For the Love of Chemistry
Penned by Connie Hayes

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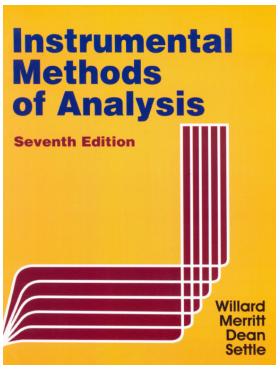
Colorimetry

During the organization of Ted Rains's publications, his first presentation of record (1955) was found on "Colorimetric Determination of Palladium with Alpha-Furildioxime" given at that year's ACS meeting and later published in Analytical Chemistry[1]. Dr. Rains was known for his knowledge of atomic spectroscopy, but was overlooked for his broader knowledge of analytical chemistry.

It was at Oak Ridge National Laboratory (ORNL) where he was fortunate to have been taught by some incredible chemists, most notably Drs. Hobard Willard, John Dean and his supervisor, Oscar Menis. At that time, many of the methods used to analyze for specific metal species, or anions of interest involved wet chemistry techniques. In 1959, Ted worked with Oscar Menis in a series of articles published at ORNL presenting data comparing a newer flame photometric method to the spectrophotometric method using a Beckman Model DU; from that point forward, his publications chart his research focused on atomic spectroscopy.



Ted Rains with his supervisor, Oscar Menis[2]

Here at High-Purity Standards, we tend to think of the products that we manufacture as designed for instrumental methods such as ICP-OES, ICP-MS, IC, GC, LC, etc. Well before ISO Guide 34 was published (1996), Ted Rains would insist that the best standards had to be analyzed via two "**different**" methods. He would point out that each analytical method comes with its own biases and limitations. Often, we would find Ted Rains in the lab working through investigations using colorimetric, titrimetric or gravimetric methods. Despite the fact that Dr. Rains was an expert in atomic spectroscopy, he was also comfortable with classical and wet chemistry methods. Clearly, his roots were never forgotten.

In approaching an investigation or study, we are frequently reminded that one method doesn't solve all problems or provide all of the answers. So, it is often beneficial to revisit our history to get an answer. Sometimes that takes the form of new relationships, even with older partners, to spark a new perspective and remind us of this truth that Ted Rains embraced.

High-Purity Standards has recently worked with our long-time partner, Environmental Express, in providing products for their rAPID-T Discrete Analyzer. This partnership caused us to look at some Certified Reference Materials in a different way and evaluate their applicability to a broad range of wet chemistry methods in addition to their use as analytical standards. We invite you to check out our website for these new uses for existing items. See https://highpuritystandards.com/products/categories/wet-chemistry-standards-and-reagents/.

1. Menis O., Rains, T., (Dec 1955), Colorimetric Determination of Palladium with Alpha-Furildioxime, *Analytical Chemistry*, Vol 27, page 1933.

2. Flame Photometry for Rare Earths: "It offers precision, speed, and reproducibility, handles liquids too, Oak Ridge scientist says", *Chemical and Engineering News*, (Nov. 16, 1959), Page 41.

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