

General Papers and Tutorial, Spring National ACS Meeting 2025

Mystery of the Coast Salish woolly dogs.

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Early European explorers to the Pacific Northwest commented that the native people kept flocks of fluffy, white dogs. They were compared to Pomeranians in appearance, although they were somewhat larger, and they were shorn at regular intervals throughout the year – not unlike sheep. Despite being a common sight in the 18th century, the practice of raising and keeping these dogs had almost disappeared by 1860, and the breed was considered extinct by the end of the 19th century. For context, European explorers brought diseases that devastated the native people throughout the 18th and 19th centuries, and the tribal populations were significantly reduced and sometimes totally wiped out. In addition, the “treaties” forced natives to give up many of their traditional practices, including keeping dogs and weaving. By the beginning of the 20th century, all that was left of the weaving tradition were a few grandmothers who had learned to weave as children, and who might talk about or pass on the tradition in secret to their own children and grandchildren. As a result of this cultural destruction, by the mid- to late-20th century, some researchers questioned whether dog fibers had actually been used to create blankets, and whether dog hair had been used in any significant way to produce blankets. Multiple Coast Salish blankets exist in museums worldwide, but it was very difficult to determine the fiber type using physical means. New scientific techniques in the late 20th and early 21st centuries have provided new ways to analyze the blankets. I will describe these scientific innovations and what new information they brought to solve the mystery of the Coast Salish woolly dogs.

Chemistry of the 18th Century, Spring National ACS Meeting 2025

Torbern Bergman (1735-1784): A life dedicated to science.

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One of the first truly outstanding Swedish chemists of the 18th Century, Torbern Bergman, was born in the family of a tax-collector who insisted that his son received academic training (at the University of Uppsala) as a theologian or lawyer. Fortunately for the development of natural science, Bergman decided to concentrate on mathematics and later botany and entomology. His master's thesis, which he defended in 1758, was on mathematics. In the early 1760s, he became an adjunct in mathematics and physics, and studied the electrical and optical properties of minerals, e.g., tourmaline. In 1764, he was elected to the Swedish Academy, and three years later, he was appointed professor of chemistry, even though he had done no original work on the subject. In a little over a decade, until his virtual retirement in 1780 due to poor health (he died in 1784 at the early age of 49), he made discoveries that influenced future chemistry research for many decades. Half-seriously, it has been averred that his major discovery was that of Carl Wilhelm Scheele (1742-1786), but in fact he made numerous important contributions to the fields of analytical and physical chemistry. Not only did he perfect wet qualitative and quantitative analysis of minerals, metals, salts, and mineral waters, but he was also instrumental in the dissemination of an

important early analytical tool for dry analyses – the blowpipe. His work on chemical affinities (or “attractions”), although based on erroneous ideas, was very influential and served as the basis of improved and corrected theories. Bergman represented chemical processes using what now justifiably be seen as some of the first reaction schemes or chemical equations. In addition, he was an outstanding educator who supervised several impactful dissertations and contributed to the popularization of chemistry, for instance, with his essay of 1779 (in Swedish and German) and 1783 (translation in English) on the “Usefulness of Chemistry, and Its Application to the Various Occasions of Life.” His reputation was truly international, and, outside of Sweden, he was a member of the Academies of Berlin, Göttingen, Torino, and Paris, a Fellow of the Royal Society (1765), and a member of the American Philosophical Society (1779). Bergman’s most important contributions to chemistry will be described in this talk.