Stephen N. Joffe, MD, FRCS, FACS

The Joffe Foundation 4400 Drake Road Cincinnati, OH 45243 USA

Veronica Buchanan, M.A.

University of Cincinnati Libraries Henry Winkler Center for the History of Health Professions 231 Albert Sabin Way Cincinnati, OH 45267 USA

Correspondence author: Stephen N. Joffe, MD, FACS FRCS (Edin) FRCS (Glas) FCS (SA)

The Joffe Foundation 4400 Drake Road Cincinnati, OH 45243 USA Tel (513) 271-0670 Fax (513) 271-8426

Email: stephen@sjoffe.com

Abstract

The purpose of this study was to confirm the locations in the United States of America (USA) of the first (1543) and second edition (1555) of the "de Humani Corporis Fabrica" authored by Andreas Vesalius.

Contacts were made at institutions of higher learning, museums, libraries and an update of locations of previous studies in 1943 and 1984.

A total of 64 copies of the 1543 Fabrica and 58 copies of the 1555 Fabrica were recorded in University and Institutional Libraries in the USA. Twenty-Six (54%) out of 48 locations having both editions.

The majority of locations recorded by Cushing in 1943 and subsequently by Horowitz and Collins in 1984 are still in their original collections.

Location and dual ownership in private collections were more difficult to locate.

Keywords: Anatomy, Bones, Census, Dissection, Human, Vesalius, Printing, Illustrations, Physicians, Ownership.

1. Introduction

Andreas Vesalius's treatise, *De Humani Corporis Fabrica*, is considered the greatest work on anatomy ever produced. First published in Basel by the publishers, Johannes Oporinus in 1543, the Belgium anatomist Vesalius's text changed the science of anatomy, the manner taught and standardized the anatomical representation for the next two hundred years.

Vesalius critically reexamined Galen's old anatomical text, which had been derived largely from nonhuman anatomical sources, and established the dissected body as the reference point for anatomy. Vesalius anatomy was based on first hand observation and he conducted the demonstrations rather than using an assistant.

Presented in an elegant style with classical references, Vesalius's illustrations used the wood-block technique of printing. The Fabrica of 1543 contains some 660 pages and over 200 illustrations, many of which Vesalius personally chose, whilst supervising the artist's work from his own dissections. The result was a detailed and easily recognizable representation of the body showing the structure of bones and muscles. Folio sheets were laid out in a sequence following an actual dissection. A series of animated skeletons posing in outdoor landscapes, were often juxtaposed with commonly recognized symbols of death, such as a tomb or shrouds. One of Vesalius's skeletal figures is shown in a melancholic position contemplating a skull placed upon a tomb and reprises a common vanitas motif, "What I am now, you soon will be."

Following a successful publication and sale of the first (1543) edition, a second (1555) edition was produced. The 1555 edition was more sumptuous than the 1543 first edition. It was printed on thicker paper,

set in larger type and had more widely spaced lines. Vesalius made both stylistic and factual changes, and in some cases this required the design and production of a new initial letter woodblock. The new illustrations, with the exception of the title page, are generally considered to be even finer than those in the 1543 edition.

This second edition also had several textual alterations, including a revised chapter on embryology, a description of the venous valves, and two new chapters. No documentary evidence remains for the decision behind the production of a second edition, except possibly to answer specific criticisms of the content leveled at the first edition and for Vesalius to answer his detractors in the new edition.

The recently found 1555, second edition, with annotations presumed to be by Vesalius in preparation for a third edition has been loaned to the University of Toronto, Canada.

This report discusses the locations of the first edition (1543) and second edition (1555) of *De Humani Corporis Fabrica* written by Vesalius and the Public University and Institutional locations in the USA. It lists those locations possessing both copies and compares them to previous publications.

2. Materials and Methods

The development of the internet has helped greatly in the searching of several hundred institutions in a matter of several months. Internet connections such WorldCat.org, American Library Associations, Universal Short Title Catalogue (USTC), and LISTSERVS such CADUCEUS and MEDLIB-L were a help. Letters of enquiry were sent to libraries not yet online, consultation with dealers and collectors, telephone calls, faxes, checking auction records, original catalogues and other books were vital to the collection and collation of the information.

The method of researching copies held in Institutions and Libraries was relatively straight forward. Once having ascertained which institutions owned both the 1543 first edition and 1555 second edition, requests were sent to the relevant librarians for any additional bibliographical details which did not appear in the online catalogues.

This included asking for confirmation of the presence of the Edition, number of copies held, past ownership, type of binding, condition of book, completeness of pages, bookplates present, previous owners, location and bookshelf call numbers, photographs (if possible) and any other relevant information. The completion of this catalogue is due to the help the librarians provided through their own investigations, comments and cross-referencing of the information. In addition, all of the listed locations by Cushing [1] and Horowitz and Collins [2] were contacted to confirm the presence of the book. Discovering copies held in private collections was more difficult with current owners requesting anonymity. Auction houses were also more discreet regarding the purchasing identity of the client.

3. Results

First Edition (1543) Vesalius

A total of 64 First Editions were located in 47 Public locations and compares these findings to Cushing (1543) and Horowitz and Collins (1984) (Table 1).

| Table 1 | | | | | |
|--------------------------------------|-----------|----|--|--|--|
| Vesalius First Edition (1543) in USA | | | | | |
| In Libraries and Ins | titutions | | | | |
| Number Locations | | | | | |
| Cushing (1943) | 19 | 13 | | | |
| Horowitz and Collins (1984) | 46 | 38 | | | |
| Joffe (2015) | 64 | 48 | | | |

The geographical location ranged from 40% on the East, primarily New York, Boston and New Haven, 33% Midwest, 18% Central and only 7% in the West coast in Los Angeles, Palo Alto and San Francisco, California.

Lists of the Private owners of the first edition (1543) is shown in Table 2. We have identified seven privately held, the owners of which wish to remain anonymous. In Cushing's study 100% were physicians, 80% in Horowitz and Collins and in this study, 5 of the seven (71%) were physicians. (Table 2)

Three out of 4 of the copies in Cushing's series are now in Universities and three of the physicians in Horowitz and Collins' study are still alive.

Medical Research Archives, Vol. 3, issue 8

Location of Both 1543 and 1555 Editions of Vesalius' 'Fabrica' in the USA

Table 2
Vesalius First Edition (1543) in USA
In Private Ownership in USA

| Cushing in 1943 | Horowitz and Collins in 1984 | Joffe in 2015 |
|----------------------|---------------------------------|----------------------|
| Otto O. Fisher, MD | Meyer Friedman, MD | Private |
| John F. Fulton, MD | Howard W. Higholt, MD | Private |
| Lewis S. Pilcher, MD | Harrison D. Horblit | Private |
| J.C. Trent, MD | Arthur E. Lyons, MD | Private |
| | Francis D. Moore, MD | Private |
| | Haskell Norman, MD | Private |
| | Irwin J. Pincus, MD | Private |
| | Myron Prinzmetal, MD | |
| | Private | |
| | Private | |

In comparing the 45 First Editions in 37 Locations that Horowitz and Collins [2] reported in 1984, we confirmed 32 of the 37

(86%) Public Locations still possessed their first editions (1543) (Table 3).

Table 3
Comparison to Horowitz and Collins' Census of First Edition (1543)

| | | Published in | 1543 | Published in 1555 | | |
|---|--------------------------|--------------|-------|-------------------------------|-----|---------|
| | Location | City | State | Horowitz & Collins 1984 | Jof | fe 2015 |
| 1 | University of California | Los Angeles | CA | 1 | 1 | 1 |
| 2 | Stanford University | Palo Alto | CA | 1 | 1 | 1 |
| | | San | | | | |
| 3 | University of California | Francisco | CA | 1 | 1 | 1 |
| 4 | Yale University | New Haven | CT | 2 | 3 | 1 |
| 5 | Smithsonian | Washington | DC | 1 | 1 | 1 |
| 6 | The Newberry Library | Chicago | IL | 1 | 1 | 0 |

| 7 | University of Chicago | Chicago | IL | 1 | 2 | 1 |
|----|------------------------------------|--------------|----|----|----|----|
| 8 | University of Indiana | Bloomington | IN | 1 | 1 | 1 |
| 9 | University of Iowa | Iowa City | IA | 1 | 1 | 1 |
| 10 | University of Kansas | Kansas City | KS | 1 | 1 | 1 |
| 11 | John Hopkins University | Baltimore | MD | 2 | 2 | 1 |
| 12 | Library of Medical and Chirurgical | Baltimore | MD | 1 | 0 | 0 |
| 13 | National Library of Medicine | Bethesda | MD | 1 | 1 | 1 |
| 14 | Boston Medical Library | Boston | MA | 1 | 0 | 1 |
| 15 | Harvard University | Cambridge | MA | 1 | 6 | 4 |
| 16 | University of Michigan | Ann Arbor | MI | 1 | 2 | 1 |
| 17 | University of Minnesota | Minneapolis | MN | 1 | 1 | 1 |
| 18 | Linda Hall Library | Kansas City | KS | 1 | 1 | 1 |
| 19 | St. Louis Medical Society Library | St. Louis | MO | 1 | 2 | 0 |
| 20 | Cornell University | Ithaca | NY | 1 | 0 | 0 |
| 21 | Columbia University | New York | NY | 4 | 4 | 2 |
| 22 | New York Academy of Medicine | New York | NY | 2 | 3 | 1 |
| 23 | Hospital for Special Surgery | New York | NY | 1 | 0 | 0 |
| 24 | Pierpont Morgan Library | New York | NY | 1 | 1 | 0 |
| | University of Rochester Medical | | | | | |
| 25 | Center | Rochester | NY | 1 | 1 | 1 |
| 26 | Duke University Medical Center | Durham | NC | 1 | 1 | 1 |
| 27 | Case Western Reserve University | Cleveland | ОН | 1 | 1 | 1 |
| | College of Physicians of | | | | | |
| 28 | Philadelphia | Philadelphia | PA | 2 | 1 | 1 |
| 29 | Thomas Jefferson University | Philadelphia | PA | 1 | 1 | 1 |
| 30 | The Wistar Institute | Philadelphia | PA | 1 | 0 | |
| 31 | Carnegie-Mellon University | Pittsburgh | PA | 1 | 1 | 0 |
| 32 | University of Pittsburgh | Pittsburgh | PA | 2 | 1 | 1 |
| 33 | University of Texas | Austin | TX | 1 | 1 | 1 |
| 34 | University of Texas | Galveston | TX | 1 | 1 | 1 |
| 35 | University of Texas | San Antonia | TX | 1 | 1 | 0 |
| | | Salt Lake | | | | |
| 36 | University of Utah | City | UT | 1 | 1 | 1 |
| 37 | University of Wisconsin | Madison | WI | 1 | 1 | 1 |
| | | | | 45 | 48 | 32 |

Second Edition (1555) Vesalius

A total of 58 Second Editions were located in 49 Public locations and compared to our previous findings we had "missed" 13 (22%) in 15 (26%) locations.

A comparison of this study with Cushing's (1943) showed that 22 volumes

were still in 16 of the original 18 locations reported.

The geographical locations ranged from 37% on the East coast, 28% in the Midwest, 25% in Central states and a low 10% on the West coast.

A number of changes had occurred since our previous publication. Osler and

Cushing reported having six copies of the first edition under review but we know that a second edition was given to Dr. Calvert at the University of Missouri. The auctioneers, Swanns, had sold books from the Medical and Chirurgical Faculty Library in 2004, Princeton University had purchased copies in 2011, Harvard now had six and not four copies, and one copy was misplaced.

Ownership of both copies of First and Second Edition Vesalius

Harvard University was possibly the first in the USA to obtain a 1543 edition

before the 1764 fire as the book was still packed in storage. The National Library of Medicine (previously called the Army Medical Library) acquired its copy between 1872 and 1876.

Sir William Osler (1849-1919) and Harvey Cushing (1819-1939) began the Vesalius collections at Harvard, Yale, and the New York Academy of Medicine.

In the Cushing [1] census of 1943 we found 11 (55%) out of 20 locations with both editions (Table 4).

Table 4

Cushing's Census of First (1543) and Second (1555) Editions

| | | | | Cushin | g (1943) |
|-----|---------------------------------------|---------------|-------|--------|----------|
| Nr. | Location | City | State | 1543 | 1555 |
| 1 | University of California | Los Angeles | CA | 1 | 1 |
| 2 | University of California | San Francisco | CA | 1 | 1 |
| 3 | Yale University | New Haven | CT | 2 | 2 |
| 4 | University of Chicago | Chicago | IL | | 2 |
| 5 | University of Kansas | Kansas City | KS | 1 | 1 |
| 6 | John Hopkins University | Baltimore | MD | 1 | |
| 7 | Library of Medical and Chirurgical | Baltimore | MD | | 1 |
| 8 | National Library of Medicine | Bethesda | MD | 1 | 1 |
| 9 | Harvard University | Cambridge | MA | 2 | 2 |
| 10 | University of Michigan | Ann Arbor | MI | 1 | 1 |
| 11 | Columbia University | New York | NY | 1 | 2 |
| 12 | New York Academy of Medicine | New York | NY | 1 | 1 |
| 13 | Duke University Medical Center | Durham | NC | | 1 |
| 14 | Case Western Reserve University | Cleveland | ОН | | 1 |
| 15 | College of Physicians of Philadelphia | Philadelphia | PA | 1 | 1 |
| 16 | Thomas Jefferson University | Philadelphia | PA | | 1 |
| 17 | Brooklyn Medical | Brooklyn | NY | 1 | 1 |
| 18 | Northwestern Univ Med School | Chicago | IL | | 1 |
| 19 | Fisher | Detroit | MI | 1 | |
| 20 | Academy of Medicine | Richmond | VA | 1 | |
| | | Cushing To | otal | 16 | 21 |

In this current study, a total of 48 Public Institutions possess either a first (1543) and/or a second (1555) edition of Vesalius "Corporis Fabrica". Twenty-six (54%) have both copies in their libraries. Most Universities have only one copy of each first and second edition, but within the Harvard University complex there are six of each volume, Columbia University has four first and two second editions, the New York Academy of Medicine has three first and one second edition. (Table 5)

Yale University has three first and one second editions and the University of Chicago, John Hopkins and Washington University have two first editions and one second edition.

All the remaining 18 Public Libraries, Institutions and Universities have one copy of each edition of 1543 and 1555. (Table 5) The donors were often similar for both editions and usually physicians affiliated with the University.

Table 5
Locations with Both a First (1543) and Second (1555) Editions of the Vesalius Fabrica in Institutions and Universities in the USA

| | | | | Joffe | (2015) | |
|-----|--|---------------|-------|-------|--------|------|
| Nr. | Location | City | State | 1543 | 1555 | Both |
| 1 | University of Alabama | Birmingham | AL | | 1 | |
| 2 | University of California | Los Angeles | CA | 1 | 1 | 1 |
| 3 | Stanford University | Palo Alto | CA | 1 | 1 | 1 |
| 4 | University of California | San Francisco | CA | 1 | 1 | 1 |
| 5 | Huntington Library | San Marino | CA | | 1 | |
| 6 | University of Colorado | Denver | CO | | 1 | |
| 7 | Yale University | New Haven | CT | 3 | 1 | 1 |
| 8 | University of Iowa | Iowa City | IA | 1 | 1 | 1 |
| 9 | University of Illinois at Urbana/Champaign | Champaign | IL | | 1 | |
| 10 | University of Illinois | Chicago | IL | | 1 | |
| 11 | Northwestern University Med School | Chicago | IL | | 1 | |
| 12 | University of Chicago | Chicago | IL | 2 | 1 | 1 |
| 13 | University of Indiana | Bloomington | IN | 1 | 1 | 1 |
| 14 | University of Kansas | Kansas City | KS | 1 | 1 | 1 |
| 15 | Boston Medical Library | Boston | MA | 0 | 1 | |
| 16 | Boston University | Boston | MA | | 1 | |
| 17 | Harvard University | Cambridge | MA | 6 | 6 | 1 |
| 18 | Massachusetts Institute of Technology | Cambridge | MA | | 1 | |
| 19 | John Hopkins University | Baltimore | MD | 2 | 1 | 1 |
| 20 | National Library of Medicine | Bethesda | MD | 1 | 1 | 1 |
| 21 | University of Michigan | Ann Arbor | MI | 2 | 2 | 1 |
| 22 | University of Minnesota | Minneapolis | MN | 1 | 1 | 1 |
| 23 | Washington University | St. Louis | MO | 2 | 1 | 1 |
| 24 | Duke University Medical Center | Durham | NC | 1 | 1 | 1 |
| 25 | University of Nebraska | Omaha | NE | | 1 | |
| 26 | Dartmouth University | Hanover | NH | | 2 | |

| 27 | Princeton University | Princeton | NJ | | 1 | |
|----|---|-----------------|----|----|----|----|
| 28 | New York State Library | Albany | NY | | 1 | |
| 29 | Cornell University | Ithaca | NY | 0 | 1 | |
| 30 | Columbia University | New York | NY | 4 | 2 | 1 |
| 31 | New York Academy of Medicine | New York | NY | 3 | 1 | 1 |
| 32 | University of Rochester Medical Center | Rochester | NY | 1 | 1 | 1 |
| 33 | Case Western Reserve University | Cleveland | ОН | 1 | 1 | 1 |
| 34 | Ohio State University | Columbus | ОН | | 1 | |
| 35 | University of Oklahoma | Oklahoma City | OK | | 1 | |
| 36 | Oregon Health Sciences | Portland | OR | | 1 | |
| 37 | College of Physicians of Philadelphia | Philadelphia | PA | 1 | 1 | 1 |
| 38 | Thomas Jefferson University | Philadelphia | PA | 1 | 1 | 1 |
| 39 | University of Pennsylvania | Philadelphia | PA | | 1 | |
| 40 | University of Pittsburgh | Pittsburgh | PA | 1 | 1 | 1 |
| 41 | Vanderbilt University | Nashville | TN | | 2 | |
| 42 | University of Texas | Austin | TX | 1 | 1 | 1 |
| 43 | University of Southwestern Medical Center | Dallas | TX | | 1 | |
| 44 | University of Texas | Galveston | TX | 1 | 1 | 1 |
| 45 | University of Utah | Salt Lake City | UT | 1 | 1 | 1 |
| 46 | University of Virginia | Charlottesville | VA | | 2 | |
| 47 | Virginia Historical Society | Richmond | VA | | 1 | |
| 48 | University of Wisconsin | Madison | WI | 1 | 1 | 1 |
| | | Total | | 42 | 58 | 26 |

Valuation

The first edition sold for 5 Florins in 1543 in Germany, reaching £2.30 in 1754 in Britain. Encouraged by Cushing to purchase copies when available, the valuation has risen from US \$100 in 1914 to recently being purchased for nearly US \$400,000 including

buyer's premium at auction. Over the last 100 years, the rate of return has been approximately 8% per annum (Table 6). Second editions are appearing less at auction and more with dealers at approximately 25 to 50% less valuable depending on condition and provenance.

| Table 6 | | | | |
|--|-------------|--|--|--|
| Value of First Edition (1543) of Vesalius' De Humani Corporis Fabrica | | | | |
| 1543 5 Florins | | | | |
| 1573 | 6 shillings | | | |
| 1754 | UK £ 2.30 | | | |
| 1914 | US \$100 | | | |
| 1933 | US \$800 | | | |
| 1997 | US \$69,000 | | | |

| 1998 | US \$1,625,000 | | | |
|------|----------------|--|--|--|
| 2007 | US \$450,000 | | | |
| 2014 | US \$300,000 | | | |
| 2015 | US \$384,295 | | | |

4. Discussion

The internet has been a great development for the 21st century researcher. There are over several thousand University, Institutional Public libraries, many of which have catalogues searchable online. These innovations have shortened the time for researchers to find and confirm the relevant information.

The "Fabrica" is as Osler [3] says in 1921, "greatest book ever printed from which modern medicine dates", "more admired and less read than any publication of equal significance in the history of science" said Cushing in 1943 and Nutton stated recently the "first modern book of anatomy." [4]

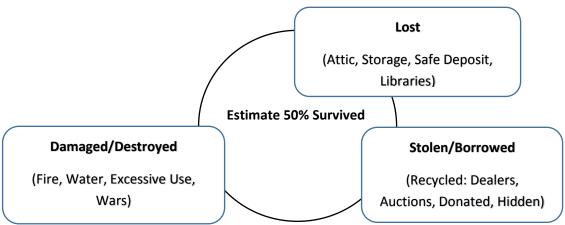
Daniel H. Garrison and Malcolm H. Hast [5] in 2014 produced an annotated translation into English of both first and second edition texts published by Karger of Basel, Switzerland. Hopefully this will allow more people to read and understand the text.

Originally we reported that the 1555 print of the Fabrica, with its complexity and numerous illustrations, would have been

produced in the order of 800-1000 copies. [6] We now believe this number is too high as the Fabrica was a rarely used book. The majority of books printed would have survived. Loss of this type of book could be due to theft, fires, bombings, wares, and earthquakes, extensive water damage, stolen or simply misplaced. Thefts of precious and rare books from libraries and private collections do occur. Individuals have been known to borrow and not return a book. (Figure 1)

Confiscation of books during wars such as by the Nazis in Second World War and destruction of libraries by bombings occurred during both First and Second World Wars. [7] Fires either spontaneous or during bombing have destroyed several copies of various editions of Vesalius. Extreme water damage occurs rarely. Most books we believe are misplaced during moving for security reasons, placed in safety deposit boxes or on shelves and forgotten or taken as a temporary loan and never returned. These books occasionally reappear in dealers or auction catalogues. If well documented in terms of binding, bookplates or written annotations, the book can be returned to prior owner(s).

Figure 1
What has happened to the First (1543) and Second (1555) Editions of Vesalius
over 450+ years



In the Database of the International League of Antiquarian booksellers (ILAB), no antiquarian Vesalius books have been reported stolen or missing amongst the 1500 books listed on 168 pages since 15th June 2010.

The importance of rare books in public libraries is increasingly debated as funding pressures have continued. A number of institutions have decided to divest themselves of all or portions of their collections due to ongoing costs of protection, preservation and insurance.

Certain collections with time began to deteriorate and were removed from display. Later these books became unavailable to the public and were largely forgotten. Today, however, Libraries and Institutions are reinvigorating their rare book collections by cataloging and placing information on their websites.

Bookplate and listed ownership of many physicians, in particular surgeons, purchased rare books from dealers or at auction. During life or after death these books were donated to Libraries and Institutions where the majority of these rare books have remained.

The New York Academy of Medicine (NYAM) has three copies of the 1543 Edition. One from Sir William Osler, imperfect but passed through several other libraries and not in original binding; one from Samuel Lambert in limp vellum wrapper as if a temporary binding with slits cut into the wrapper and one from Edward Clark Streeter, bound with alum tawed pigskin over boards with clasps. The copy donated by Lambert is known as the "Fugger Copy" which was sold in 1933 by Karl and Faber from Munich, Germany and then offered to Cushing by a New York dealer for \$800. Cushing states it was the "finest untrimmed copy" he had ever seen. The NYAM also has a copy of the second edition of 1555.

It is interesting to speculate when 'de Humani Corporis' of 1543 first arrived in the USA. We believe the earliest appearance of the 1543 Edition in the USA was just before 1764 at Harvard University (Founded 1636) in Cambridge, MA. The next recorded copy would be at the library, now known as the National Library of Medicine in Bethesda, MD, which had a copy between 1872 and 1876. Finally in 1903, Cushing owned 2 to 3 copies and Osler had accumulated 3 to 6

copies from various sources which were then donated or given as presents.

Cushing (1869-1939) does not recall when his interest in Vesalius was 'first aroused'. Probably after reading Moritz Roth's biography in 1900 and at a presentation at the Johns Hopkins Historical Club at the time. In autumn of 1903, W.G. MacCallum bought an imperfect copy of the 1543 Fabrica at the back of a blacksmiths shop in Rome which he gave to Cushing. Whilst abroad at this time, Osler (1849-1919) purchased three copies.

Ultimately Cushing and Osler, having "bought everything available", had six copies of the first edition which were distributed to libraries including McGill in 1907 which had received a copy from Osler a few years earlier, the Boston Library Association, Library of New York Academy of Medicine and University of Missouri.

The success of the 'Fabrica' was predicted in March 1543 by Hieronoymus Gemusaeus (1505- 1544), a Professor of Medicine, before it was printed. Antonio Fumanelli on August 1, 1543 hailed Vesalius as a leading anatomist.

The 'Fabrica' was sent by Oporinus to his friend Vadianus in St. Galen at the end of July 1543. The messenger fell into a river and the book was swept away. A second copy was then sent. By the end of 1543, all copies had been sold to booksellers at the Leipzig Fair in Germany.

By 1546 there were at least three copies in circulation in Oxford, United Kingdom. Philip Melanchthon (1497-1560), the Lutheran reformer and head of the University of Wittenberg, read and annotated his copy from cover to cover. He was so delighted that he wrote on the flyleaf of the book in Latin a poem praising Vesalius. This book is now in

the National Library of Medicine, Bethesda, Maryland.

Despite being referenced in both Cushing's Bio-Bibliography and the Osler's Bibiliotheca Osleriana, one of the six copies Osler laid out on his dining room table in the presence of Cushing in December 1903 was erroneously noted as a First Edition. According to both men's account, Osler gave his third-best copy to "W. J. Calvert, a recent graduate who had just been appointed Professor of Pathology at Columbia, Missouri." After consulting with the librarian at the University of Missouri, we discovered that the Calvert copy is actually a Second Edition that had received a modern binding with "1543" inscribed on the spine. Once this mistake was uncovered, the Calvert copy was removed from the Cushing total in this Census. It is unlikely that Osler did not know the difference and probably grabbed the wrong book by mistake.

Osler states that "Copies are numerous and very often appear in sale catalogues at prices ranging from £10 to £20 varying with conditions." Osler also states that he and Dr. Cushing "bought everything of Vesalius that was offered" and goes on to say "we cannot have too many copies in America and no medical library is complete without one."

Gingerich in his annotated census of Copernicus's "De Reveloutionbus" which was published in the same year as the Fabrica, lists 276 known copies of the first edition. [8] He assumes by utilizing various techniques a survival rate of about 50 percent and estimates that about 500 copies of this book were printed by Petreius in Nuremberg. Horowitz and Collins in their census listed 154 copies of the "Fabrica" and by extrapolation estimated 250 to 300 First Editions were still in existence [2] while Pozeg and Flamm in 2009 cautiously estimated that Oporinus printed

500 to 600 copies in 1543 of the first edition of 'de Humani Corporis'. [9]

Often a census is incomplete and misses locations or additional volumes are purchased. From a previous publication we estimated that 40% of the 1555 editions were in the USA. If we use this simple mathematics it would indicate that 175-200 volumes are located worldwide with an estimate of 350 to 500 of the first edition and second editions having been initially printed in 1543 and 1555 in Basel, Switzerland. [10, 11]

A census is never finished. Copies are missed and ownership changes.

With my colleagues Daniel Margocsy from Hunter College, City University of New York, and Mark Somos from Harvard University, Boston, we are undertaking a Worldwide Census of the 1543 and 1555 *de Humani Corporis* including ownership and annotations (due for publication by Brill of the Netherlands in 2017). If you know of copies present in Public or Private Capacity, please contact Daniel Margocsy at margocsy@gmail.com.

5. Conclusion

This article presents lists of dual ownerships of Andreas Vesalius' 1543 first edition and 1555 second edition of 'De

Humani Corporis Fabrica' held in University and Institutional Libraries in the USA.

Most of the original editions recorded by Cushing in 1943 and Horowitz and Collins in 1984 are still present in the original collections. Private ownership appears to have decreased.

It is estimated that over the last 450 years since published nearly half of the 1543 and 1555 edition of the 'de Humani Corporis' have survived, and of these, the majority are in University and Public Institutional Libraries with very few now remaining in private collections. The value of these books continues to appreciate due to their rarity [12].

Funding

This work was supported by Stephen N. Joffe, MD, FRCS, FACS, with no funding agency or grant.

Competing Interest

The authors declare that there have no competing interests.

Acknowledgements

To Lisa Blaker; grateful thanks for her masterful help in determining the location of many of these books and undertaking the basic research.

Medical Research Archives, Vol. 3, issue 8

Location of Both 1543 and 1555 Editions of Vesalius' 'Fabrica' in the USA

References

- 1. Cushing, Harvey: *A Bio-bibliography* of *Andreas Vesalius* 2nd edition. Hamden: Conn. Archone Books; 1963: 91-93, 218-9, XVI.
- 2. Horowitz M, Collins J: 'A Census of Copies of the First Edition of Andreas Vesalius' De Humani Corporis Fabrica (1543), with a note on the Recently Discovered Variant Issue'. J Hist Med Allied Sci 1984, 39: 198-221.
- 3. Osler, Sir William. *Bibliotheca Osleriana*-A catalogue of books illustrating the listing of medicine and science. Oxford University Press, Oxford; 1929, 58.
- 4 Nutton, Vivian. Vesalius Revised. His annotations in the 1555 Fabrica. Medical History 2012: 415-443.
- 5. Garrison, Daniel H., Hast, Malcom H.: *Andreas Vesalius: The Fabric of the Human Body*. Published S. Karger, Basel; 2014.
- 6. Joffe, Stephen N.: A census of the edition of 1555 of Andreas Vesalius' De Humani Corporis Fabrica, International Archives of Medicine; 2009: 2: 26.
- 7. Steeno, Omen, Biesbroeck, Maurits: Stolen and Lost Copies of Vesalius's Fabrica. Acta Med Hist Adriat; 2012: 10: 213-234.

- 8. Gingerich, Owen: *The Great Copernicus Chase and Other Adventures in Astronomical History* Cambridge University Press; 1991: 71.
- 9. Pozeg, Zlatko I, Flamm, Eugene S., Vesalius and the 1543 Epitome of his de Humani Corporis Fabrica Liborum. A uniquely illuminated copy. Papers of the Bibliographical Society of America (PBSA). 103.2 (2009): 199-220
- 10. Joffe, Stephen N., Buchanan, Veronica, An Updated Census of the Edition of 1555 of Andreas Vesalius' De Humani Corporis Fabrica in the United States of America. International Archives of Medicine; 2015: 8: 1.
- 11. Joffe, Stephen N, Buchanan, Veronica, Updated Census in USA of First Edition of Andreas Vesalius' 'De Humani Corporis Fabrica' of 1543. International Archives of Medicine; 2015 8: No 23: 1-17.
- 12. Christies Auction, London (King Street), December 1st 2015, Sale 12114, Lot 286 from Royal Institute of Great Britain.