Wallace Fenn and the Journal of Applied Physiology

ARThUR OTIS
Department of Physiology, University of Florida College of Medicine,
Gainesville, Florida 32610-0001

BEFORE 1948, the American Physiological Society (APS) sponsored only two publications: the American Journal of Physiology and Physiological Reviews. I first became aware that a third was being considered when Wallace Fenn casually mentioned it to some of us in the Physiology Department at Rochester. Fenn was the President of the Society at the time, so I assumed that he had something to do with the plan for a new publication.

However, Fenn’s name is not mentioned in the earliest documentary source I have as to the origin of the Journal of Applied Physiology. It is a “Report on the Poll of Opinion about the Need for a New Journal Devoted to the Physiology of Human Activity” from a group that met at the University of Minnesota in January, 1947, to discuss “the need for a journal of high standard for the broad field of human physiology.” The members of the group were N. Alpert, W. B. Bean, H. Boorsook, E. W. Brown, J. Brosek, E. S. Goodhart, R. N. Kark, G. Keighley, A. Keys, E. Simonson, and M. B. Visscher. One reason for the need for a new journal was the large amount of material that had accumulated during the years of World War II, when much government-supported research was classified and could not be published. Now that most of this work was declassified, a deluge of manuscripts submitted for publication was anticipated. Most such papers would, in one way or another, be expected to deal with “applied physiology.”

To test the opinion of the group that a new journal was needed, a questionnaire was sent to some 140 individuals known or thought to have worked on applied problems. Of the 85 who responded, only 3 felt that there was no need for such a journal against 43 who felt a great need. The questionnaire also asked for suggestions for a name for the proposed new journal. Of 67 responses, there were 5 standouts:

- Journal of Applied Physiology 18
- Journal of Human Physiology 12
- Environmental Physiology 9
- Work (or Exercise) Physiology 7
- Physiology of (Journal of Human) Adaptation 4

The proposed Journal of Applied Physiology was approved by Council and created by the Board of Publication Trustees: A. C. Ivy, Chairman, Frank C. Mann, and R. F. Pitts. This Board had ultimate control of all publications of the Society. The membership of the first Editorial Board of the JAP was as follows: Edward F. Adolph, Robert A. Cleghorn, D. Bruce Dill, Wallace O. Fenn, Chalmers H. Gemmill, Frances Hellebrandt, Hudson Hoagland, Robert E. Johnson, Eugene M. Landis, Ernst Simonson, Arthur H. Steinhaus, and Edward J. Van Liere. Milton O. Lee, the Executive Secretary of the Society, was the Managing Editor.

Volume 1, no. 1, appeared in July, 1948. The following quotation from its Foreword introduces the new Journal and defines its intended scope:

In connection with this Journal the term ‘applied’ will broadly connote human physiology, with particular emphasis on man in relation to his environment and the adaptations his physiologic mechanisms show in response to the many and varied stresses imposed by man’s environments. The terms ‘stress’ and ‘environment’ will also be interpreted broadly to include work, exercise, industrial, military, climatic, nutritional and even social and economic factors, as well as those that seem, in the shadow of our present lack of knowledge at least, to arise from within the body itself. For example, physiological aspects of heredity, of aging and the aging process, and of metabolism will come within the scope of this Journal. At the present time the stresses imposed upon man’s mechanisms for homeostasis by climate,

Fig. 1. Wallace O. Fenn (1893–1971), President of the American Physiological Society, 1946–1948.
altitude, temperature and work are receiving much intense study by physiologists and the need of another medium for the publication of such studies is urgent. Research emphasis, however, may shift in the future and the scope of the Journal of Applied Physiology has purposely been set along broad lines to accommodate wide shifts in interest. The term ‘physiology’ will be interpreted rather strictly in delimiting the field of the journal.

Today, the scope of the Journal remains broad, and authors are invited to submit original research and theoretical articles, invited reviews, invited editorials, and commentaries on interesting or controversial topics. Subject matter is somewhat more closely defined than it was originally.

The initial volume of the JAP comprised 12 monthly issues: July, 1948, through June, 1949, and contained 84 papers. Now two volumes are published per year, and one volume typically contains 280–300 papers. In 1948, the Editorial Board of the JAP had 12 members and a Managing Editor. The Journal now has an Editor, a Consulting Editor, 14 Associate Editors, an Editorial Board with 131 members, and a statistical consultant.

Wallace Fenn often showed a vision of the future, but, if he were to return, I think that even he might be a little amazed to find that the Journal of Applied Physiology now has a clone, the Journal of Applied Physiology Online. He might also be somewhat bewildered that its address is http://www.jap.org. I suspect, too, however, that he would avail himself of a computer and be logging on to this address as well as to mfrank@aps.faseb.org and subscrip@aps.faseb.org. I am sure his input would be welcome.

Wallace Fenn contributed much to our understanding of basic physiological processes while always, a pragmatic New Englander, keeping in mind possible applications to practical situations. Several of his early publications dealt with “effects of electrolytes on gelatin and their biological significance.” His PhD was in plant physiology. During service in the Sanitary Corps of the US Army during World War I, he was a co-author of “A study of the action of acid and alkali on gluten” (J. Gen. Physiol. 1: 459–472, 1918–19). In this paper, he stated that “This research was undertaken under the pressure of wartime practical interests, for the purpose of explaining the technology of bread making.” After the war, he served as an Instructor of Applied Physiology at Harvard Medical School.

Although Wallace Fenn seems to have received no particular credit for the founding of the JAP, I believe he may have had more to do with it than is apparent. He was a leader, although not one to give orders. He made subtle suggestions. As Chairman of the Physiology Department at Rochester, he rarely called formal department meetings, never as far as I can recall, ones with a formal agenda or recorded minutes. His method of directing research was to avoid a rigid protocol. Sometimes, he would gather us around a blackboard to discuss his latest ideas. At other times, he would stick his head through the door of an office or laboratory and ask us what we would think of trying this or that, and then he would walk away before we could get our wits together to make a response. Usually, we gave his ideas a try. He never scolded us if we didn’t follow through, but sometimes, at a later date, he would repeat his suggestion, and we would pursue it, often modifying it along the way. In the end, it was at times unclear whose ideas were whose, because we worked closely and informally together.

I can well imagine that the germ of the JAP came into being with Wallace Fenn quietly saying one-on-one to a few members of the APS, “What would you think of a new publication devoted to the more applied aspects of physiology, such as those many of us worked on during the War years?” Thus he may have put a “bee in the bonnet” of a few individuals who developed the notion and who may have honestly believed it was their idea in the first place.

However the JAP came about, Wallace was obviously pleased with its inauguration. This was evident in his address as retiring President at the first Fall Meeting of the APS, in September, 1948, when he said, “One sign came about, Wallace was obviously pleased with its inauguration. This was evident in his address as retiring President at the first Fall Meeting of the APS, in September, 1948, when he said, “One sign of the times is the founding of the Journal of Applied Physiology.”

Fenn’s memorable talk (Physiology on horseback. Am. J. Physiol. 159: 551–555, 1949) is still worth reading today because it is a classic that exemplifies his insight, imagination, wisdom, and sense of humor. All who heard this talk will certainly remember his using the “fable of the cats” as an analogy of the relationship between basic and applied research.

A man called up a veterinarian about his sick cat, and described its symptoms. The veterinarian understood calf for cat and prescribed a pint of castor oil which was duly administered (more or less). Some days later the veterinarian met his client and inquired about the welfare of the patient. The man threw up his hands in despair and said that the cat had had a hard time and had enlisted the assistance of three other cats. One was digging holes for him, the second was covering them up and the third was way out in front opening up new territory. We probably need and should have two applied researchers for every one in basic research but we cannot do without the latter, the fellows who are out in front opening up new fields, developing new interpretations, new products, new ideas, and new methods.

Melinda Lowy, Executive Assistant of the American Physiological Society, kindly supplied pertinent entries from 1946 and 1947 Council minutes.

Address for reprint requests: A. Otis, Dept. of Physiology, Univ. of Florida College of Medicine, JHMHC, Box J-274, Gainesville, FL 32610-0001.