Gregor Mendel: The 200-Year-Old Monk

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Who does not know Gregor Mendel, the Austrian Monk of the 19th century? Every day when we look at patients with monogenic disorders and discuss risks of recurrence, we see Mendel's principles of heredity being followed. As medical geneticists we read, write and talk about Mendelian genetics every day without remembering his pea plants. Mendel is in our genes, but this year is the year to remember him, the scientist in him and his massive experiments with pea plants, about 28,000 in numbers! No wonder his ratios came close to the reality. When he reported his observations in 1865, the scientific community ignored it. By 1900, the interest in Mendelian principles appeared, and the 20th century saw the establishment of Mendelian genetics. Statisticians and scientists doubted Mendel's observations and criticized that they were too good to be true. But the interpretation and conclusions were right. Mendelian principles have been used in genetic counselling even before the revolution of genetic engineering.

The non-Mendelian modes of inheritance were observed and later, appropriately explained by genetic mechanisms. The occasional cases of non-penetrance in dominantly inherited disorders and manifesting carriers of recessive disorders made us realise that monogenic vs oligogenic and dominant vs recessive are not watertight compartments but are the ends of a continuous spectrum. With the currently available powerful genomic tools, explanations will become available to many unanswered questions related to aberrations observed in some cases of Mendelian disorders. Genomic medicine of the twenty-first century is working to understand how DNA sequence differences translate into clinical phenotypes. The new insights into translation of genetic variants into biochemical, cellular, and clinical phenotypes may modify the inheritance patterns for genetic counselling (Zschocke et al., 2022).

Gregor Johann Mendel, the 'father of modern genetics', was born 200 years ago, on 20 July 1822. This year the genetics community is celebrating his birth bicentenary in various ways including Nasmyth (2022) revisiting Mendel's famous study 'Experiments in plant hybridization'. The events include a great scientific birthday party to pay tribute to the 'Father of Genetics' in Brno, Czech Republic (https://gregormendel200.org/calendar/). Another interesting activity is to study the genome of the genius by studying DNA samples obtained from the remains found in his tomb. Masaryk University is involved in the archaeological research of the Augustinian tomb at the Central Cemetery in Brno, and subsequent anthropological and genetic analysis of the findings (https://www.em.muni.cz/en/science/14588-researchers-from-mu-examine-genes-of-g-j-mendel).

We also pay our respect to the great scientist! **मेंडेलाय नमः**। We salute Mendel.

References

1. Nasmyth K. The magic and meaning of Mendel's miracle. Nat Rev Genet. 2022; 23: 447–452.
2. Zschocke J, et al. Gregor Mendel and the concepts of dominance and recessiveness. Nat Rev Genet. 2022;23(7):387-388.