

November 1971

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### Recommended Citation

O'Reilly, Ronald J. (1971) "Cosmas and Damian: Their Medical Legends and Historical Legacy," *The Linacre Quarterly*: Vol. 38: No. 4, Article 10.

Available at: <http://epublications.marquette.edu/lnq/vol38/iss4/10>

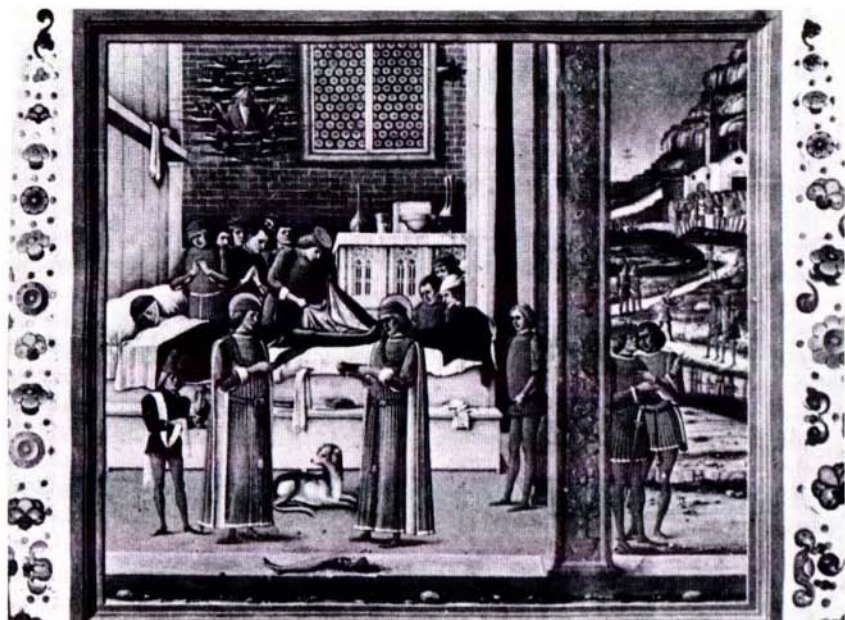


FIGURE 1

*"Miracle of the Leg" (Uncertain artist. Has been attributed to School of Bellini, Ferrara and Mantegna) (Society of Antiquaries, London.)*

*Example of a portrayal stressing religious and lacking scientific orientation.*

## **Cosmas and Damian Their Medical Legends and Historical Legacy**

Ronald J. O'Reilly, M.D.

Medicine of the Middle Ages was often oriented far more to religion than to science. Medical knowledge was primitive. Great prayerful reliance was placed on medical saints. Cosmas and Damian were the most popular of all medical saints during the Medieval and Renaissance periods.

With the emergence of scientific medicine, Cosmas and Damian became obscure. Today, although many physi-

cians have heard of them, few know much about Cosmas and Damian. An extensive search through the voluminous accounts of medicine's history provides little concerning these early physicians. This paper explores the legends of these medical saints, reviews their role as medicine's patrons, examines their medical portrayal in art, and summarizes the role of Cosmas and Damian in our early medical history.

## The Legends of Cosmas and Damian

The most popular version of the life of Cosmas and Damian refers to them as physician brothers who lived in Syria in the middle of the third century. Some biographers refer to them as twins<sub>1</sub>, while elsewhere, they are spoken of as brothers only<sub>2</sub>. They are said to have been martyred during the Christian persecution of the Roman emperor Diocletian.

There are many historical conflicts regarding the lives of Cosmas and Damian. Even in the Christian tradition, there are a number of widely divergent accounts of their lives (Table I). Furthermore, many historians doubt that Cosmas and Damian ever existed. Some hagiographers contend that they merely represent a Christian adaptation from Greek mythology of the twin heroes and healers Castor and Pollux<sub>5</sub><sup>6</sup>.

Cosmas and Damian became known as legendary healers during the early Christian centuries. It was believed that the saints would appear to sleeping patients and bring about miraculous cures. Table II recounts some of the medical feats attributed to the brother physicians.

## Medical Patronage

During the Middle Ages the fame of Cosmas and Damian grew as patrons of medicine. Many early medical facilities were dedicated to the twin patrons. They were depicted on the official seal of the Universities of Prague (1348), Leipzig (1904), Ingolstadt (1410), Wittenberg (1502), Oenipontana (1673)<sup>8</sup>.

Cosmas and Damian were principally patrons of surgery during that phase of medical history when surgery

TABLE I  
Versions of the Life of Cosmas and Damian

Version	Church Recognition	Place Birth	Place Practice	Death	Burial
Arabian	Roman Catholic Green Orthodox*	Arabia	Aegea	Martyrdom (Emperor Diocletian)	Cyrus
Roman	Greek Orthodox Russian Orthodox	Rome	Rome	Martyrdom (Emperor Carinus) <sup>3</sup>  Provoked jealousy of their teacher of medicine and were stoned to death. <sup>4</sup>	Rome
Egyptian	Greek Orthodox Russian Orthodox	Egypt	Egypt	Natural Death	Pheneman

\*The Greek Church recognizes three pairs of brothers all named Cosmas and Damian.

was held in a very inferior role<sup>9</sup>. The French Confraternity of Cosmas and Damian was an example of an early surgical association formed under their patronage<sup>10</sup>. The College of Saint Cosmas was an outgrowth of the original Confraternity. In 1723, this College became the Academy of Surgery, the forerunner of the present National Society.

In England, the Barber-Surgeons Guild was organized in 1303 under the patronage of Cosmas and Damian. This organization remained corporate until 1745. The Surgeons Company was then formed and was ultimately replaced by the present Royal College of Surgeons<sup>11</sup>. (Table III)

### Iconography

Artists of the early and middle centuries frequently portrayed the saintly physicians. The iconography of Cosmas and Damian is extensive in

scope and distribution. The physician brothers were the frequent subjects of artists in Spain, France, Holland, Great Britain, and Ireland<sup>12</sup>. In Italy, Cosmas and Damian were patrons of the powerful Medici family of Florence. Through the Medici influence, a great many Italian Renaissance painters (i.e. Angelico, Pesellino, Titian) focused their attention on the lives and practices of Cosmas and Damian.

The brothers were almost always portrayed in a medical image either in reference to their habit, possessions, or acts. Of interest, Saint Luke (the modern patron saint of medicine) was only rarely artistically portrayed as a physician<sup>13</sup>. Artists became historians when they recorded Cosmas and Damian dressed in the physician habit of the artists' own time and country. Frequently, these saints are depicted attending a sick patient or performing a surgical procedure. Nearly always they are seen holding symbols of the

TABLE II  
Medical Legends of Cosmas and Damian

Condition	"Therapy"
Cancer (leg) "Miracle of the Leg"	See text. Amputation and transplantation.
Anasarca	Surgical drainage of the edema fluid.*
Breast Abscess	Appeared in the dream of a physician telling him where to incise his patient's breast and what salve to apply. <sup>7</sup>
Oral Abscess	Laying on of the hands causing drainage and ultimate cure. <sup>7</sup>
Hemorrhage	Prescription of a diet consisting of "cakes made with flour." <sup>6</sup>
Breast Pain	Prescription of an elixir of "Leser mixed with pennyroyal." <sup>4</sup>
"Three Separate Tumors"	"Prayer Alone." <sup>6</sup>

\*This legend indicates the scientific naivety of the time.



**TABLE III**  
**Medical Patronage of Cosmas and Damian**

**Patrons of Medical Groups:**

Physicians	Wet Nurses
Surgeons	Hernia Healers
Pharmacists*	Bandagers
Midwives	

**Patrons of Particular Disease States\*\***

The Plague (Along with SS Roch and Sebastian)  
 Glandular Diseases  
 Ulcers  
 Childhood Convulsions  
 Unhealthy Humors  
 Actinomycosis of Horses

\*In the United States, Saints Cosmas and Damian have been particularly known as patrons of pharmacy.

\*\*Frequently a particular saint was invoked for a particular disease state. Cosmas and Damian were invoked for a wide variety of conditions.

**TABLE IV**  
**Examples of Medical Symbols**  
**In The Iconography of Cosmas and Damian**

Artistic Work	Symbols of Medicine
Roger van der Weyden "The Medici Madonna" (Painting)	Urine Flask and Spatula
Stain Glass Window 16th Century Church of St. Jean des Murgers	Scalpel (one brother shown incising the scalp) and Urine Flask
Unknown Artist (15th Century) Miniature from the Prologue to Chauliac Formulae	Mortar and pestle and Urine Flask
Tapestry (Erasmus Pharmacy at Warburg, Westphalia)	Urine Flask and Ointment Jar and Spatula (many plants are pictured in the background of the tapestry. All the plants are of pharmaceutical importance i.e. Digitalis purpurea, Hepatica triloba, etc.)
Lorenzo de Bicci (15th Century) Retable Cathedral of Florence	Forceps and Small Medicine Boxes
Icon (Probably of Aramenian Origin) 1700 (From the van der Wieden Collection)	Medicine Chests
Miniature (11th Century) Bibl. Vatican Manuscript	Medicine Box (Brothers shown receiving the box from the hand of God extending down through a cloud.)

medical profession. By studying these symbols, we can discover much about the instruments and methods of the Medieval and Renaissance physician. In this era, uroscopy was extremely common and Cosmas and Damian were often depicted intently examining the urine flask. Ointment jars of varying sizes and shapes frequently appear in their portraits. They are seen

carrying pill boxes, surgical knives, forceps, mortars and pestles, vases, pill rollers, and spatulas. (Table IV)

### Miracle of the Leg

The "Miracle of the Leg" was the most frequently portrayed image of the surgeon saints. According to this legend, Saints Cosmas and Damian

TABLE V  
Analysis of Artistic Portrayals of the "Miracle of the Leg"

Artist	Surgical and Anatomic Detail	Surgical Instrumentation	Surgical Assistants
Fra Angelico 1438	Poor. Mid thigh amputation.	None.	None.
Unknown (early 16th Century) (Wurttembergisches Landesmuseum, Stuttgart)	Fair. A.K. amputation and transplantation. One brother shown removing tourniquet at completion of operation	None. Angels shown with ointment cases and spatulas.	Three Angels.
Pedro Berruguete (15th Century) Covarrubius, (Burgos)	Interesting. Transplanted leg is longer than the contralateral normal leg.	One brother shown with a small knife (resembling a scalpel) in his hand.	Two feminine observers.
Unknown (16th Century) (Oesterreichische Galerie, Vienna)	Poor. Pictured as a thigh transplant (Black thigh with a white calf). Incision at mid-patellar level.	None.	None. Large number of visitors viewing the patient Cosmas and Damian not shown in this work.
Fernando del Rincon (circa 1500)	Fair. A.K. Amputation.	None. One brother shown with an ointment dish and spatula. Other brother shown giving an ecclesiastical blessing.	
Alonso De Sedano (Circa 1500)	Fair. B.K. Amputation. However, only calf bone seen on cross section.	None. One brother giving blessing and holding a medicine box. Other brother is about to place the black extremity against the stump of the amputated upper calf.	Three Angels.

appeared to a white man in his sleep, amputated his cancerous leg, and transplanted the leg of a Negro who had just expired. It is of interest to speculate on this legend in our time now that we have seen both cadaver transplantation and inter-racial organ transplantation. A survey of a number of artistic portrayals of the "Miracle of the Leg" is given in Table V.

A portrayal of the "Miracle of the Leg" that appeared in a 15th century choir book is shown in Figure 1. This work represents one of the most non-medical artistic portrayals. Note the poor anatomic detail (low thigh amputation and the crude instrumentation). The environment is more ecclesiastical than surgical. Aseptic technique is totally lacking, even to the point of the ridiculous, with the presence of a dog in the operating room area.

The painting by Ambrosius Francken (Figure 2) represents the other end of the spectrum. This work is unusual in terms of good anatomic and surgical detail. Even a tourniquet is present above the amputation site. A large surgical knife is pictured in the foreground. Note that the patient's head is wrapped in a towel in a manner not dissimilar to that used in modern day operating room suites. The patient in Francken's work appears to display pain although in most portrayals, the patient is pictured asleep in accordance with the legend. The background of this painting is definitely medical with an obvious hospital motif. Even more unusual is the fact that the surgeons are pictured without halos, an extremely unique finding for religious art of that period.



FIGURE 2

*"Miracle of the Leg" (Ambrosius Francken) (Koninklijk Museum, Antwerp). Unique portrayal in terms of accurate anatomic and surgical detail.*



## Summary

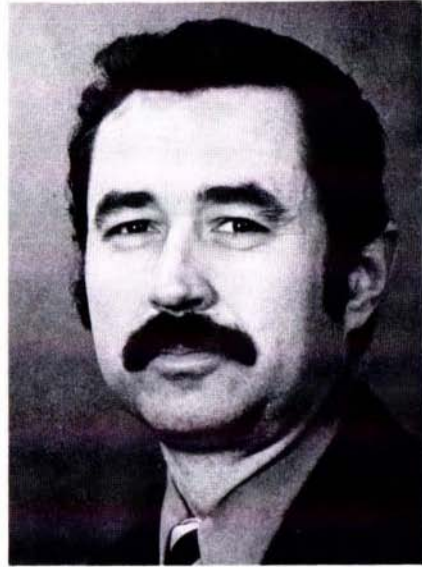
Historically, the biography of Cosmas and Damian stands on a very insecure foundation. Yet for centuries, the medical saints were invoked in an effort to overcome illness.

The iconography of the brother saints developed during the Middle Ages and Renaissance periods provides insight into the medical history of these periods. Through the careful appraisal of their artistic portrayals, we gain an unique appreciation of Cosmas and Damian — their medical legends and historical legacy.

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