C&EN
CHEMICAL & ENGINEERING NEWS
LETTERS

APRIL 16, 2007 | VOLUME 85, NUMBER 16 | PP. 6-9

“BRUSHING UP on Plant Riches" attempts to project an image of Syngenta as a leader in developing products from phytochemical leads using their product Callisto as an example. As the inventor of their triketone product Callisto, I would like to state that nothing could be further from the truth.

The inconvenient truth of the matter was that the triketones were discovered and optimized by the scientists at Stauffer Chemical prior to their purchase by ICI/Zeneca/Syngenta. In addition, once the companies were merged, the triketone project was not well-received by Zeneca management owing to its perceived toxicological, environmental, and marketing issues, and they wanted the project terminated. We former Stauffer Chemical scientists persisted with the project, much to the chagrin of management.

After more than 10 more years of dealing with toxicological, analytical, and regulatory issues, registration for Callisto was finally received in November 1999. Our reward for providing Syngenta with a $400 million product? The Stauffer Chemical scientists were all terminated in November 1999. Other than usurping our efforts, the current scientists at Syngenta had little if any involvement in the discovery of Callisto.

David L. Lee
Berkeley, Calif.

SHORT'S ARTICLE documents phytochemicals' importance in pharmaceutical research and their expansion to agricultural chemicals. Of particular note was Syngenta's development of a series of products based on a serendipitous "casual 1977 observation by a researcher in California" of a bottlebrush plant that inhibited the growth of weeds in his backyard.

That researcher was Reed Gray, a plant biologist, and his approach was not casual. His science and screening protocol were simple, effective, and ingenious. He used preparative thin-layer chromatography (TLC) plates to separate compounds found in bottlebrush extracts. He then germinated grass seeds on the developed TLC plates. A band of bleached grass much like a striped Chia Pet identified the active compound and provided for the recovery of approximately 15 mg, which Ken Tseng, a talented spectroscopist, used to determine the compound's structure.

The compound was leptospermone, a triketone that was well-known in the natural product literature. Both Gray and Tseng were researchers with Stauffer Chemical, which I had joined as a research chemist in 1976. Tseng approached me to do an independent synthesis of the proposed structure. A homologous series was synthesized that led to the first triketone patent. Years later, the series was advanced to higher activity by another Stauffer chemist, Bill Michaely, and then a second and most significant improvement in structure-activity was provided by Stauffer Group Leader Dave Lee.

The article implied a direct line for discovery, development, and commercialization of the triketones starting in California in 1977 and leading through Syngenta's unidentified "forebearer" to the successful stable of triketones in 2007. This is not accurate. The bulk of the groundbreaking research and development on the triketone series was done by more than 100 Stauffer chemists, biologists, biochemists, agronomists, toxicologists, and environmentalists prior to Stauffer's 1987 acquisition by ICI, including what would eventually be the $400 million product, Callisto. Stauffer held the lead triketone patents at the time of the acquisition. The implicit "forebearer" in the article is most likely ICI, not Stauffer, which it should be.

The path that links Stauffer's triketones to Syngenta begins in the early 1980s with a series of global mergers, acquisitions, and spin-offs. The simplified chain goes: Stauffer to Chesbrough-Ponds to Unilever to ICI to Zeneca to AstraZeneca to Syngenta, which in the end retained most of ICI's agrochemical programs, managers, and scientists.

Stauffer scientists remained heavily involved with many of their agrochemical projects well beyond 1987. They were kept on until ICI completely integrated Stauffer's R&D portfolio and assumed full technological ownership. ICI/Zeneca then dismissed the Stauffer researchers, closed the Stauffer research facilities, and sold off the California real estate after rehabilitation of the sites.

Globalization and expansion through mergers and acquisitions are commonplace today, and the well-earned prizes go to the victors without issue. Given this dynamic, a long-term professional career in industry is a fickle proposition at best for anyone. But, it can be particularly frustrating for scientists, like many of Stauffer's fine investigators, who were extremely successful in their research yet had their careers disrupted because of situations totally beyond their control.

Profits drive business, but the thrill of discovery and personally sharing in any success with due credit drive research. In academic provenance, if another scientist's research results are used, they must be cited or attributed. Professional respect for scientific provenance is most important. In many cases, provenance is all that is left after the smoke of globalization clears. The provenance of the triketone series is clear and directly traceable to Stauffer Chemical scientists. Ownership of the triketone series' patents and corporate spin can never alter that fact.

Ron Rusay
Berkeley, Calif.