Mathieu-Alexandre Allizeau (1774–1835):

Crystal model making in times of change

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The founders of crystallography in the 18th century recognized immediately that the study of such a challenging, three-dimensional subject was greatly aided by the use of crystal models. Mathieu-Alexandre Allizeau—mineral dealer, instrument maker, inventor of educational toys and games, arts and curiosities collector—supplied crystal models during a time in which the science was advancing from Haüy's primitive forms to what would become our modern-day crystal systems.

INTRODUCTION

Mitchell (2000) presented a short text on a serendipitous find of a set of 84 crystal models, some of which bore an embossed stamp saying "ALLIZEAU A PARIS." We can rule out Mitchell's supposition that the set was ordered specifically by the prominent crystallographer Rene Just Haüy (1743–1822), but the connection to Haüy's work is clear in that the whole set illustrates Haüy's so-called primitive forms. In 2015 one of us (JK) visited the Natural History Museum in Paris on a grant for a preliminary study of the crystal model collections preserved there. One set of variously colored crystal models, some stamped "ALLIZEAU A PARIS," stood out as being based on six crystal systems very similar to the ones that we still use today.

Who was Allizeau, how could one interpret his models, and under what circumstances were they made? To answer these questions it is necessary to look at the crystal modelling business in Paris ca. 1805–1840, a period initially influenced by Haüy's crystallographic theories that evolved into the currently accepted crystal systems. Our protagonist bridged the two periods, providing crystal models that evolved in parallel fashion with the development of crystallographic science.

In an earlier article on the crystal model makers Nathaniel and John Richard Larkin (Wilson and Kjellman, 2015) we briefly reviewed the history of model making in Europe by people like Anders Philip Tidström (1723–1779) in Uppsala, Jean-Baptiste Romé Delisle (1736–1790) in Paris, Abraham Gottlob Werner (1749–1817) in Freiberg, and René Just Haüy in Paris. Also, in a recent study on the historical crystal model collections preserved at the Technical University Bergakademie Freiberg (Kjellman *et al.*, 2020), we commented on the collaboration or interplay that took place between the crystallographers and the artisanal crystal model makers of the time (e.g. between Werner and Immanuel Löscher, and between Haüy and his craftsmen), as well as noting some basics regarding Haüy's theories with reference to the models. In both of these articles the entrepreneurial aspects of adaptation and competition among the various sellers were likewise touched upon. It was important for independent crystal model makers to develop new methods and find new customers for their models.

The concluding remarks in these two articles discuss how the