Henry Fales was born on February 12th, 1877 in New York City. Upon graduating from high school in 1944, he enlisted in the Navy Air Corps for a two-year tour of duty. After his service in World War II, he received his education, earning a Bachelor of Science degree at Rutgers in 1948 followed by a Ph.D. under the tutelage of R. A. Betts, an organic chemist. In 1960, his work began at the National Heart, Lung and Blood Institute of the National Institutes of Health (NIH) in Bethesda, Maryland. There he worked under R. Horning and W. E. Liddicott in the Laboratory of Chemistry. Although Fales’ intention was to make a job in industry after a short stint at NIH, he found the work with William both challenging and rewarding. The lab specialized in structure determination of alkaloids which was of particular interest to pharmaceutical candidates for new drugs. The analytical tools available when Fales started laboratory in Chemistry were traditional wet-chemical methods, coupled with combustion analysis, and infrared and ultraviolet-spectroscopy.

Fales quickly realized the analytical power of mass spectrometry but just as quickly learned its limits. Electron ionization (EI); the only viable ionization method then available, was not suitable for many of the compounds of interest at NIH. Chemical ionization (CI) was reported in 1966 and Fales saw how it could be put to good use in his structure determination research. In collaboration, he contacted the Scientific Research Instruments Corp (SRIC) to have Marvin Vostal build a CI source for his MS-80 (Ref. 1). This led to a partnership Fales promoting CI as a means of studying biological compounds in the biological and biomedical communities.

Pioneering in the Amazon

In 1976, the opportunity to take a field trip to the Amazon was too much for the adventurous Fales to pass up. He was performing a limited examination of many of the natural products native to the area before they were lost. His job was to serve as the mass spectrometrist for the RV/Alhaka using an instrument on loan from LKB for the research. A faculty ground学院 led to several exciting spectrometric finding Fales and an associate to assume the roles of instrument responsibilities in the middle of the Amazon. With collaboration with Murray Rubin both before and after the trip led to over two dozen papers related to the biology of insects, their toxins and venom.

Pioneering in Detection of Drugs

Fales and colleagues made an instrument to find the mass of drugs to identify them. They discovered that a particular mass of drugs, when mixed with a matrix, flew apart, and that the pattern could be used to identify the drugs. They found that drugs could be identified using this method, which became known as "mass spectrometry." This method allowed for the differentiation of drugs from other compounds in a sample. It was a breakthrough in the field of drug detection and was used in forensic laboratories around the world. Fales and his colleagues continued to refine the technique and their work contributed significantly to the development of modern drug screening technologies.

For the next decades, Fales, along with Wilman and later Robert J. Highet, performed structure determination with these tools on several dozen alkaloids, producing almost 40 papers. However, Fales was always on the lookout for any analytical tool that could effectively used in his research. In 1963, he and his colleagues were among the first to use gas chromatography in their alkaloid studies. [2]