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Gregor Mendel: The First Geneticist

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Ghiselin's decisions in putting together this collection, he has not clearly stated his rationale for selecting the various works included here. Why, for example, was the sixth edition of *The Origin of Species* (1872) chosen instead of some other edition? Often, the title page of a work is omitted, so the identity of the publisher is unclear. In other instances, partial justification appears in the introductions Ghiselin has provided for several of the books: he included *The Structure and Distribution of Coral Reefs* (Smith & Elder, 1842) because Darwin's work in geology helped establish his reputation as a scientist, *The Expression of Emotions in Man and Animals* (D. Appleton, 1872) because Darwin was perhaps the greatest psychologist, and *A Monograph on the "Cirripedia"* (Royal Society, 1851), containing Darwin's barnacle monographs, because Darwin spent eight years of his life studying barnacles and it is a good reference for invertebrate zoologists. In addition, the CD offers other books and samples of Darwin's short papers—among them Darwin's and Alfred Russel Wallace's papers presented jointly before the Linnean Society in 1858 (and an account of the events leading up to this unusual event)—a Darwin biographical dictionary, and a huge Darwin bibliography, a reference to almost everything ever written by and about Darwin. The two latter references are quite useful for beginning students as well as more experienced scholars.

This collection should appeal to students starting work in the history of science, particularly those with a limited college library but the time and inclination to work at a well-equipped computer. Although the editor is a very capable scholar and was assisted by an able group of experts in developing this package, it has serious drawbacks. Ghiselin's voice dominates the entire project, from the works he selected to the introductions he wrote for them. Also, the publishing company admits it does not possess the resources to realize the full potential of the CD-ROM—that is, to produce an almost unlimited number of illustrations and other visual and audio material. It does maintain that the second edition is a considerable advance over the first in its variety and depth and requests that present users send additional material so subsequent editions can be upgraded. Short of this, the Darwin CD-ROM only partially lives up to its promise; indeed, it makes the investigator eager to browse in a library filled with many books by and about Darwin.

JOEL S. SCHWARTZ

Vitezslav Orel. *Gregor Mendel: The First Geneticist*. Translated by **Stephen Finn**. xii + 363 pp., illus., figs., tables, bibl., index. Oxford/New York: Oxford University Press, 1996. \$49.95.



Members of the Augustinian monastery in Brno in 1862. Gregor Mendel is standing, second from the right (reprinted from Orel, *Gregor Mendel*).

Vitezslav Orel's excellent new biography of Gregor Mendel clearly reflects his dedication as an emeritus head of the Mendelianum in Brno. Orel's account of Mendel's life and his work is full of detail, and it is clear that Orel has taken pains to consider the vast and diverse literature concerning Mendel systematically. It is not surprising that Orel champions an orthodox interpretation of Mendel as the first geneticist or that he is critical of recent reinterpretations of Mendel that present him as a purely empirical researcher or traditional hybridist, or that question Mendel's relationship to the laws of heredity that bear his name today.

The bulk of Orel's book is organized as a chronological biography, but because the neglect of Mendel's results looms large in the literature, Orel includes significant discussions of the historiography of the Mendel industry, the differential acceptance of Mendel's work, and the ways in which Mendel is remembered. Following his review of the historiography in Chapter 1, Orel examines the state of thinking about heredity before Mendel within the universities and among breeders and researchers. In Chapter 3 Orel focuses specifically on Mendel, tracing his path from the Silesian farm where he was born to the monastery at Brno.

Mendel's important years at the University of Vienna and his return to Brno are the topic of Chapter 4. Orel devotes Chapter 5 to an extensive discussion of all of Mendel's research. It is in this chapter that Orel very carefully reconstructs a record of Mendel's researches on a variety of plants. In his treatment of the famous *Pisum* experiments and the troublesome experiments on *Hieracium*, Orel presents a convincing interpretation of Mendel as a synthesizer, theoretician, and experimentalist. In this chapter, too, Orel weighs in on important questions in the Mendel literature, such as whether Mendel was a Mendelian, whether, in using the term *Anlagen*, he meant material units of heredity, and whether he "cooked" some of his experimental results. In Chapter 6 Orel turns to Mendel's years as abbot of the monastery at Brno, demonstrating Mendel's sustained interest in science as manifested in his breeding experiments with honeybees and his continued meteorological observations. Orel reserves his seventh chapter for an evaluation of Mendel the man, then, in Chapters 8 and 9, returns to the intellectual history of Mendel's reception and memory.

Although Orel has made a great effort toward putting Mendel in context, his primary concern is with producing an accurate reconstruction and assessment of Mendel's work. I think Orel has

succeeded admirably at this task. His biography offers an authoritative guide to the Mendel literature, highlighted by his careful consideration of the many different interpretations of Mendel's work.

MICHAEL R. DIETRICH

Paul Jerome Croce. *Science and Religion in the Era of William James*. Volume 1: *Eclipse of Certainty, 1820–1880*. xxiv + 350 pp., illus., bibl., index. Chapel Hill/London: University of North Carolina Press, 1995. \$42.95 (cloth); \$17.95 (paper).

Paul Croce provides an illuminating look at the intellectual career of William James in this study of the relationship between religion and science in the latter half of the nineteenth century. James is appropriate as a figure central in this context because of the depth of his experience of the gradual emergence of uncertainty in both religion and science. Croce promises that in a sequel he will deal with James's mature efforts to propose a positive mediating response to this historical development. Meanwhile, with admirable lucidity and attention to nuance, Croce analyzes the varied responses to Darwinism among the scientists and intellectuals in James's circle around Harvard University. He pays especially close attention to James's friends Chauncey Wright and Charles Sanders Peirce because of their understanding that Darwin represented a new mode of science whose hallmarks were probable hypotheses and the use of statistical probability regarding breeding populations.

My problem with this handsomely produced book lies in its inadequate integration of biography and intellectual history. Croce recognizes that James "felt the shifts and tugs of the emerging intellectual culture of uncertainty on a personal as well as a philosophical level" (p. 17) and embarked on the study of painting as a first step in his attempt to gain independence from his father's control and "to forge his own intellectual and vocational identity" (p. 79). Yet Croce never comes to terms with Erik H. Erikson's concept of the "identity crisis" and his ego psychology, which Howard Feinstein and I found helpful in 1968 when we first opened up the explanatory issues about James's psychosomatic symptoms, depression, and despair in the 1860s after he undertook his scientific education in accord with his father's advice. Croce alludes in his footnotes to such studies, but he strangely drops the biographical story after 1861, when it is highly relevant to his theme. It is helpful to