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Mendel and progress in 200 years

This year marks the 200th anniversary of the birth of Johann Gregor Mendel, the internationally-renowned discoverer of the laws of heredity, variability, and inheritable information, the founder of genetics, and one of the greatest geniuses of modern science. Mendel's research not only laid the foundations for a new discipline that studies the transmission of inheritable information from one generation to another, and the relationships between genetic information and characteristics and their environment, but it also became the basis on which all of our current life sciences are built. It is truly almost unbelievable how all the knowledge we possess in the 21st century about molecules, about how we can decode hereditary predispositions, about how we can work with genes and alter them or integrate them into an unrelated organism, is completely consistent with what Mendel predicted in the middle of the 19th century.

Mendel first published his theory of the transfer of the elements of heredity in Brno in 1865, six years after Darwin published his famous book '*On the Origin of Species by Means of Natural Selection*' in 1859. Unlike Darwin, however, Mendel did not attract international attention until the early 20th century, 16 years after his death. This was because he published the results of his research in the journal of the Natural History Society in Brno in 1866 and this journal was distributed to 133 professional institutions, mainly foreign academies, universities, and learned societies. Of the separates that Mendel personally sent to eminent authorities, 10 copies are now known to have been received by, for example, Prof. C. Nägeli in Munich, Prof. T. Boveri in Tübingen, and A. Kerner in Vienna. However, it took time for the natural sciences to develop in such a way that the questions posed by the research were framed in such a way that they were answered by Mendel's 35-year-old discovery. This unusual story in the history of science has become extremely inspiring for many reasons. Mendel knew full well that the concept of his discovery was very new and unique. At the time, he could not find anyone who could identify with his approach to experimental research. Nevertheless, over time, his work has turned into a profound inspiration that has the power to change the world around us and within us.

Mendel has inspired, inspires today, and will continue to inspire people on many levels and in many fields – from science and technology to philosophy and art. His ideas have been reflected in politics and religion. He inspires us with his personality, his way of thinking, and his destiny. His story and life journey from an unknown researcher to one of the most important geniuses of science is certainly one of the greatest stories of human society. Let us celebrate the bicentenary of Mendel's birth as an opportunity to appreciate his personality as an extraordinarily inspiring resource for our past, present and future. This is why this special issue of our journal is now in your hands, presenting recent examples of research in an area directly related to the legacy of Mendel's research programme, whether this is 'Chromosome-centric approaches in crop genomics: Focus on Mendel's pea plant', 'Mendelian inheritance of introrse oriented anthers in *Brassica rapa*', 'Pea transformation' or issues related to 'Interspecific hybridization and plant breeding.'

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