Letters

State Microbes

The state of Wisconsin received considerable media publicity last spring when the Wisconsin Assembly voted to select a state microbe. Not surprisingly, the number one cheese-producing state, where Green Bay Packers fans call themselves “cheese heads,” chose *Lactococcus lactis*. This versatile bacterium is essential for making cheddar, Colby, and other Wisconsin cheese specialties.

What about other states? At Rutgers, the State University of New Jersey, we have considered a number of possible candidates for our own state microbe. *Streptomyces lipmanii* was named after Jacob Lipman, the founder of American soil microbiology and longtime New Jersey resident. *Streptomyces griseus*, producer of streptomycin, helped earn Selman Waksman a Nobel Prize. *Streptomyces fradiae* (named after Waksman’s mother) and *S. bobili* (named after Waksman’s wife) honor the role that women play in the careers of “great men.” Or perhaps members of the New Jersey state legislature in Trenton would prefer *Streptomyces novocaesareae*. (For those whose Latin is dimming—or would prefer nonexistent—this translates to “Streptomyces newjerseyi.”)

The publicity surrounding the Wisconsin microbe reminded J.W.B. of her year as ASM president in 1990–91. Not long before, California had adopted the banana slug as their state invertebrate. If slugs could get such good publicity, Joan figured it was time for ASM to bring similar fame to microbes. She envisioned winemaking states like California and New York choosing *Saccharomyces cerevisiae* and brewing states like Missouri (home of Anheuser-Busch) choosing *Saccharomyces carlsbergensis*. Mining states like Colorado might go for *Thiobacillus ferrooxidans* while soybean-growing states like Iowa might credit the nitrogen-fixing bacterium *Bradyrhizobium japonicum*. Illinois might honor *Penicillium chrysogenum*—a strain of this species was isolated from a moldy cantaloupe found in a Peoria market and is now the progenitor of high-yielding penicillin-producing strains used worldwide.

The brief campaign for state microbes interested members of the ASM Council Policy Committee and several important ASM members, who were quick to point out that some states were best known for unsavory microbes. For example, Louisiana had a historically important center for the treatment and study of Hansen’s disease at Carville, but it was unlikely that the state legislature would want to sponsor *Mycobacterium leprae*. Howard T. Ricketts gained fame for isolating *Rickettsia rickettsii* from the Bitterroot Valley in Montana, but did Montana want to be associated with Rocky Mountain spotted fever? Connecticut with Lyme disease? Pennsylvania with Legionnaires’ disease? Joan abandoned her campaign when former ASM President Al Balows said, “Let’s give *Neisseria gonorrohoeae* to Nevada.”

P. S. At the 2010 General Meeting in San Diego, Moselio Schaechter spoke in the president’s forum about extending the idea of state microbes to cities and suggested *Clostridium botulinum*, producer of Botox, for Los Angeles.

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Applied and Research Science

Science has evolved into two basic divisions, the applied and research sciences. Whereas instruction could be considered to be a third division, it is usually integral to both applied and research science, so I will address only the two.

Throughout my 35-year career, I have dealt mostly with applied science in the medical and industrial arenas, but I have engaged in research in those areas also. Through working in medical center and industrial laboratories, I have built a great wealth of firsthand knowledge of bacteriology, virology, and immunology. My coworkers and I helped physicists unveil the etiological agents behind many mysterious syndromes, and we discerned various patterns of human bacterial colonization and disease that trended with seasonal and social changes. However, I continue to regret that these constantly generated unique case studies and disease incidences go unpublished, thus skewing textbook records of true disease scenarios. But this is the nature of much applied science, where publication is a minimal consideration by those who are focused on accomplishing assignments directed towards immediate human benefit, such as curing illness or ensuring safe drinking water.

In research, I have enjoyed developing my own inquiries and the sense of accomplishment in unveiling new perspectives of the microbiological world. My published results are a record of this work, as well as a communication with the scientific world. What changes I have made have been small compared to my daily accomplishments in applied science, but I have shared those small discoveries for others to apply. I regret saying, I have found that scientists of both applied and research science often harbor prejudices against their counterparts, each ironically believing the other engages in boring, repetitive, or insignificant work. The truth or falsehood of this lies in the individual. Both fields provide ample opportunity for a fulfilling and productive career.

I believe the *Microbe* editors make a fair attempt at honoring both fields of occupation, but it is a little disappointing to see that most recognitions and awards are given to research scientists. Perhaps capitalism helps balance this by monetarily
rewarding those who excel in applied science.

Nevertheless, it is important that scientists of the applied field understand that the basis of their work ultimately comes from their research colleagues. The better the research, the more valid is its application. Similarly, scientists of the research field must understand that without an eventual application of their discoveries, no matter how promising they might seem, their work is simply esoteric or even inconsequential.

Scientists of both fields should maintain equivocal respect for the other. Together we create the complete sculpture, and as microbiologists, maybe a masterpiece.

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