

ON A POSSIBLE DATING OF MENDEL'S NOTES AND KNOWLEDGE ON METEOROLOGY

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ABSTRACT - It has been long assumed that Mendel's statistical knowledge at least partially originated from his interest and studies in meteorology. While some of his textbooks he used for study are known, others remained unidentified and its has remained also not possible so far to date some of the handwritten notes that Mendel left in his textbooks. We here provide a first dating of Mendel's notes in his physics textbook of August Kunzek and identify the remaining unidentified textbook that he had used for his first homework on meteorology.

While Mendel's most famous work is his 'Experiments on Plant hybrids', most of his scientific works were focussed on meteorological topics. It has been assumed for a long time, that his interest in statistics and his statistical knowledge have originated from his studies in meteorology.¹ However, it has been very difficult so far to exactly date the time when Mendel obtained parts of this knowledge as especially on his earliest meteorological work in the 1850s not much is known. For example, we were only relatively recently been able to find a previously unknown report of Mendel in 1857 in which he had described.

The earliest primary evidence has been a homework on Physics that Mendel had to write when he first tried to obtain a teaching certificate.² The question Mendel had to answer was given by Andreas von Baumgartner (1793-1865) to him. In his work Mendel had to describe 'The mechanical and chemical properties of the atmospheric air and the formation of the winds'.³ From his homework it is obvious that Mendel at that time had obtained some knowledge on meteorology. In the second part of his report Mendel described on 4 manuscript pages the formation of wind by heating of individual air masses. He explains in his text the circulation of the atmosphere, the influence of the earth rotation on the rotation of the wind, and also Passat winds and Monsoons and the formation of land- and sea-winds, ending with the typical occurrence of West- and Southwest winds in Western Europe.⁴ While Mendel's work on Physics and meteorology was evaluated quite favourable, his second homework in Natural History was evaluated quite negatively and together with a failed oral exam Mendel eventually missed to obtain the wished teaching certificate.⁵ At the end of his physics homework Mendel however left some information in the form of author names, whose work he had used for his homework. Those included for

example A. v. Baumgartner, Ettingshausen, Pouillet, Kunzek, Hofer und Hessler.⁶ Most of those textbooks have been already identified by J. Munzar (1971). The only textbook or author that has remained unidentified was that of Pouillet, which then could not be identified. Claude Servais Mathias Pouillet (1790–1868) however has been a very prominent French physicist at his time who published several textbooks. In Germany his main textbook was published since 1842/43 by Johann Heinrich Jacob Müller (1809–1875) in a German translation. The textbook, which was also known as Müller-Pouillet, was richly illustrated and dealt with most aspects of experimental physics and overall saw eleven editions until 1925. The editions from the 1840s were most likely those that have been used by Mendel for his homework. A French meteorological textbook of Pouillet from 1850 most likely in contrast was most likely not available to Mendel.

Of particular interest are the meteorological textbooks by August Kunzek⁷ that Mendel mentioned in his homework, because it had remained unclear so far if Mendel might have visited Kunzek's meteorological lectures during his time University in Vienna. This possibility has been previously already considered by Weiling (1967), however, it was then noted, that the official lectures by Kunzek might have overlapped with other lectures Mendel had inscribed to. Interestingly the original textbook of Gregor Mendel has survived, containing several handwritten marginal notes. It has remained however impossible so far to date those notes in any more detail leaving it unclear if Mendel had added them at a later date. The most well-known note is a short motto that Mendel had left on the title page. It reads "*He who cannot be lonely is not reconciled to himself*".⁸ However, we here can report that this short motto in itself already provides the best hint for a more accurate dating, as this exact phrase is no invention of Mendel but a direct quote from the more than 4000 pages comprising monumental novel "*The Knights of the Spirit*"⁹ by Karl Gutzkow (see there Vol. VII, p. 209). Until 1851 the novel was only published as a sequential novel in the *Leipziger Deutschen Allgemeinen Zeitung*. From 1851 up to 1852 the individual volumes were then published as bound volumes. As the 7th volume was to our knowledge never published in a newspaper edition Mendel made his note most likely during his time of study in Vienna either in 1851 or 1852. It remains to be noticed that Mendel's brother in the monastery, František Tomáš Bratránek (1815–1884), was in direct contact with Gutzkow for whom Bratránek then contributed articles for his encyclopaedia "*Unterhaltungen am häuslichen Herd*".¹⁰ The quote thus fit well to the reading habits of the Augustinian monks at the time. The general interest of Bratránek in Gutzkows monumental novel is also apparent in the necrologue on Bratránek in which there was a direct reference to the "Knights of the Spirit", to which Bratránek became known during his Vienna university studies in the house of the family Goethe, and "*which he later met again, to his delight, in the fine social circles that Josephine von Wertheimstein and Sophie v. Todesco, relatives of the art-loving Gomperz family, gathered around them.*"¹¹

Conclusion: Based on a literature dating it appears that Gregor Mendel visited meteorological lectures at his time at the university in Vienna between 1851 and 1852. A short motto noted by him in his own meteorological textbook turned out to be a direct quote of a monumental novel by Karl Gutzkow. As far as we are aware this small note is also the only direct hint on Mendel's more private interest in fictional literature and Belles-lettres.

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NOTES

- 1 See Weiling 1970.
- 2 Munzar 1971.
- 3 Munzar 1971.
- 4 Munzar 1971.
- 5 Gicklhorn 1969.
- 6 Munzar 1971.
- 7 **August Edler von Lichton Kunzek (1795–1865)** was a physicist born in Königsberg. After studying in Olomouc/Olmütz and Vienna he worked from 1824 to 1847 as Professor of Physics at the university in Lemberg /Lwiv. He was followed in his position as the chair of the Physics department by Mendel's later mentor Alexander Zawadski. From 1848 onwards A. Kunzek was the Professor for Physics at the university in Vienna.
- 8 Translated by the authors of the present article. The original states: „*Wer nicht einsam sein kann, ist auch nicht versöhnt mit sich.*“ Quote as printed in: Matalová & Matalová 2022, p. 186. Vgl. Orel 1996, S. 2 und Weiling 1967, S. 265–266.
- 9 Title translated by the authors of the present article. The novel was published under the German title: “*Die Ritter vom Geiste*”.
- 10 See Schram 1887, p. 42.
- 11 See Schram 1887, p. 41. Quote translated by the authors of the present publication.