**A previously unknown journey by Gregor Mendel to Leipzig in September 1865 and his likely participation in the Botanical Congress in Erfurt**

**ACCEPTED WITH MINOR REVISION BY FOLIA MENDELIANA (20/06/2023)**

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**Abstract**

A hitherto unknown visit by Gregor Mendel to Leipzig, Germany, in September 1865 has been discovered in digitized German newspapers. This trip took place after his two lectures on his pea experiments but before the publication of his later famous article on plant hybrids. The probable purpose of this trip was to visit the Second Congress of German Horticulturists and Botanists and Gardening Enthusiasts, combined with the German Exhibition of Agricultural Products in nearby Erfurt. Crosses between plant species and varieties were among the main topics of the Congress. Mendel's participation cannot be proven beyond doubt, but other participants in the Congress arrived in Leipzig at the same time as Mendel and even stayed in the same hotel. In addition, the uniqueness of the Exhibition and the topics covered at the Congress make it very likely that this was the purpose of his trip. We propose that Mendel's participation in the Congress could explain the early publication of an abridged version of Mendel's article in Bamberg and that the Erfurter plant breeder and seed merchant Ernst Benary was acquainted with Mendel's pea experiments.

*Introduction*

Our understanding of how Gregor Mendel made his later famous discoveries about the inheritance of traits, as published in his seminal 1866 *Pisum* paper, is severely hampered by the few primary historical sources available. Therefore even a snippet of information can be instrumental. A search in digitized historical newspapers has revealed that Gregor Mendel was mentioned in the German *Leipziger Tageblatt* of Sunday, September 9th, 1865, as having arrived at the hotel Stadt Hamburg in Leipzig ("*Mendel, Stifts-Capit. a. Brünn*")(Fig. 1). Hotel registrations were often published in the newspapers a few days after arrival, suggesting that Mendel could have arrived on Friday, September 7th. Until now, this journey to Leipzig in the Kingdom of Saxony was unknown (Iltis 1924; Richter 1943; Orel 1996; Vollmann and Matalová 2016).

A close up of a text

Description automatically generated with low confidence

Figure 1. Mendel's name (Stifts-capitular from Brünn, Hotel Stadt Hamburg) on the list of arrivals in the *Leipziger Tageblatt* of Sunday, September 9th, 1865 (Deutsche Digitale Bibliothek).

In the fall of 1863, after eight years, Mendel had completed his pea-crossing experiments. He had given his pea lectures at the Natural Sciences Society in Brünn in February and March 1865, and his manuscript was due for submission by the next January. What could have been the reason for Mendel to travel to Leipzig? In 1862 and 1863, Mendel participated in international pleasure trains (*Vergnügungszuge*) during the summer holidays (Van Dijk and Ellis 2020; Van Dijk 2020). However, there are no records of pleasure trains calling at Leipzig in the digitized newspapers in August or September[[1]](#footnote-1).

There is no evidence that Mendel was part of a group of travellers. Only one other arrival from Brünn is mentioned on September 8th, 9th, and 10th; that of a factory owner, Paul Pauls, with his family. They stayed in another hotel (*Stadt Rom*), and there are no indications that Mendel and Pauls knew each other. No other Austrian travellers were registered in the hotel *Stadt Hamburg*. Apparently, Mendel had travelled alone.

The timing of Mendel's visit to Leipzig is quite remarkable. It coincided with the upcoming 14th German Beekeepers meeting, a significant event scheduled in Brünn from September 12th to 14th. This convention was led by Abbot Napp, and the participants were primarily accommodated in the Augustinian monastery in Altbrünn. One notable attendee was the famous Silesian beekeeping priest Johann Dzierzon, who conducted crosses between black German and Italian yellow bees and observed color segregation ratios in drones produced by the hybrids. Mendel was likely aware of Dzierzon's work through the books possessed by his close friend Johann Nave, who had passed away less than a year before (Zirkle 1951; Van Dijk and Ellis, 2020).

Orel (1996) noted that Mendel was not on the list of participants of the Beekeeper's Congress and attributed this to Mendel's teaching duties. However, according to Weiling (1993), there was a summer holiday break in August and September. We do not know whether Mendel stayed in Leipzig on an outward or return journey. It is unlikely that, had there not been an excellent reason, Mendel would have passed up the unique opportunity to attend an important beekeeping conference in Brno. Mendel became a Moravian Beekeepers' Association member four years later (Matalová and Matalová, 2022), so we can expect that he was already interested. Mendel, thus must have had a significant reason for his journey to Leipzig.

*The Erfurt Botanical Congress end Exhibition*

Although the purpose of Mendel's journey cannot be established with complete certainty, it was very likely the Second Congress of German Horticulturists and Botanists and Gardening Enthusiasts, combined with the German Exhibition of Agricultural Products[[2]](#footnote-2) held in Erfurt from September 9th to September 17th. We will refer to these two events as the (Botanical) Congress and the (Agricultural) Exhibition, respectively. The first Botanical Congress and the Agricultural Exhibition had been held in Mainz in 1863.

In the days around Mendel's arrival in Leipzig, at least three Austrians had arrived in connection with the Erfurt exhibition. Horticulturist Nowotarsky from *Fünfkirchen* (today Pécs, Hungary) arrived in Leipzig one day before Mendel. Secondly, the gardener Kellermann from Vienna arrived on the same day as Mendel. Nowotarsky and Kellermann had submitted entries to the Exhibition (Anonymous 1865a). Thirdly, the general secretary of the Viennese Horticultural Society, J. G. Beer, checked in two days before Mendel in the same hotel, Stadt Hamburg. Beer was the official delegate of the Austrian Government (*Fremden-Blatt* August 25th, 1865).

In general, from 8th to 16th September, many professional horticulturists arrived in Leipzig: according to the arrival list in *Leipziger Tageblatt* an exceptional total of 67 in eight days. Eleven can be directly linked to the Erfurt event, by entries for the Exhibition, as jurors, or as chairmen of conference Sections. We thus conclude that Mendel arrived in Leipzig when many horticulturists were on their way to the Erfurt Exhibition and Conference, suggesting that this event could very well be the goal of Mendel's journey. Erfurt was three and a half hours by train from Leipzig. Therefore it is likely that the participants of the Congress and Exhibition travelled on to stay in Erfurt. Unfortunately, no data on arrivals in Erfurt are available. For the rest of this article, we will assume that Mendel indeed visited the Congress and Exhibition in Erfurt.

Erfurt, located 100 km southwest of Leipzig, was the center of the German vegetable and ornamental plant seeds industry. Heinrich Schwerdt wrote in 1867 in „*Das industrielle und kommerzielle Thüringen*“, two years after the Erfurt exhibition:

"Erfurt, however, is at present the metropolis of the German garden industry and has shown this to the whole world by the brilliant triumphs it celebrated at the great Exhibition of garden products in 1865. 37 merchant gardeners and seed merchants supply half the world with horticultural products from there, and more than 120 vegetable gardens do important business in the local economy. Among those are the world-famous companies A. Haage Jun., Benary, Jühlke, Ch. Lorenz, Plag, J. C. Heinemann, Haage and Schmidt, Moschkowiz and others.”

The Erfurt Exhibition was one of the largest international agricultural exhibitions of 1865. The *Brünner Zeitung* of April 24th, 1865, mentions it in the same breath as other large garden exhibitions that year in Amsterdam, Paris, and London. The Exhibition opened on Sunday, September 9th, at 1.00 p.m. and closed on Monday, September 17th, at 7.00 p.m. The Congress lasted from September 9th to Wednesday, September 13th.

We know from a *Neuigkeiten* newspaper article of July 1861 that Mendel crossed peas, beans, and cucumbers to obtain better varieties (Van Dijk *et al.* 2018). In addition, he bred hundreds of fuchsias and carnations in pots. Mendel had been a member of the Horticultural Section of the Agricultural Society in Brünn since 1863 (Orel 1996). The Exhibition and the program of the Congress (which we will discuss in detail below) would have been very appealing to Mendel. We know that Mendel was an enthusiastic visitor to exhibitions: he attended the World Exhibitions of 1862 in London and 1873 in Vienna and the Beekeeping Congress in Kiel in 1871.

In the autumn of 1864, the Horticultural Section of the Agricultural Society in Brünn was invited to participate in the next year's Erfurt Congress and Exhibition. At the annual meeting in October, the chairman asked the members to participate in the Erfurt event (Anonymous 1864). Mendel may have heard about the Erfurt Congress and Exhibition at this annual meeting for the first time. It was suggested to send representatives, and the names of Trapp, Slaby, and Pohl were mentioned. However, in March 1865, it was decided that Trapp would instead visit the Exhibition in Linz, from 10th-12th September, which overlapped with the Erfurt Congress and Exhibition (*Mährischer Correspondent*, 08-03-1865). The names of Slaby and Pohl cannot be found in the arrival lists in *Leipziger Tageblatt*. Further information about the participation of the Brünn Horticultural section in the Erfurt event is lacking.

*Participants that Mendel would know*

Mendel will have known J. G. Beer from his university study in Vienna in 1852 and 1853. Mendel's close friend Johann Nave was nominated by Beer as a new member of the Zoological Botanical Society in Vienna in 1853. Mendel was also a member of this Society. Beer, a self-though botanist, was supported in completing his orchid book by the Viennese botany professors Fenzl and Unger (Behn 1873). At the same time, Mendel was a student of Fenzl and Unger, and therefore Mendel and Beer likely knew each other. The horticulturists that arrived in Leipzig between September 7th and 16th were distributed over 17 hotels. Is it a coincidence that Beer and Mendel both stayed in Hotel Stadt Hamburg?

Another person that Mendel would have known at the Erfurt event was his former botany professor Eduard Fenzl (Morren 1865). Fenzl was vice president (*Vice-Präsident*) of the Viennese Horticultural Society (with Beer as the general secretary). However, Fenzl did not travel from Vienna because, on September 7th, he was in Karlsruhe to celebrate the 25th anniversary of the Natural Sciences Society of the Palatinate (*Karlsruher Zeitung* 09-09-1865). He would have travelled via Kassel to Erfurt, explaining his absence from the arrivals list in the *Leipziger Tageblatt.*

Fenzl had a strong interest in the applications of hybridization in agriculture. For example, in February 1858, he lectured at the Horticultural Society in Vienna on the results of hybridization experiments in horticulture (*Wiener Zeitung* 11-03-1858). A year earlier, Fenzl had already written: "Large numbers of our often very different peas, beans, lettuce, cabbages, melons, potatoes, vines and types of fruit... have all emerged from partly unique, partly repeated hybridizations of pure species, varieties or fertile hybrids." Hence Mendel and Fenzl shared an interest in applying hybridization in horticulture.

*The program of the Botanical Congress*

The aim of the Congress was that science would profit from practical experience and, conversely, the results obtained in the field of science would advantage practice and thus benefit the country's welfare. The Congress was divided into several Sections that focused on different questions widely announced in February in the newspapers. The subject of Section I read: "On Darwin's theory, in particular on the breeding of new plant races by selection." [[3]](#footnote-3)

Later nine questions were added to specify this topic:

1. What are the main elements of Darwin's theory, and which experiences from the field of horticulture speak for and against these?
2. How does the so-called acclimatization relate to the localization of our cultivated plants?
3. What verifiable results do we owe to horticulture by crossing species on the one hand and varieties on the other?
4. What are the experiences with the reversion of derived forms obtained by selection or crossing to the intermediate or the original forms?
5. In which families, genera, and species is true-breeding of the desired change achieved the fastest?
6. Does artificial selection result in more intermediate forms than cultivation without selection?
7. Does selection generate new forms, or does selection only preserve certain forms under cultivation?
8. When new forms are produced by selection, do they distance more from the original form than the non-selected forms, or are they just more sharply demarcated?
9. What is known about the decrease or increase of fertility of forms produced by selection or crossing?

Crossing and hybridization were worthy topics in this Section, which would have been highly interesting for Mendel. Acclimatization, introducing new crops and domestic animals, such as the silk moth and soybean in Europe, received much attention in the mid-1800s. Mendel himself had been trying to acclimatize New Zealand spinach (van Dijk *et al.* 2018). Sections II, about the shaping of fruit trees, and III, about the problems with inconsistent nomenclature and terminology, may have been less attractive to Mendel. Section IV definitively was since it again involved hybridization. This Section dealt with the "Developmental history of some important *Florblumen* (annual flowering plant species), such as Matthiola, Aster, etc., from the first beginnings to the present range in varieties." For this Section, there were three specific questions, all of which would have been of interest to Mendel:

1. How, where and when did the most distinguished types of these *Florblumen* originate, and what is the pedigree of today's varieties?
2. What experience is there that the offspring from fertilization (pollen crossing) of two plant species remain sterile, and is their pollen development so inhibited that the fertilization functions are prevented?
3. Is it justified that the hybrids or intermediate forms/species which have arisen in this way produce no seed and that this property perfects and lengthens the beauty and duration of the flower? What gain would then arise from this in practice?

Sections V and VI were related to ornamentals and garden design (v) and gardening equipment (VI). The Congress Sections had the ambitious task of preparing the answers to the various questions in advance and presenting them on Wednesday at the joint closing session (*Kölnische Zeitung* 14-9-1865).

The program of the Congress was as follows:

* Saturday, September 9:

3 p.m.: General assembly of the members of the Congress, the constitution of the Sections, and work of the same until 8. p. m.

* Sunday, September 10:

7 a.m. to 9 a.m.: work in the Sections.

* Monday, September 11:

8 a.m. to 12 p.m.: work in the Sections. Afternoon 4 p.m. to 7 p.m.: General assembly.

* Tuesday, September 12:

A pleasure tour (*Vergnügungsfahrt*) to Eisenach, with the famous Wartburg castle and to Reinhardsbrunn, with castle and park.

* Wednesday, September 13:

9:00 a.m. to 12:00 p.m.: plenary closing session of the Congress.

*The Exhibition*

There were almost 800 entries in the Agricultural Exhibition (Anonymous 1865a), with 4/5 from Erfurt (*Neue Freie Presse*, September 14, 1865). The exhibition items were presented in the following six Sections:

I. Vegetables and agricultural products (collections of various genera of vegetables, potatoes, mushrooms, grains, flax, hemp, and other textile materials, etc.);

II. Fruit and fruit trees;

III. Potted plants (ornamental plants);

IV. Cut flowers;

V. Arrangements;

VI. Garden furniture, equipment, and props.

The Exhibition attracted around 30,000 visitors (Raßloff, 2021). The Thüringer Eisenbahn sold special tickets from Leipzig and Dresden to Erfurt, including the entrance fee, that were valid for eight days (*Dresdner Nachrichten* September 5, 1865).

The weekly journal of the Association for the Promotion of Horticulture in the Prussian states wrote:

"Every day, from early morning until late evening, trains brought curious visitors, sometimes from great distances. Those who could not return home did not always find accommodation in the city's many taverns but were, on the other hand, warmly received and entertained by the citizens of Erfurt. It was like a migration of people: they came, explored the Exhibition, and left again. Only the members of the Congress associated with the Exhibition came again in the morning to familiarize themselves more with the treasures of the Exhibition. They exchanged information but also took part in the deliberations in the rooms of the Karthaus." (Anonymous 1865b, p. 306).

An entry undoubtedly of interest to Mendel was that of the before-mentioned Leopold Kellermann from Vienna. Kellerman was an under-gardener in the Imperial Gardens at Schönbrunn. The entry consisted of a herbarium of hybrid plants obtained by interspecific crosses. Most of the crosses were made in the Araceae family (South American genera *Xanthosoma*, *Philodendron,* and *Anthurium*) but also in the genus *Streptocarpus*, an Afrotropical genus of flowering plants in the family Gesneriaceae, with showy flowers. The herbarium showed the segregation in the F2 and the result of two backcross (B.C.) generations. The captions to the specimens read (Anonymous 1865a):

"To demonstrate that one plant species can be transformed into another through regeneration (*Regenerirung* - successive generations is meant here, not regrowth), the following example:

Form No. XI. Dried Specimens. From by cross-pollination of Streptocarpus polyanthus with Streptocarpus Rexii, bred in 1860, flowered in 1861 with sterile pollen, its partial fertility attained in 1862, the resulting plants [F2] giving about one-third of form no. XI [the hybrid form], two-thirds, on the other hand, varied more or less in both directions.

Form No. XII. Dried Specimens. By crossing Form XI with Streptocarpus Rexii. Bred in 1862 with partially fertile pollen [BC1].

Form No. XIII. Dried Specimens. Bred by crossing Form No. XII with Streptocarpus Rexii in 1863, the resulting plants are old [i.e. original] perfect Streptocarpus Rexii [BC2].

Form No. XIV. Dried specimen obtained by crossing form No. XII with Streptocarpus polyanthus. Bred in 1863 very profusely and persistently flowering and fully fertile!"

Kellermann noticed the segregation in the F2, although with one-third maintaining the hybrid form instead of half as in the case of Mendel's pea hybrids. However, in Kellermann's case, interspecific hybrids were partially sterile, and many genes were probably segregating in the F2, and the size of the F2 population may have been much smaller than Mendel's. Nevertheless, there was an apparent similarity, and Mendel may have discussed this with Kellermann. The *Neue Freie Presse* described this entry as: "an herbarium to show the changes in form caused by crossing" (November 13, 1865), and it was awarded a special prize, a golden medal, testifying that it attracted much interest. Morren (1865) also mentioned explicitly that botanists were interested in Kellermann's herbarium. At the World Exhibition in Vienna in 1873, Kellermann would again be awarded a prize for his 15 interspecific Arorid hybrids obtained by crossing. Eduard Fenzl (1873) wrote in the official report at that occasion: "The crowning of all specialties, however, was Leopold Kellermann's collection of hybrid aroids, which offered a great deal of instruction for every specialist particularly concerned with producing hybrids." (p26). Unfortunately, nothing was published in later years about Kellemann's quantitative crossing experiments in *Streptocarpus.*

The bookstore F.W. Otto from Erfurt, which specialized in horticultural literature, had a stand on the exhibition grounds with books on display (Anonymous 1865c). A special Congress catalogue was printed containing all horticultural literature on the market in Germany, comprising almost 1300 titles, including books on hybridization such as by Gärtner, Lecoq, and Gschwind.

The banquet offered to the jury, and the guests on Sunday consisted of 500 covers. Many speeches were delivered, and toasts made (Morren 1866). According to the *Tagespost Graz,* from September 21, 1865, overall, some 700 horticulturists and botanists attended the Congress and Exhibition.

*Criticism of the Botanical Congress*

The Exhibition received positive reviews in the newspapers, but the Botanical Congress was criticized. The *Magdeburger Presse* of November 6, 1865, wrote about the Congress. "The result of the usual discussions, on the whole, a very insignificant one." The executive board of the Horticultural Association had neglected to invite experts who could give a well-thought-out presentation on the questions to be dealt with. Some chairpersons of the Sections who were supposed to report at the general assembly were absent.

"The first Section had to discuss Darwin's theory, particularly breeding by selection, to which nine questions were asked. The report of the Section in the General Assembly extended only very generally to Darwinian theory; it had been concluded that that theory was valid only if it referred to races, not species. There was no actual discussion; only a few cases from horticultural experience were reported, which were more or less related to Darwinian theory. Since Darwin himself related his theory with certainty to the origin of species and made a sharp distinction between race and species, the conclusion of the Section was a rejection of the theory. Still, the report did not state the reasons for this conclusion."

However, the newspaper thought that,

"the opportunity for personal encounters and personal exchanges with colleagues from the most distant regions can claim at least as much value as speeches and discussions in meetings, where, as a rule, only a few people tend to speak."

The Viennese *Neue Freie Presse* wrote immediately after the Congress on September 14:

"The president inept, the preparation of the section leaders for the nine questions to be answered mostly inadequate, the interest of the congress members weak."

Two months later, Dr. Wilhelm Hamm wrote in the same newspaper:

"As far as the botanical Congress is concerned, the less one talks about its results, the better it will be" (November 13, 1865).

The most successful Section of the Congress was Section II on shaping/pruning fruit trees. Its secretary, Goeschke (1866), reported that the chairman led the meetings based on the questions that had been proposed. Nine speakers took part in the debate in the first two sessions. In addition, there was a third extra session with 60 participants. Jäger (1866), however, noticed that no report by this Section was presented at the general assembly.

Sections IV (developmental history flowing plants) and VI (new Horticultural equipment) had no or only one participant, respectively (Jäger 1866). Sections I, Darwin's theory, and III (nomenclature of garden plants) were better attended but yielded few results. According to Jäger (1866), it was felt that Darwin's theory could not yet be definitively discussed. In Section III, according to Jäger, a collection of ornamental plants was reported, "the names of which every listener had forgotten before he even had left the hall".

Several reasons for the failure of the Congress were given. In general, few professional horticulturalists and botanists attended the conference. Morren (1866) suggested that this was because of the commercial focus of the event and because of competition by the Society of German Natural Scientists and Physicians meeting a week later in Hannover. The questions were too many, too complex, and broad to answer (Pfennig 2010). In retrospect, in 1888, Theodor Rümpler, the secretary of the Horticultural Society Erfurt, concluded that a lack of "professional intelligence" was the cause of Congress's failure (cited in Pfennig 2010).

*Did Mendel meet Ernst Benary and the Bamberger gardeners?*

As the *Magdenburger Zeitung* had written, networking was possibly even more important than the group discussions during the Congress itself. Mendel may have spoken with others about his pea experiments. Two indications support this idea.

First, Mendel may have been in contact with Ernst Benary, owner of one of the great Erfurt seed trading companies and a Fellow of the Royal Horticultural Society in London. Benary was a member of the board of the Erfurter Horticultural Society and the Exhibition's organizing committee vice president. Benary presented many vegetables at the Exhibition, including five varieties of edible fresh peas (*Zucker-Erbsen*) and 23 varieties of shelling peas (*Kneifel-Erbsen*). In later years Mendel would order seeds of vegetables, ornamental plants, and flower bulbs from Benary several times (accounts preserved from September 21, 1873, and (paid) November 2, 1878; Matalova and Matalova 2022). The last bill contains the note "*auf Rechnung des Prälaten*" (on the account of the prelate), implying that Mendel was known to the firm of Benary. Although Mendel placed the order from the widely distributed Benary catalog, it is striking that no orders were placed with the other large seed companies in Erfurt, such as Heinemann or Haage, at least that is not apparent from the preserved accounts.

According to Eichling (1942), in 1878, when he visited Erfurt as a young seed dealer working for a French firm from Nancy, Benary knew about Mendel's special experiments with peas:

"It was then that Benary mentioned Mendel at Brünn and his experiments with garden peas, *Pisum sativum*. I told Benary that Brünn was on my itinerary on my way from Prague to Vienna and he suggested that I try to meet the Abbot if possible. I did not get very specific information about Mendel's work from Benary, but I had met with such a cordial reception from that renowned seed grower that I felt in duty bound to carry out his request."

Eichling's arrival in Prague can indeed be traced in the newspapers (Prague, July 30, 1878, *Epoche*). Eichling reported on his visit to Mendel almost 65 years later in a paper called "I talked with Mendel" (Eichling 1942).

A second possible connection between Mendel and breeders or market gardeners at the Erfurt congress is with the Horticultural Society (*Gartenbau Vereins*) and Chamber of Commerce (*Gewerbe Vereins*) in Bamberg, Germany. Mielewczik *et al.* (2017) discovered a condensed version of Mendel's 1866-paper ("Experiments on Plant-hybrids") in the magazine of the Chamber of Commerce. The abridged article omits all statistics and is clearly intended for practical application. Bamberg was an important and old center for seed production and the vegetable trade (Mielewczik *et al.* 2017). Mielewczik *et al.* suspected that the Bamberger teacher, naturalist, and pastor Andreas Haupt (1813 –1893) was the author of the anonymous article. However, they also noticed that Haupt was not a member of the Chamber of Commerce.

Strikingly the abridged paper appeared in the issues of February and March, which means the article must have been written in January 1867, or earlier. The question is whether one of Mendel's reprints or the 1866 volume of the Verhandlungen was used for this article. There was a journal exchange between the Natural Sciences Society in Brünn and the Chamber of Commerce in Bamberg. The first possibility would indicate a personal connection between Mendel and someone in Bamberg. We know that Mendel sent his reprints to Carl Nägeli and Anton Kerner when they were ready in late December 1866 and early January 1867. The journal exchanges with other institutions in suggest that the Proceedings of Natural Sciences Society in Brünn Volume 4 arrived there a few months later. For example, the Royal Netherlands Academy of Arts and Sciences in Amsterdam and the German Geological Society in Berlin received the Proceedings in March 1867 (van der Post, 1867; Anonymous 1867b). Either the reprint was used as the article's source or negotiated with Mendel before the reprints became available.

Mendel corrected minor printing errors in some of his reprints (in 6 of the 13 now-known reprints; Weiling 1974). These printing errors are also present in the journal edition of the Versuche. So, suppose the corrections are in the Bamberger article. In that case, this is a second indication, in addition to the early appearance, that Mendel sent a reprint to Bamberg. Some of Mendel's corrections are in text that has not been copied or was slightly rewritten in the abbreviated Bamberger version and are, therefore, not informative. The most critical correction, however, is "*Je*" instead of "*In*" (see <https://vlp.mpiwg-berlin.mpg.de/library/data/lit26745>).

The text of the Bamburger article contains this correction "***Je*** *zwei differirende hiegegen vereinigen sich an der Hybride zu einem neuen Merkmale* "(The translation of the corrected sentence is: "Two each of the differing traits itemized above were united by fertilisation" – Müller-Wille *et al.* 2020). It is also possible that the Bamberger author noticed and corrected the error, but a less particular word, such as "*Die*" (The), would likely be used when correcting "*In*", instead of "*Je*" (Each). Together with the early appearance, it seems likely to us that Mendel sent a reprint to someone in Bamberg in January 1867[[4]](#footnote-4). The recipient of Mendel's reprint must have known it was an interesting article. A good possibility is that the unknown Bamberger heard about Mendel's pea experiments at the Erfurt Congress.

The Horticultural Society of Bamberg took the Erfurt Congress program very seriously. At the April meeting, the questions of the Botanical Congress were discussed in advance (*Bamberger Zeitung* April 1, 1865). The *Tag-Blatt der Stadt Bamberg* wrote on September 9, 1865, "The executive committee and board members of the local horticultural association left Bamberg for the Erfurt exhibition and congress."

Master gardeners Hollfelder and Joh. Schley represented Bamberg at the Exhibition with a large assortment of cabbage varieties, which won a large silver medal. The medal was festively handed to the Horticultural Society at the October meeting. Daniel Mayer, landscape gardener, and a board member, reported on the Erfurt exhibition at the monthly meetings of October and November 1865. Mayer was also a member of the Chamber of Commerce and, therefore, possibly the anonymous author of the abbreviated Mendel 1866-paper. There were more close connections between the Chamber of Commerce and the Horticultural Society in Bamberg. Dr. Eugen Schneider, mayor of Bamberg and Rector of the Commercial School, was the chairman of the Horticultural Society and a member of the Chamber of Commerce. The merchant Franz Kern, secretary of the Horticultural Society, was also a member of the Chamber of Commerce.

*Conclusion*

In conclusion, we consider Mendel's participation in the Botanical Congress and the Agricultural Exhibition in Erfurt very likely, given that his arrival in Leipzig coincides with that of other congress participants, his interest in horticulture and the relevance of the topics in the pre-announced programme. Furthermore, his absence from the Beekeepers meeting in Brünn at the same time is remarkable. It is quite possible that networking made the Bambergers and Benary aware of his pea crossbreeding experiments, leading to an early publication of an abridged version of Mendel's Versuche and Eichling's later visit to Mendel in 1878. Earlier researchers suggested that Mendel's motivation for his pea experiments was purely scientific, such as testing a preconceived theory of heredity (Fisher 1936) or showing that new species could arise from the hybridization of existing species (Olby 1979). We have argued that Mendel's pea experiments were purely scientific but emerged from an applied breeding program (Van Dijk et al. 2018). Mendel's probable involvement in the Erfurt event further supports our contention that Mendel's pea experiments had a closer relationship to breeding practice than previously suspected.

*Acknowledgments*

We are very grateful to Adrienne Jessop and Julie Hofer for their comments on draft versions of this article.

*Databases used:*

Besides Google Books, the following specific databases were used:

* Deutsche Digitale Bibliothek (<https://www.deutsche-digitale-bibliothek.de/>)
* digiPress - Das Zeitungsportal der Bayerischen Staatsbibliothek (<https://digipress.digitale-sammlungen.de/>)
* ANNO Historische Zeitungen und Zeitschriften, Austrian National Library (<https://anno.onb.ac.at/>)
* Digitized Library operated by the Moravian Library MZK (<https://www.digitalniknihovna.cz/mzk>)
* Hathi Trust Digital Library (<https://www.hathitrust.org> )
* Biodiversity Heritage Library (<https://www.biodiversitylibrary.org/> )

*References:*

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1. The only Leipziger *Vergnügungsfahrt* in 1865 was to Hamburg on June 3rd  (*Leipziger Tagesblatt* 4-06-1865). [↑](#footnote-ref-1)
2. *zweiten Congress deutscher Gärtner, Botaniker und Gartenfreunde und zur allgemeinen deutschen Ausstellung von Gemüsen und landwirtschaftlichen Produkten, Obst, Pflanzen, Blumen, Garten Gerätschaften u.s.w*. [↑](#footnote-ref-2)
3. By the way, August Schleicher, a German linguist, who corresponded with Darwin, informed Darwin about the Congress on February 9, 1865 "This summer a Congress of botanists, horticulturists and seedsmen and a great exhibition shall take place at Erfurt. In the program just published I read, that the first object of transactions is 'the Theory of Darwin'." (DCP-LETT-4770). (<http://darwin-online.org.uk/>). [↑](#footnote-ref-3)
4. Mielewczik *et al.* (2017) also assume that the Bamberger article was based on a reprint of Mendel, without giving any arguments and express the presumption that:

   "By the way, the Bamberg reprint probably also raises the question of the origin of the Mendel special print from the estate of Theodor Boveri, who was born and grew up in Bamberg and the founder of the "chromosome theory" of heredity. Until now, it had been assumed that this was the reprint that Mendel had sent to Carl Nageli (van der Pas 1976, Weiling 1984). An origin from a Bamberg provenance now seems just as possible." [↑](#footnote-ref-4)