fleming (penicillin). Physicians and pharmacists, chemists and biochemists, physiologists, microbiologists and many others have contributed seminal ideas that have profoundly changed therapy, extended the life-span and improved the quality of life. Yet, many diseases remain refractory to therapy, and many drugs impose severe risks upon the patient. Much more work needs to be done.

Although the pharmaceutical sciences cover many disciplines, scientific pharmaceutical journals have appeared rather recently. J. B. Trommsdorff's *Journal der Pharmacie* (1793) is generally considered to represent the first scientific pharmaceutical journal. Important other publications followed, such as the British Pharmaceutical Society's *Phar-*

*maceutical Journal* in 1841, which later changed its name to the current *Journal of Pharmacy and Pharmacology*. The current *Journal of Pharmaceutical Sciences* stems from a 1940 scientific edition of the *American Journal of Pharmacy*, founded in 1835. With PHARMACEUTICAL RESEARCH we hope to build on the tradition and enlarge the scope of scientific pharmaceutical periodicals.

I wish to address one more important point. In view of the recent advances of our understanding of the disease processes at the molecular level, do we not stand at the beginning of the area of "rational drug design"? Should we not train a new breed of pharmaceutical scientists who can take the lead in the discovery and application of new drugs? Let me first caution you against an implied bias in the word "rational", since throughout the history of therapy there has been no incidence of "irrational" drug design. The discovery of new drugs always followed a logic that was based on the accumulated knowledge at that time. For example the time was right for chemotherapy, although the discovery of individual active agents was mostly serendipitous. Therefore the widely used term "rational drug design" must have a distinct meaning that derives from the current status of our scientific knowledge, *i. e.*, the systematic prediction, on the basis of molecular disease processes, of chemical structures that lead to clinically useful drugs. With this definition it seems probable that we stand at the beginning of "rational drug design". It would be most satisfying if PHARMACEUTICAL RESEARCH provides a forum for such new horizons that may arise from a variety of disciplines.

Finally, let me thank the many people who have contributed to the successful start of PHARMACEUTICAL RESEARCH, the publishers, the editorial advisors, the coeditors, and last but not least the many authors who have submitted research articles and reviews. My special appreciation goes to the referees who have assisted the editors and the authors with their constructive critique and have set a standard of quality for PHARMACEUTICAL RESEARCH.