

of the narratives examined predate the middle of last century, the exceptions being the AIDS narratives. None addresses directly the complex practice of modern ethics, the changing patient-physician relationship, the economic or technologic limits to medicine, or the experience of women as practitioners of medicine. One or two of the essays make for daunting reading for the uninitiated

in modern literary theory and its stylistic flourishes, although Robert D. Tobin's intimidatingly titled "Prescriptions: The Semiotics of Medicine and Literature," reclaims the word "semiotics" for its discipline of origin, medicine. I particularly appreciated David Lashmet's examination of empathy not as an emotional experience, but an imaginative act, and Judith Leggatt's very topical discussion of

cultural beliefs about pollution, purity and disease. Even with the limitations imposed by time and choice, this is a rich, thought-provoking collection; rather than ask that any be different, I'd only ask for more.

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### Lifeworks

## A very real art

The depiction of normal and pathologic anatomy in models is nearly as old as medicine itself. Early examples were created in clay, marble and ivory.<sup>1</sup> The art of moulage — the representation of anatomical structures in wax — arose during the Renaissance and was perfected in the 18th century, when it was practised extensively in Germany and Italy. Wax allowed for a versatility and realism unattainable through harder media. The technique was threefold: a clay model was first sculpted and then used to make a plaster cast. Molten wax was then poured into the cast, allowed to set and then removed. Last, fine details and colour were added to achieve a precise and life-like representation. One of the finest examples of the technique is Clemente Susini's *Medical Venus*, one of the famous "La Specola" waxes created in the studio of the chemist and physiologist Felice Fontana (1730–1805) in Florence. This exquisitely rendered moulage depicts a supine woman with a removable anterior thoracic and abdominal wall, giving a view of the internal organs ([www.specola.unifi.it/cere/wax-collection.htm](http://www.specola.unifi.it/cere/wax-collection.htm)).

Medical moulage was eclipsed by the use of plastic models in the early 20th century. Plastic allowed for a more durable product to be produced at a lower cost. The newest development is, of course, computer modelling, as in the Visible Human Project ([www.nlm.nih.gov/research/visible/visible\\_human.html](http://www.nlm.nih.gov/research/visible/visible_human.html)).

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A brief resurrection of medical moulage occurred, curiously enough, in Ontario during World War II thanks to the efforts of Dr. Edwin Robertson. Educated in his native city of Edinburgh, Scotland, Robertson moved to Canada in 1939 and became chairman of the Department of Obstetrics and Gynecology at Queen's University, Kingston. He had a keen interest in medical education but was frustrated by the scarcity of anatomical specimens. Nor was he the only physician concerned with the lack of teaching material at this time. In 1941, Dr. Robert L. Dickinson, an obstetrician in New York, wrote:

The proportion of female cadavers available for dissection of the reproductive organs runs, I am told, to less than 5 percent of the bodies obtained from the morgue. Moreover, these are chiefly of old women with atrophic tissues.<sup>2</sup>

In 1940 Robertson had an opportunity to see a moulage collection, mainly of dermatologic conditions, at the Department of Art as Applied to Medicine at Johns Hopkins University. (Founded



**Marjorie Winslow.** Normal spontaneous vaginal delivery, 1940–1946. Wax model, life size.

in 1911, this was the first such department in North America.) When he was unsuccessful in recruiting an artist from Johns Hopkins to create a series of gynecologic moulages for Queen's, he found an able collaborator in Marjorie Winslow, a Kingston artist who had trained in Montreal, England and Rome. This was Winslow's first use of wax as an artistic medium. She recalls: "We went into commission very slowly, learning as we went along piece by piece. Casting in wax was a real adventure."

The creation of each moulage was quite involved. Winslow began by observing Robertson's patients in the clinic and the operating room. Because Robertson did not permit her to sketch in these settings, she sculpted a preliminary clay model from memory. Robertson approved the models before plas-



**Marjorie Winslow.** Normal spontaneous vaginal delivery; baby's head rotated to deliver shoulder, 1940-1946. Wax model, life size.

ticine casts were made. The wax itself was composed of beeswax, talc and sometimes a little paraffin. Winslow painted the models to mimic skin and blood vessels, using everyday items such as pins, orange peels and rocks to add texture. Another embellishment was the painstaking addition of human hair.<sup>3</sup>

There are three main groups of moulages in the Robertson collection: obstetric models, gynecologic pathologies and miniature representations of

female somatotypes. The extent to which they were used in classroom instruction is not clear; Robertson's lecture notes make no reference to the moulages, although archival photographs indicate that they were displayed in the laboratory where medical students trained. At any rate, by the 1950s instruction in anatomy seems to have been outweighed by a greater emphasis on physiology. The moulages were in storage for about 40 years altogether, and some were destroyed by fire in the 1960s. The remaining pieces were brought to the Museum of Health Care at Kingston, and several were conserved by students in the Master of Art Conservation Program at Queen's.

The moulages are both an educational tool of interest to medical historians and delicate pieces of art. Winslow describes them as "very real

art in reproduction of life's drama." Today's viewer might be reminded of the work of Georgia O'Keeffe and Judy Chicago. The collection, which will eventually be displayed at the Museum of Health Care, is unique in Canada and is one of the last groups of medical moulages to be produced in the world.<sup>1</sup>

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### *Room for a view*

## On becoming a doctor

Like all physicians, I have regrets. Still, my career choice, in retrospect, seems to have been predetermined. Recently I uncovered a picture in my parents' basement: "My daddy is operating on a patient. He is very sick. STEPHEN WORKMAN." The picture, which I drew in grade one and the teacher captioned for me, shows my father, consisting of little more than a poorly articulated skeleton, wielding a large and frightening saw. From the wretched appearance of the patient, rendered with ample amounts of red crayon, I doubt he survived. My father has since retired

after 30 years as a general practitioner, 20 of them spent behind bars as a prison physician.

I was the first member of my medical class, the class of '89, and I have the photos to prove it. In 1969, "Nana" Workman knit two Queen's Meds sweaters after carefully working out the years my older brother and I would graduate. Somehow, although he was one year older than me, my brother is wearing the Meds '90 sweater in the photograph, and I the Meds '89. Twenty years later I received my medical degree from Queen's University — as fate would have it, in 1989. My

brother, a good deal smarter than me, wisely decided to forgo the family business and became an electrical engineer.

Despite such an auspicious beginning, I now find myself amazed at the extent to which my medical training succeeded. For it is only in hindsight that I realize just how little my clinical skills teachers had to work with. What I see, what I know, what I understand have all irrevocably changed from the days of my first "clinical encounter." I had to take a history from a young and healthy-looking university student only a few years younger than I, who was in hospital receiving high-dose intra-