Wallace Fenn and the Journal of Applied Physiology

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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that had accumulated during the years of World War II, when much government-supported research was classified and could not be published.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
- Journal of Human Physiology
- Environmental Physiology
- Work (or Exercise) Physiology
- Physiology of (Journal of Human) Adaptation

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 J AP 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,
altitude, temperature and work are receiving much
intensive study by physiologists and the need of an-
other 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 Physi-
ology has purposely been set along broad lines to ac-
commodate 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 top-
ics. 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 bewil-
dered 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 understand-
ing 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 gela-
tin 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 coauthor
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 Physiolog-
ology 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 Physi-
ology 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 thought 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, “Onesign
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 exempli-
ifies 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 ap-
plied 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 interpreta-
tions, 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.

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