

Marty Gibbs's 30 Years at the Helm of *Plant Physiology*

Dr. Martin Gibbs died at his home on July 24, 2006, in Lexington, MA, at the age of 83. We three succeed Marty as chief editors of *Plant Physiology*, a position he held from 1963 to 1992. We offer this brief accounting in celebration of his professional career.

In the fall of 1940, Marty began his undergraduate studies at the Philadelphia College of Pharmacy and Science, concentrating in chemistry. According to his own account, it was not until his third and final year that he took an elective course on pharmacognosy and discovered biology (Gibbs, 1999). Two inspiring professors, Edmund MacLaughlin and Theodor P. Haas, cemented his interest in biology, but especially plant biology. To pursue graduate studies, he accepted a teaching fellowship in the Department of Chemistry at the University of Illinois, but his desire to major in the application of chemistry to botany was not supported by the department at the time so he transferred to Botany. Under the guidance of F. Lyle Wynd and Harry Fuller, he completed his doctoral degree in 1947, working on the chemical changes occurring during the growth of diploid and tetraploid forms of *Datura stramonium*. Nearly 50 years later, in 1996, the University of Illinois honored Marty with the Liberal Arts and Sciences Alumni Achievement award.

At the suggestion of Kenneth Thimann who was at the time at Cal Tech, Marty applied for a position at the newly established Atomic Energy Commission's Brookhaven National Laboratory. Using radioactive ^{14}C made at Oak Ridge National Laboratory, he was initially responsible for synthesizing radiocarbon-labeled simple sugars from *Canna indica*, a sucrose accumulator. He went on to develop these compounds as tools to study metabolism. Collaborating with I.C. Gunsalus, Marty quickly adapted new discoveries about the metabolism of *Leuconostoc mesenteroides* to identify those individual carbon atoms of glucose that were radiolabeled. The resolution of individual sugar atoms led to the surprising discovery of an asymmetric labeling of carbon atoms in hexoses during photosynthesis ^{14}C fixation, which became known as the "Gibbs Effect." The isotope work drew a host of other biologists, including future winners of the Nobel Prize, to Brookhaven to learn about ^{14}C . While at Brookhaven he also delineated the pentose phosphate pathway of plants and the NADPH-dependent reduction of glyceraldehyde-3-phosphate in photosynthesis.

In 1957, he left Brookhaven for a faculty position in the College of Agriculture at Cornell. He remained at Cornell until 1964, when he accepted a position at Brandeis University. At both Cornell and Brandeis universities, his pioneering work on isolated chloroplasts focused on the induction process, photochem-



istry, and CO_2 assimilation. He also returned to an unresolved problem in certain algae of how hydrogen is produced and combined with oxygen to reduce CO_2 in the dark. These studies led him into chloroplast respiration and to the discovery of new pathways of carbon and electron flow. Marty's distinguished, if not at times controversial, research career led to numerous awards, including election to the American Academy of Arts and Sciences in 1972 and the National Academy of Sciences in 1974.

In 1963, at the age of 41, Marty became Editor-in-Chief of *Plant Physiology*. He was the fifth editor since the journal's inception in 1926 under founding Editor Charles A. Shull (Editor 1926–1945). Allan Brown, Editor from 1958 to 1962, wrote of his successor: "It is a pleasure for me to acknowledge formally the transfer of editorial responsibilities to my successor, Dr. Martin Gibbs of the Biochemistry Department, Cornell University. ... The selection of Marty Gibbs as our next editor was the responsibility of the editorial board and the president (2 presidents, in fact, since the selection process overlapped a change in ASPP officers). ... I heartily approve the wise choice that was made. I shall be delighted to turn over the editorial responsibilities to an able and respected colleague" (Hanson, 1989).

As you might expect, a great deal of what makes *Plant Physiology* the journal it is today occurred during Marty's 30-year watch:

- Increases in published issues per year (six versus 12), volumes (one versus three), and number of pages (1,000 versus 4,800).
- Increases in submissions (200 versus 1,300) and percentage of declined manuscripts (20% versus 35%).
- Appointment of Associate Editors and an expanded Editorial Board to accommodate the increases in submissions.

- Transfer of the redactory service from the editorial office to the printer.
- Transfer of production schedule, journal format, and reading of galley and page proofs from the Editor-in-Chief to the senior production editor, Melinda (Jody) Carlson. Prior to 1967 the Editor-in-Chief was also “managing editor” and was responsible for the editorial handling of manuscripts through review, decision, and revision. Bless you, Marty!
- A new look for the journal cover in 1988, departing from the familiar dull green background with black Times New Roman font to a bright green background with black-and-white Helvetica font.

In an era of major changes, ASPP started *The Plant Cell* in 1989, and in 1992 Marty handed over the reins of *Plant Physiology* to Maarten Chrispeels. Since that time *Plant Physiology* has been able to take full advantage of the foundation that Marty created for it. As plant physiology research became more sophisticated, this was reflected in the types of research papers that were published in the journal. During Marty’s tenure as Editor-in-Chief, there was an increase in articles on the application of biochemistry to plant research and on plant biochemistry itself—from less than 9% to 20%, reflecting the use of these emerging disciplines to study physiology. Marty can be credited for beginning a tradition of rigorous peer review that has grown and is a major reason for *Plant Physiology*’s continued growth in stature and in the

importance of the science that is published within its covers. Today *Plant Physiology* is the most cited journal in plant biology, with an incredible 39,766 total citations last year, and boasts an impact factor of 6.114. Along with *The Plant Cell*, it has led the way among plant journals in online publishing, use of color, and turnaround times from submission to decision and publication. Marty intended for *Plant Physiology* to be an international journal, and it has truly grown into that vision. Currently, approximately 70% of the papers published in the journal are from non-U.S. labs, and over a third of the Editorial Board members live and work abroad. *Plant Physiology* continues in this tradition of innovation and is now at the forefront of plant research journals with its new Open Access initiative, which is described in the second editorial of this issue.

Those who knew Marty understand that his legacy is complex, as it is for many of the larger-than-life figures of his era. However, there can be no doubt that Marty had a huge impact on *Plant Physiology* and that during the early years of his leadership he laid the foundation for *Plant Physiology* to become the top broadly based plant biology journal in the world, the journal to which others aspire.

LITERATURE CITED

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Maarten J. Chrispeels
Editor-in-Chief 1992–2000

Natasha V. Raikhel
Editor-in-Chief 2000–2005

Donald R. Ort
Editor-in-Chief 2005–