EDITORIAL

Plant Genomes

*The Plant Cell* publishes occasional Letters and Commentaries that we find thoughtful, provocative, and potentially interesting to a wide cross section of readers. These are subject to peer review and often go through one or more revisions, just as Perspective Essays do. Replies and further commentaries are welcome, subject to the same criteria and review as the initial contributions.

This month we present a brief Commentary from Scott Jackson, Steve Rounsley, and Michael Purugganan that raises important questions about the future of and justifications for sequencing whole plant genomes and invites debate and discussion by the plant biology community. The authors argue that the discussion should be guided by phylogenetic considerations, the realities and possibilities of new technologies, and the range of potential uses. The phylogenetic perspective seems particularly important, as can be seen by the tremendous impact on knowledge and research from comparisons among animal species, such as the human genome compared with that of mouse and chimpanzee, and comparisons among a dozen drosophilids. Almost unquestionably, the impact of comparative sequencing and analysis will also be huge in plant biology.

This raises the question of the role that *The Plant Cell* might play in fostering the development of comparative plant genomics and communicating its most important results. The days of descriptive single genome sequence publications are essentially over. As the possibility of sequencing two of more genomes at a time rises, the community’s expectations of publications will undoubtedly rise too. Publications of genome sequences will be expected to present truly global analyses and detailed comparisons with other genomes. And publications will be expected to be “full” stories, not merely first glimpses.

This exciting future is plainly encompassed within the scope and mission of *The Plant Cell*, and we intend to participate purposefully in and provide leadership to this developing field by establishing standards that fulfill our readers’ expectations for finding only the best in plant biology each time they open the journal. What should these standards be? First, of course, the new biology that is discovered must be novel, interesting, and important. In addition, it is essential that inferences drawn from the data be strong, and it is coming to be expected that inferences be validated by independent informatic or experimental approaches. Finally, readers of *The Plant Cell* will expect complete but concise explanation and discussion of the most interesting results of the authors’ analyses (summaries of more “pedestrian” results can be presented online). Sequences of the genomes of plant pathogens will be appropriate for *The Plant Cell* as long as there is significant emphasis on the organism’s pathogenesis to plants, as for any plant-microbe article.

For authors of genome sequence articles, a significant benefit from publishing in *The Plant Cell* is that there are no limits to prevent them from publishing a full story, whereas, unfortunately, severe limits are imposed by the magazines that have published most genome sequence articles to date. In *The Plant Cell*, authors are able to present all the information that is interesting and important for the broad readership of the journal. By policy, we do not “bury” important results as supplemental online material, nor do we limit thorough discussion as long as it is reasonable and appropriate. We believe we offer authors a unique opportunity to publish genome sequence articles of the highest possible quality and the greatest degree of completeness that will reach the broadest audience of plant and plant-microbe biologists. In addition to the prominent position and wide availability of the journal in the scientific community, our inexpensive Open Access option allows authors to make their article available immediately and freely to all scientists, something that most other high-impact journals do not offer.

We look forward to a long and fruitful partnership with whole-genome biologists, resulting in a series of landmark articles in plant biology.

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