An Era of Nutritional Growth and Maturation

Highlights of The Journal of Nutrition during the
Editorship of George R. Cowgill, 1939–1959

WILLARD A. KREHL

INTRODUCTION

Dr. Elmer V. McCollum was President of the American Institute of Nutrition when Dr. John R. Murlin unexpectedly announced his retirement as Editor of The Journal of Nutrition at the annual spring meeting of the American Institute of Nutrition, April 27, 1939. This resignation, coming as a surprise, did not permit time for the election of a new editor at the meeting. Instead an election procedure was developed for selection which led to the appointment of Dr. George R. Cowgill as Editor effective July 1, 1939. Dr. Cowgill had been a member of the Editorial Board of The Journal of Nutrition; he was also active in nutrition research and quite knowledgeable of the affairs of the American Institute of Nutrition. His election to the editorship was fitting. He also placed The Journal in the midst of the Lafayette B. Mendell tradition at Yale, which served as a focal point for the science of nutrition in the early developmental years. Yale University and the Department of Physiological Chemistry, of which Dr. Cowgill was a key member, provided a secure home for The Journal of Nutrition, and for many years provided indirect support to The Journal in many ways. Often unnoticed are the significant contributions that our academic institutions provide by the way of editorial offices along with much of the associated indirect costs. I am sure that Yale in those days welcomed the opportunity to provide an editorial home for such a prestigious publication as The Journal of Nutrition and the distinction that it brought to one of its distinguished teachers. All in all, the marriage of The Journal of Nutrition, Cowgill and Yale proved to be a fortuitous development extending over the next twenty years.

Just where was the science of nutrition in 1939? A glimpse of this is given by Dr. E. V. McCollum in his History of Nutrition (1957). Writing about the end of an era and new horizons, he states that “aside from the difficulty of bringing into proper perspective the nutrition investigations of the past fifteen years, it seems logical to close this history of ideas with the year 1940. Essentially that year marks the achievement of the primary objectives set by pioneers in this field of study. They sought to discover what in terms of chemical substances constituted an adequate diet for man and domestic animals, and that purpose was realized.” McCollum further noted that “an adequate diet must provide, in appropriate amounts, forty or more specific chemical substances identified as amino acids, vitamins, fatty acids, carbohydrates, and inorganic elements. With the exception of folic acid and vitamin B₁₂ by 1940 these have been identified, isolated and characterized chemically.” Did this milestone year of 1940 then represent a beginning of the end to the science of nutrition? We now know, of course, that this simply represented the end of the beginning which has now taken us through nearly four decades more of continuously productive research in the science of nutrition and has expanded the horizons of our knowledge regarding the role of nutrients, functioning at the molecular level within the cell. Our knowledge of the nutritional

1 Professor and Chairman—Department Community Health and Preventive Medicine, Jefferson Medical College, Philadelphia, Pennsylvania 19107.
and biochemical process at the cellular level now opens up new vistas for the application of the accumulated knowledge of nutrition to the benefit of mankind and to utilize nutrition more aggressively and appropriately both in the prevention of disease and in the clinical management of a host of medical problems. This process will continue.

Reflections on the Editor and Editorship

An editor is defined "as a person having managerial and sometimes policy-making responsibility for the editorial part of a publishing firm or of a newspaper, magazine or the like. Among the duties of an editor are to collect, prepare and arrange materials for publication and to revise or correct a manuscript." It has been said, "The work of a good editor, like the work of a good teacher, does not reveal itself directly; it is reflected in the accomplishment of others. A good editor is generous, sensitive, tactful, modest, patient and imaginative—he must be unfailingly tuned in." An editor must not develop the delusion that he is writing the writer's work and above all, he must practice the art of anonymity. A good editor derives a particular form of enjoyment from helping other people by bringing their writing to the best possible level of clarity and perfection. Furthermore, an editor who does his job particularly well may in fact find it difficult to explain to others just exactly what it is that he does.

It was my good fortune to appear on the scene at Yale in the Nutrition Division of the Department of Physiological Chemistry, with Dr. George R. Cowgill, July 1, 1946. Almost from the beginning I was indoctrinated into some of the mysteries and techniques of editorship. Dr. Cowgill, with consummate patience and great detail, reviewed the process of publishing a manuscript in The Journal of Nutrition. I must say I was impressed! I was soon to learn the joys of having a paper accepted and also the agonies of rejection, as some of my own research crossed the path of the Editor. It became obvious that Dr. Cowgill, as Editor, functioned without bias or favoritism, but rather worked with all authors to the utmost to finalize a manuscript that was acceptable and of which both the Editor and the author would be justifiably proud. I soon learned to contribute to reviewing incoming manuscripts and identifying the best reviewers for a particular paper. I also learned that reviewers have their own idiosyncrasies, and who sometimes plagued, but most often pleased the Editor. I enjoyed my unofficial apprenticeship as an editorial assistant and felt quite honored, from time to time, when I had an opportunity to fill in for brief periods for Dr. Cowgill. Naturally, I did not exercise the editorial responsibility of final decision making, but would contribute my observations and recommendations with other reviewers, for Dr. Cowgill.

Dr. Cowgill practiced the fine art of writing rejections in a scholarly, gentlemanly, and kindly way; most often with a good word of encouragement to keep working in a promising field of research and not become discouraged. I recall his view that the major reasons for rejection were often related to expansive over interpretations that were unjustified by the experimental data.

Perhaps the most vivid recollection that I have regarding Dr. Cowgill's editorship was the time and painstaking effort that he expended to improve a manuscript, particularly in making it more lucid in the presentation of data. Dr. Cowgill had a great knack for the tabular presentation of information or data, and for conservation of space. Space limitations then, as always, presented a major problem for every editor.

Another enjoyable learning experience related to manuscript conferences with Dr. Cowgill and Dr. Rebecca Hubbell, a most valued editorial assistant. Not uncommonly, manuscript conferences would lead to interesting debates and sometimes even heated arguments regarding the pros and cons of reviewers' editorial remarks, the Editor's opinions, and Dr. Hubbell's con-
cerns about manuscript content and mode of presentation in the course of reaching the Editor's decisions. Naturally, the Editor had the final word, but always exercised it in consideration of the comments and recommendations of other reviewers, as well as those of the editorial assistant.

One of the great stimulations and rewards of editorship for Dr. Cowgill was observing the new developments and progress being made in the continuing development of young, creative and innovative investigators. For Dr. Cowgill, it was gratifying to see the growth of the Science of Nutrition that he loved so well.

Dr. George R. Cowgill wore the mantle of editorship with dignity, meticulous care, kindly guidance and scholarly leadership. The Journal of Nutrition gained in scientific stature during his editorship and documented by hundreds of excellent papers the progress in the Science of Nutrition during the twenty years of his editorship.

The Advancement of Nutrition Research—1939–1959

Research can advance only as fast as experimental technology is developed and applied, particularly in the area of methodology. This is certainly true of the Science of Nutrition!

The development and application of synthetic diets, purified mineral salts and crystalline vitamins substantially enhanced research study of a host of animals and their extension to studies of the nutritional status of man. The availability of purified amino acids further provided the opportunity to enhance our knowledge of the qualitative and quantitative amino acid requirements of many species of animals, including humans.

The observation that microorganisms, particularly lactic acid bacilli, need specific nutrients opened a new field of investigation, utilizing microorganisms as analytical tools to study the nutrient content of foods, including fresh and processed foods from all parts of the world. The application of microbiological assays was particularly useful in the development of knowledge of folic acid and vitamin B12. These techniques also enabled the evaluation of the effects of nutrient deficiencies much more rapidly than with the traditional research methods based on growth and development of experimental animal species.

The clinical chemist's contributions were notable and greatly enhanced our knowledge of the nutrient content of animal tissues, blood and urine, with the development and evolution of chemical assays that could be applied to very small samples. For studies in human nutrition, the progress of research was greatly dependent upon our being able to measure things, sometimes in extremely micro-amounts.

The development of the many physical chemical tools, such as the spectrophotometer and all of its ramifications, further added to the nutritionist's ability to cope with the mysteries of nutrient analysis. The blending of the competencies and tools afforded by the microbiologist, the clinical chemist, the organic chemist, and the physical chemist, provided more sophisticated research approaches to quantify more accurately the nutritional needs of animals and man. This chain of developments and applications is recorded in publications extending over this twenty year era in The Journal of Nutrition.

The use of highly purified, chemically defined diets permitted in the years from 1939 onward demonstration of the nutritional essentiality of many trace elements, including molybdenum, vanadium, aluminum, zinc, manganese, copper, selenium, arsenic, cobalt, fluorine and iodine. It is of interest, that the explosion of nutritional research related to the trace minerals in recent years had its origins early in the 1939–1959 era.

The Impact of War on Nutrition Research

The establishment of the Nutrition Foundation in 1941 with the leadership of Dr. Charles Glen King stimulated new research findings in many laboratories supported by
the Nutrition Foundation. The leadership of the Foundation realized that "if all that we know about nutrition were applied to modern society, the result would be an enormous improvement in public health." Fruition of this prediction was made manifest in the development of food enrichment, which probably represents one of the most significant public health measures enacted in this century.

During the World War II years, extraordinary efforts were made in a number of laboratories to obtain information on the effects of cooking and processing losses on the nutritive value of foods and the changing nutritional requirements under stress. Extensive studies were conducted on the nutritional quality of food rations that had been developed by the Armed Forces Quartermaster Corps. The shocking physical status of draftees, showing evidence of present or past malnutrition, alerted the country to the importance of improving nutritional status through improvement of our food supplies. The establishment of The Food and Nutrition Board of the National Research Council, organized in 1940, led to major contributions with the development of recommended dietary allowances for nutrients known to be required by man.

SUMMARY AND CONCLUSION

The period of 1939 to 1959 proved to be a prolific era of growth and maturation for the Science of Nutrition, documented by the hundreds of nutrition scientists who contributed the thousands of pages of published manuscripts in the 49 volumes of The Journal appearing during this period. The challenge of World War II exerted a tremendous impact both on the nutrition scientific community, as well as on the public in general and brought to a very high level an awareness of the importance of food and nutrition in the maintenance of health and the management of disease. An increasing emphasis on nutrition education and research was evident in academic institutions throughout the country. Increasing numbers of young men and women became interested in the science of nutrition and responded to the opportunities that it provided to learn more about the role of food and nutrition.

George Cowgill ended his 20 year Editorship in 1959. In the Proceedings of the 23rd Annual Meeting of the American Institute of Nutrition (4) there is a recorded resolution honoring Dr. George R. Cowgill, Editor.

“The American Institute of Nutrition wishes to express its great appreciation to Dr. George R. Cowgill, Editor of The Journal of Nutrition for the past twenty years. The members of the society are indebted to Dr. Cowgill for his great contributions throughout these twenty years, during which he edited 49 volumes of The Journal. His patience, meticulous care, kindly guidance and scholarly leadership have been a major influence within our society. For these and more, we are deeply gratified.”

A note of appreciation was unanimously approved, expressing the society's sincere appreciation to Dr. Rebecca Hubbell for her long and excellent services as Editorial Assistant to Dr. Cowgill.

It was noted that during the Editorship of Dr. Cowgill, 66 society members had served on the Editorial Board and appreciation was also expressed to them.

A peer review journal, such as The Journal of Nutrition, reflects the progress of a science and attempts to present the truth based on the level of knowledge at any one time. In the words of Aristotle, "The search for truth is in one way hard and in another way easy, for it is evident that no one can master it fully, nor miss it wholly. But each adds a little to our knowledge of nature and from all the facts assembled there arises a certain grandeur." Such it is with the recorded history of the Science of Nutrition, as published in The Journal of Nutrition, 1939–1959, and before and beyond.
AIN HISTORY

BIBLIOGRAPHY

2. A History of Nutrition, E. V. McCollum
   Houghton-Mifflin Company, Boston, 1957
   The Riverside Press, Cambridge, Massachusetts
3. A Good Idea—The History of the Nutrition Foundation
   Charles Glen King
   The Nutrition Foundation
   New York and Washington
   489