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Virtual Anatomy—1900

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Since the Renaissance, medical students have learned human anatomy by studying cadavers. An anatomist dissected a corpse while explaining the spatial relationships of different organs and their interaction within the human body. By the 19th century, an increasing supply of cadavers, from executed criminals or unclaimed bodies, allowed students to learn by performing their own dissections. Pocket anatomical books served as guides, but three-dimensional anatomical structures were difficult to convey via narrative and wood-cut drawings.

Dr. Louis Auzoux (1797–1880) began manufacturing papier-mâché anatomical models in 1827 (Fig. 1). Enlarged models also allowed a detailed depiction of anatomical structures referenced by an associated guidebook and could be "dissected" to allow the study of the relationship of internal structures. The models served as an adjunct for dissection, as noted during a demonstration in 1832: "... here it was to be investigated; by removal of a few parts, the situation of particular points might be quickly descried, and the memory might just receive, just before an operation, the most valuable assistance."[1]

Over 75 years later, the Flexner Report emphasized the continued value of these models: "It is one thing to take the body to pieces; it is something else to conceive these severed and dissociated elements in stereoscopic relation; and it is a still further task to unravel the tissues themselves: hence, on the macroscopic side, the prominence now given to reconstruction through drawing and modeling, and the close study of charts and of cross sections, of models and of special preparations that form the indispensable teaching museum."[2]

The Army Medical School, established in 1893 at the Army Medical Museum and Library, was a postgraduate medical school to train physicians their duties as medical officers.[3] In preparation for the school's establishment, the museum purchased 21 Auzoux models, which were treated as anatomical teaching specimens and assigned Anatomical Series numbers by museum curators. Between 1894 and 1916, an additional 42 models were purchased.[4] These models document the school's effort to provide a quality medical education using the latest instructive techniques.

By developing man-made dissectible representations of human anatomy to prepare the medical student work on the human body, Dr. Auzoux established the intellectual basis for future medical simulators that prepare late 20th and early

FIGURE 1. Kidney, Anatomie Clastique Du Docteur Auzoux (1903), M-550.10834. (Courtesy National Museum of Health and Medicine, Silver Spring, MD.)

National Museum of Health and Medicine, U.S. Army Medical Research and Materiel Command, 2500 Linden Lane, Silver Spring, MD 20910.

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21st century medical students for surgical procedures on actual patients.

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