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THE GREAT 2013 MANNHEIM EXHIBITION FROM A MEDICAL PERSPECTIVE

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Interdisciplinary research that started with mummies

When the Reiss-Engelhorn-Museen (REM) were renovated in Mannheim in 2004, 20 mummies were rediscovered that had been lost to WW2. Nobody at the time imagined that this discovery would bring together Italian Florence and German Mannheim in a series of great exhibitions entitled "Mummies: The Dream of Eternal Life" that started in Mannheim in 2007 and 2008 and ended in the United States in 2014.[1]

A part of this exhibition was dedicated to the Medicis as a family that kept detailed records about their health throughout their lifetime and even after death, as nearly every number of the family was autopsied.

The cooperation between Florence and Mannheim originally had been realized in the field of a "research-participation in the interdisciplinary enquiry of skeleton-relicts as well of the ´disappeared´ women of Medici of the ´Old Sacristy´ (Sagrestia Veccia) in Florence as of the exhumation of Anna Maria Luisa de´ Medici in October 2012."[2] The climax of this cooperation

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1 Wilfried Rosendahl-Donatella Lippi: Wie alles begann. Von Mumien, Medici und einer Forschungskooperation zwischen Florenz und Mannheim in: Alfried Wieczorek – Gaëlle Rosendahl-Donatella Lippi (editors): Die Medici – Menschen, Macht und Leidenschaft, Begleitband zur Sonderausstellung „Die Medici - Menschen, Macht und Leidenschaft", 2013, p. 16.

2 Wilfried Rosendahl-Donatella Lippi: Wie alles begann, ibid.

was a special exhibition in Mannheim from 17 February to 28 July to 28 July 2013, sponsored by the Curt-Engelhorn-Foundation. An important presupposition for this exhibition was the exhumation of Medicis, realized in Florence.

Exhumations of The Medicis

The exhumation of 1945[3] - which had already been preceded by former exhumations since 16th century - for example revealed that the assassination of Giuliano de´ Medici on 26th April 1478 was more than a myth. According to Matteo Borrini[4], Guiliano´s corpse had five fatal head injuries and a bad deformation of the lower jaw.[5] By analyzing these injuries from different angles, Borrini was able to infer the type of weapons used against Giuliano.[6] Borrini demonstrates that exhumations contribute to a new perspective of medical and cultural history.

The fifth lumbar vertebra: a new medical perspective on Galileo Galilei

Historical forensic findings presented at the Mannheim exhibition do not stop at the head injuries of Giuliano de' Medici. A group of researchers including Fabio Zampieri, Alberto Zanatta, Maurizio Rippa Bonati, and Gaetano Thiene reported that Galileo Galilei suffered from many diseases in his relatively long life, such as rheumatism, kidney stones, haemorrhoids, inguinal hernia, and cardiac problems.[7] The article also brings new information about the famous fifth lumbar vertebra of Galilei. Allegedly, it was taken from Galileo's corpse on his burial in January 1643 by physician Antonio Cocchi (1695-1758) as a souvenir and passed on to his son Raimondo (1735-1775). The precious relic changed hands several times and eventually became the property of the University of Padua on the Christmas of 1820. The four authors, however, claim that the defective vertebra was not the real source of

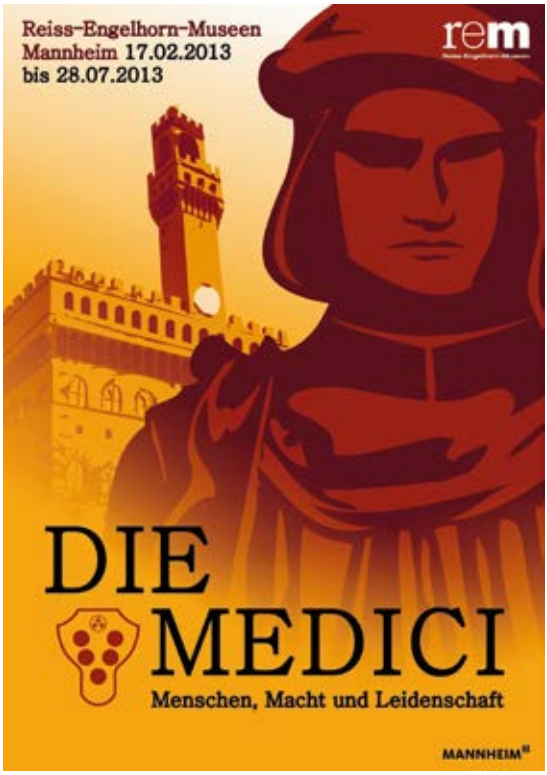
3 Donatella Lippi: Illacrimate sepolture. Curiosità e ricerca scientifica nella storia delle riesumazioni dei Medici, Firenze 2006.

4 Matteo Borrini: Das Attentat auf Giuliano de´ Medici am 26. April 1478. Forensisch-anthropologische Analyse zum Tathergang und zur Tatwaffe, in: Alfried Wieczorek – Gaëlle Rosendahl-Donatella Lippi (ed.), l.c., p. 99-109.

5 Matteo Borrini: Das Attentat auf Giuliano de´ Medici, ibid., p. 99.

6 Matteo Borrini: Das Attentat auf Giuliano de´ Medici, ibid., p. 106-108.

7 Fabio Zampieri et al.: Medizingeschichtliche Anmerkungen zum fünften Lendenwirbel Galileo Galileis in der Universität Padua, in: Alfried Wieczorek – Gaëlle Rosendahl-Donatella Lippi (ed.), l.c., p. 351-353.



Medici - poster, courtesy of Mrs. Cornelia Rebholz, M.A., Referentin Presse- und Öffentlichkeitsarbeit, Reiss-Engelhorn-Museen, Mannheim. Copyright: © CES

Galileo's grievances. Instead, they hold it much more likely that the culprit was the cold air of Custozza where Galileo worked at the age of 29. They suggest that his troubles started with infectious arthritis that got chronic over time. The fifth lumbar vertebra was probably one of the consequences of this arthritis.[8] It is still not clear whether the arthritis is also to blame for Galileo's eye disease that ended in blindness and for other diseases.

Gout: the medical heritage of the older generations of the Medicis

The Mannheim exhibition also takes a look at gout, a disease that was very common in the preindustrial Italy and beyond. Rosendahl describes

8 Medizingeschichtliche Anmerkungen zum fünften Lendenwirbel Galileo Galileis, ibid., p. 352f.

gout (Italian: gota, Bavarian: Zipperlein) in two famous Medicis: Piero di Cosimo[9] (1416-1469) and his son Giuliano[10] (1453-1478). Piero had suffered from severe episodes of pain for many years. In addition to terrible gout pains, Piero was haunted by an itch that affected all of his body.

This disease was probably deteriorated by the so called Klippel-Feil-syndrome, which maybe led to the asymmetric deformation of the lower jaw.[11]

Carlo di Ferdinando I: Ill but long-living

Like his ancestors, Carlo di Ferdinando I (1596-1666) was haunted by a range of hereditary diseases known as the *Medici syndrome*.[12] His arthritis, which was called gout back then, gradually led to a deformation of the spine. The disease was highly prominent in the older generations of the family,[13] whose life expectancy was particularly low. According to Albury et al. [14], even though Carlo di Ferdinando suffered from this painful disease, he was a merry man and had a lot of hobbies. These authors suggest that Carlo's heavy arthritis was associated with poor diet lacking vegetables and fruits, and with a lifestyle that involved minimal physical activity. Regular physical exercise was not common in those days.[15] Considering Carlo's numerous diseases and unhealthy lifestyle, the man lived to see a surprisingly old age compared to the rest of the Medicis. When he died on 17 June 1666, he was 70 years old. Today, this age would correspond to 100 years or more. His cousin Giovanni Francesco de' Medici (1619-1689), who also belonged to the younger generation, was blessed by the same old age. Cosimo III (1642-1723) died at the biblical age of 81 years.[16] . From the modern view of psychology, I believe that Carlo di Fernando got very old because he was a merry and cheerful man, he loved life, and had developed a high degree of positive thinking. Depression and melancholy were foreign to him.

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9 Gaëlle Rosendahl: Piero „il Gottoso" / der Gichtbrüchige (1416 – 1469), in: Alfried Wieczorek – Gaëlle Rosendahl-Donatella Lippi (ed.), l.c., p. 53.

10 Gaëlle Rosendahl: Giuliano di Piero „il Gottoso" (1453-1478), p. 97.

11 William R. Albury - Marco Matucci-Cerinic, G.M. Weisz: Carlo di Ferdinando I. (1596-1666), in: Alfried Wieczorek – Gaëlle Rosendahl-Donatella Lippi (ed.), l.c., p. 367.

12 G.M. Weisz et al.: The Medici Syndrome: a medico-historical puzzle, in: International Journal of Rheumatic Diseases 13, p. 125-131.

13 William R. Albury-Marco Matucci-Cerinic-G.M. Weisz. Carlo di Ferdinando I. (1596-1666) – Ein Fall von extremer Langlebigkeit trotz lebenslanger Krankheit, ibid., p. 365-371.

14 William R. Albury-Marco Matucci-Cerinic-G.M. Weisz. ibid. p. 367.

15 William R. Albury-Marco Matucci-Cerinic-G.M. Weisz. Carlo di Ferdinando I. (1596-1666), ibid., p. 366.

16 William R. Albury-Marco Matucci-Cerinic-G.M. Weisz. Carlo di Ferdinando I. (1596-1666), ibid., p. 365.

Wealth and power combined with melancholy and depression

The Mannheim catalogue brings yet another article by Donatella Lippi on melancholy and depression.[17] This important contribution has not much to do with the family of Medici and their diseases. An exception may be Cosimo III and his son Gian Gastone.[18] This more general contribution describes the medical doctrine of the four temperaments (sanguine, choleric, phlegmatic, and melancholic) combined with the four basic elements (fire, earth, air, and water) and humours (red, yellow, white, and black bile) that dates back to antiquity and was common among European physicians and healers until the 19th century.[19]

Bust of Lorenzo il Magnifico, courtesy of Mrs. Cornelia Rebholz, M.A., Referentin Presse- und Öffentlichkeitsarbeit, Reiss-Engelhorn-Museen, Mannheim. Copyright: © rem

Dr Lippi argues that this classical doctrine had first been adopted by Islamic physicians and later taken over by the Christian ones. She employs contemporary views to interpret melancholy as "the beginning of a travel into the depths of the Ego"[20] and follows the gradual shift in its interpretation from "groundless sadness" to "melancholic suffering" of the Romanticists such as Lord Byron, even though she traces the roots of this sentiment back to "the positive and negative movements of the soul" of Moses Maimonides (1138-1204 BC)[21].

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17 Melancholie und Depression, in: Alfried Wieczorek–Gaëlle Rosendahl-Donatella Lippi (ed.), l.c., p. 393-399.

18 Melancholie und Depression, ibid., p. 399.

19 Cf. my lecture on "Gesundheit und Krankheit bei Moses Maimonides" (Health and disease in the medical work of Moses Maimonides) in the "Jewish Center of Civilization of Franconia Superior" in Ermreuth near Erlangen, 14 July 2013. Cf. Wilhelm Kaltenstadler: Gesundheit, Hygiene und Krankheit bei Maimonides, in: Beiträge zur Kulturgeschichte des Judentums und der Geschichte der Medizin, Nicolas-Benzin-Foundation (www.nicolas-benzin-stiftung.de), Vol. II, Frankfurt 2010, p. 86-141.

20 Melancholie und Depression, l.c., p. 395.

21 Cf. Wilhelm Kaltenstadler: Maqāla fī al-rabw – Die Abhandlung des Maimonides über das Asthma, publisher Bautz, Nordhausen 2013 (= Jerusalemer Texte, Vol. 12, edited by Jerusalem-Akademie Hamburg).

Children: A rather late scientific discovery

It is amazing that children were not important in preindustrial Europe, with the occasional exception of noble families. Only relatively lately were children discovered by painting, literature, religion, and – hard to believe – education. In most German regions school became obligatory not before the beginning of the 19th century and in some even later. Only a few years ago did the German government pull itself together to give "Bildung" (education) high political and social priority it deserves. It also took a lot of time until demography received an important role in science and at universities.

In this light, we are surprised that the Mannheim exhibition reveals children as a demographically important factor – at least in powerful families such as the Medicis. The first exhibition catalogue article by Miriam Hahn is dedicated to illegitimate children and their rights[22] and the second to education, social role, and mortality of children.[23]

The rise of medicine in Italian Renaissance

There are two relatively voluminous contributions which are exclusively dedicated to the issues of medicine at the time of the Medicis. One is Klaus Bergdolt's article on the rise of medicine in Italian Renaissance [24] from the point of view of humanism and the newly discovered natural science. The other is Donatella Lippi's about pregnancy, childbirth, and postnatal care in the times of the Medicis.[25]

Bergdolt in his article points out that medicine originating from a new perspective on antiquity and natural sciences saw a remarkable rise in Italian Renaissance. Earlier than in the rest of Europe, many Italian physicians (followed by the French) moved away from the predominantly theological, medieval perspective of medicine toward human needs and modern humanity. Italian physicians questioned the old humoral approach of Hippocrates and Galen that prevailed in the Middle Ages, tearing down a lot of taboos along the way. Progressive physicians dared to perform dissections, autopsies, and operations. New medical disciplines were born: anatomy and surgery. But some of the great achievements of the Jewish-Arabic-Islamic medicine went

22 Miriam Hahn: Illegitime Kinder und ihre Rechte, in: Alfried Wieczorek–Gaëlle Rosendahl-Donatella Lippi (ed.), l.c., p. 207-211.

23 Lucia Sandri: Erziehung, soziale Rolle und Sterblichkeit von Kindern, l.c., p. 293-297.

24 Klaus Bergdolt: Humanismus und Naturwissenschaften – Der Aufstieg der Medizin in der italienischen Renaissance, l.c., p. 175-183.

25 Donatella Lippi: Schwangerschaft, Geburt und Wochenbett, l.c., p. 185-189.

Mummy of Piero di Medici, Florence. Foto: Tridentum, Genna Archiv im Besitz von D. Lippi, Florence. Courtesy of. Mrs. Cornelia Rebholz, M.A., Referentin Presse- und Öffentlichkeitsarbeit, Reiss-Engelhorn-Museen, Mannheim.

into oblivion, only to re-emerge in the 18th century. These include pulmonary circulation, circulation of blood, and even Caesarean section, which was described in *Libro de los Reyes* (The Book of Kings) as far back as the 13th century. In some European countries, including Germany, it took three centuries for the accomplishments of Italian Renaissance to become part of everyday medical practice, when the necessary medical infrastructure and hygienic system (such as drinking water supply and drainage) were set up, like in Munich by the famous medical professor Max von Pettenkofer, the "pope of hygiene"[26], at the end of 19th century.

Gynecology and obstetrics: Practice dominated by women

In her excellent article on pregnancy, childbirth, and child care[27], Donatella Lippi follows the development of gynaecology in Italian Renaissance. There were only a few medieval women authors (which is still more than in the

26 Gerhard Pettenkofer: Von Wahrheit und Wirklichkeit. Dass Hygienesystem des „Hygienepapstes" Max von Pettenkofer, Deutsche Medizinische Wochenschrift, 137th year, booklet (Heft) 51/52 (Christmas edition 2012), p. 2732-2737.

27 Donatella Lippi: Schwangerschaft, Geburt und Wochenbett, l.c., p. 185-189.

early modern times) who published about gynaecology and obstetrics. I shall only mention *Regulae medicinalis* by Trotula, who lived at the turn of the 12th century.[28] Lippi, however, fails to mention Saint Hildegard of Bingen (1098-1179), who not only was the first great woman physician in Germany but also a contemporary of Trotula. Hildegard wrote two great medical works of the 12th century *Liber simplicis medicinae* a.k.a. *Physica* (1151-58) and *Liber compositae medicinae* a.k.a. *Causae et curae* (1151-1158).

The great problem with Italian Renaissance, however, was that pregnant women had only a limited benefit from the growing knowledge in gynaecology and obstetrics and not before the 16th century.[29] Another paradox, from the modern point of view, is that men published about gynaecology and obstetrics but in practice it was women who took care of pregnancies and childbirth. Religious paintings of the 16th and 17th century such as those about the birth of St. John the Baptist or Virgin Mary's childbirth almost never show men, but women, especially relatives and neighbours, and, of course, midwives.[30] Men, as we see, were not needed.

Conclusion

Italian Renaissance was an important stage in the progress of European civilization and medical culture that saw a number of improvements in material wellbeing, quality of life, and life expectancy. However, it took much longer for many of the progressive ideas of the time to take root in everyday life. Knowing what we know now, we must admit that the history of medicine has played an important role in the survival of European Jewish-Christian-Islamic civilisation. The Mannheim exhibition is an important contribution to European medical history. It demonstrates more than ever that medical history is an important perspective of general history of European civilization.

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28 The handwriting of this opus is preserved as pergament handwriting of 13th century in the Bibliotheca Medicea Laurenziana in Florence (Cod. Pluteo 73.37c.2r).

29 M. L. Altieri Biagi, C. Mazotta, A. Chiantera and P. Altieri: Medicina per le donne nel Cinquecento. Testi di Giovanni Marinello e di Girolamo Mercurio, Torino 1992.

30 This painting „Birth of Virgin" is a fresco in the cathedral of Prato (near Florence), made in 15th century.