

Homage to genial anatomist – Andreas Vesalius

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Submitted: 2013-08-03 Accepted: 2013-08-15 Published online: 2013-11-25

Key words: **Andreas Vesalius; De humani corporis fabrica; homage**

Neuroendocrinol Lett 2013; **34**(6):498–500 PMID: 24378449 NEL340613L01 ©2013 Neuroendocrinology Letters • www.nel.edu

Abstract

The paper highlights the personality of the founder of modern anatomy, who was able to use his knowledge and skills to change the view on the construction of the human body extending over centuries. He introduced a new scientific approach and highlighted the importance of autopsies for understanding of human body which carefully demonstrated and documented. *De humani corporis fabrica* – the spectacular work, in which he summarized results of his theoretical and practical findings, has opened a new path for the study of anatomy. Andreas Vesalius became a pioneer in the history of medical education. In 2014 will pass 500 years since his birth.

INTRODUCTION

Knowledge of the structure of the human body are the result of detailed study and practical knowledge of various structures. Modern anatomy represents the human body in connection with the development of the individual with processes which are under influence of its separate parts, the external environment and many other factors.

ANDREAS VESALIUS

In 2014 will pass 500 years since the birth of one of the most important persons in the history of humanity. A man who is considered to be **the father of anatomy** as well as the **founder of modern anatomy**, Andreas Vesalius, was born in December 31st 1514 in Brussels. As a 19-years old man he decided to focus on anatomy of the human body and came to study in Paris. Shortly after his teachers (Jacobus Sylvius and Johann Winter von Andernach) discovered his talent and feeling for the preparation and preservation, allowed him to make dissection. Johann Winter describes him as

...very promising, with excellent knowledge of medicine, Greek and Latin language, and exceptionally skilled at autopsy...

THE FIRST DISSECTION

He graduated from medicine in Padua in 1537 and began his career at the famous University in Padua as a professor of surgery and anatomy. Already his first appearance attracted an attention and generated tremendous interest. His demonstration of the human body was attended by many candidates and also by many important people. Vesalius acted as a surgeon, teacher and demonstrator. At the beginning of the autopsy he marked contours of bones on the body surface, and then he step by step began dissection while explaining the anatomy and function of the various structures and organs. The entire image has been fixed in the memory of listeners with visual images on the boards. This new pedagogical approach has become very popular. He has made a public autopsy in Bologna (1539, 1540) with cooperation and support of the young painter Johann Stephan von Calcar, who made

anatomical drawings. These first successes drifted him steadily forward and decided to check and revise previously known anatomical data from basis.

DE HUMANI CORPORIS FABRICA

The year 1543 represents a turning point in the history of medicine, and mainly in breakthrough in the scientific conception of the human body. The breakthrough was the result of hard work of one of youngest scholars in the field of medicine. Andreas Vesalius, 28-years old Flemish physician, outlined to world the monumental work *De humani corporis fabrica* (About the construction of the human body), as the first lavishly illustrated book of human anatomy. The brilliant taxidermist was convinced that real knowledge are obtained by studying, preparations and by making a dissection of human bodies, and not by downloading of unverified anatomical texts and drawings, which persisted in the anatomy almost 13 centuries. These ideas Andreas Vesalius realized progressively by dissecting of each body system and by graphic explaining he corrected errors of his predecessors. The facts drew and recorded in detail in his notes. He drew an each part of the body as well as described detailed instructions how to proceed at autopsy and in surgical operations. Until that time a textbook of this type was not issued. Such an approach required special knowledge, logical approach, coupled with an extraordinary observation talent.

Famous translator of Vesalius works T. R. Lind wrote *...his style is one of the best Latin text written during renaissance...* At the 400th anniversary of Vesalius works Max Fisch, philosopher acting at the University of Chicago wrote on front page of his article *...The work of Vesalius presents the manifesto of the education reform...*

This work represents the most perfect expression of the renaissance way of thinking. From the legacy of antiquity it retains talent for observation and logical thinking of the ancient Greeks, on the other hand, rejects the various speculations and opinions, either philosophical or professional, of medical nature. Thanks to this approach medicine rose from the darkness, which persisted for centuries. More than 500-years-old magnificent work *De humani corporis fabrica* (Basel, 1543) assessed the following history: *"the day when this work saw the light of the world, means the day of revolution that was not winning because of weapons, but due to human reason and scalpel in the hands of the great anatomist."*

ANATOMICAL TERMINOLOGY

Andreas Vesalius, philosophically educated anatomist, has made the reform of anatomical knowledge. Medieval anatomy contained a large number of anatomical names, specific naming of organs or of their parts and a large number of synonymous names. Language neoplasms were created not only out of necessity, but many authors also often cited fun new words to express their text.

Vesalius has decided to transform anatomical names in classical Latin language. His ambition was to make anatomical names factually accurate, unambiguous and linguistically flawless. From his approach to this problem we can see scientific detachment, which stems from the fact that the author was very classic and language educated. He removed synonyms from the nomenclature. This effort of Vesalius faced against the opposition especially since he tried to remove many Greek names from the anatomical language, used for centuries. Similarly, some names of Arab origin, which he replaced into his Latin nomenclature, were returned back to the nomenclature.

From the current anatomical terminology the importance of reforms of Vesalius anatomical knowledge is extraordinary, especially in establishing that the anatomical names must be clear, precise and unambiguous.

ANATOMICAL ILLUSTRATION

A spectacular success of the work of Vesalius *De humani corporis fabrica* lies not only in the excellent level of the text, but also in equally spectacular presentation – illustrations of text. The best pupils of Tiziano breathed the life to anatomy. Authorship of drawings belongs to young artist Johann Stephan van Calcar, who in this publication indicates a new trend in education reform.

Andreas Vesalius emphasizes not only the composition, but also the meaning and function of various organs, as well as an illustrator, who puts storyline into motion. Exemplary cooperation of the author – anatomist with artists, who participated in autopsies and actively carried out dissections, also was fruitful. Many masters of other arts disciplines contributed to this triumph. Ratings and reviews show that this work can not be compared with previously published books or other texts. It is the culmination of a visual work of art.

During the renaissance detailed study of the anatomy become one of the most important parts in training programs for artists. It followed up to previous study of the human body surface, its proportions, movement and arrangement of surface muscles, which were first steps in study of surface anatomy. This fact can be seen in works of Michelangelo and Leonardo da Vinci's drawings. Drawings by Leonardo da Vinci were accessible to his contemporaries and were used for study of anatomy even after his death. This way Leonardo has greatly influenced the knowledge of the human body, but he has never published any anatomical book.

CONCLUSION

In short remembrance we reminded ourselves one chapter from the life of this renaissance genius. Andreas Vesalius has opened the gate to medicine for the journey into the world of modern science. So far, he is inspiring not only anatomists, surgeons, but all doctors, artists – painters, sculptors, linguists and phi-

losophers who wish to contribute to continuous development of human knowledge and to follow his ideas. Heritage of immense value which Andreas Vesalius left, has received a special recognition, admiration and respect of many generations. With humility and reverence let us give the tribute to ideas and his legacy.

ACKNOWLEDGEMENTS

This work was supported by the Ministry of Education, VEGA 2/0081/11.

REFERENCES

- 1 Biographisches Lexikon hervorragender Artze aller Zeiten und Volker herausgegeben von A. Hirsch (1934). 2nd edition. Verlag Urban and Schwarzeberg, Berlin n.24.
- 2 Holomáňová A, Ivanová A, Brucknerová I, Beňuška J (2001). Andreas Vesalius – the reformer of anatomy. Bratislava Medical Journal. **102**(1): 48–54.
- 3 Holomáňová A, Brucknerová I (2003). Anatomical Terms III. Latin-English-Slovak Dictionary. ELÁN, Bratislava. 154 pp.
- 4 Ivanová A, Holomáňová A (2001). Anatomic nomenclature by Vesalius. Bratislava Medical Journal. **102**(3): 169–173.
- 5 Simpson J (1994) Anatomy of the human body (1994). REBO, Praha. 144 pp.