nature of his technological contributions are admirably clear. The reader with limited technical background may find sections of the book difficult going, but his efforts will be well rewarded. Hughes makes good use of illustrations, both line drawings and photographs, to make his points. Nor does he neglect the personal side; Sperry comes through as a comprehensible human being with characteristic human virtues and foibles.

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A Reassessment of Historic Miseries

Darwin's Victorian Malady. Evidence for Its Medically Induced Origin. JOHN H. WINSLOW. American Philosophical Society, Philadelphia, 1971. viii, 94 pp. Paper, $2. Memoirs of the American Philosophical Society, vol. 88.

The masses take sick, complain, and die; the great also die, but their complaints command notice. Few men have left a more voluminous record of their bodily miseries than Charles Darwin, and even fewer have engendered so extensive and contradictory a literature of *post hoc* diagnoses and interpretation. Darwin's gloomy record of affliction began in the 1830's and continued, with modest relief in later life, until his death in 1882. His entire career was thus marked by unceasing physical discomfort and mental distress.

Critics friendly and otherwise have to date emphasized the spiritual origins of Darwin's persistent malaise. Robert Darwin, they claim, Charles's forceful father, tyrannized over his son (among others) and thus generated in him an unacknowledged compulsion to free himself from the paternal bond. Charles, of course, failed to extinguish his earthly father; he succeeded, nonetheless, in doing in God the Father. If, remarked Rankine Good, surely the most intrepid of Darwin's psychoanalytic interpreters, the naturalist "did not slay his father in the flesh, then in his *The Origin of Species* . . . he certainly slew the Heavenly Father in the realm of natural history." Darwin was guilty of "unconscious patricide" and suffered in consequence a "crippling and lifelong neurosis." Much more than Darwin's personality and conduct is in question here; the naturalist's assault upon traditional wisdom in natural history—principally, the immutability of biological species, these being the direct product of Divine wisdom and power—becomes, together with his ailments, a consequence of the deeply disturbing psychic experiences of early life.

This interpretation is all the more beguiling for its internal coherence and apparent consistency with important intellectual and religious developments in Victorian England. It suffers only, as John H. Winslow aptly remarks in the book under review, from a dearth of evidence and inherent improbability. Winslow suggests that the notion of Darwin's suffering as psychosomatic emerges largely from our inability, despite no lack of suggestions, "to identify an organic disease which fits all or most of Darwin's symptoms." Winslow has therefore undertaken a detailed analysis of Darwin's complaints and, above all, a careful investigation of the development of his illness. The evidence he has examined and now presents in a brief and closely reasoned essay leads to the conclusion, designated a "high probability," that Darwin suffered from chronic arsenical intoxication.

The "Victorian malady" of the title is dyspepsia, which toward midcentury was recognized as a distinct malady by English physicians. The Victorian dyspeptic suffered from headache, nervousness, sleeplessness, dejection, "indescribable suffering," and a host of other ill-defined complaints. Calomel and Fowler's solution were very commonly prescribed for dyspepsia. The latter, containing potassium arsenite, is the true villain of the tale. Fowler's solution offered initial relief from vague dyspeptic complaints and then, as a result of chronic use and poisoning, produced and perpetuated similar complaints. Dyspepsia was widespread in Britain: in addition to Darwin, Thomas Huxley, George Eliot, the Carlyles, Herbert Spencer, and Robert Browning knew its miseries. Through comparison of the manifest symptoms of dyspepsia and of chronic arsenical intoxication Winslow bravely concludes that the two maladies are identical and suggests "Fowler's disease" as a suitable designation for both.

Was Darwin's dyspepsia really Fowler's disease? Darwin suffered, often severely, from eczema and probably was taking arsenic as a remedy even before sailing on the *Beagle*, and various evidence confirms his later and not infrequent use of arsenical preparations. His essential symptoms, and this is Winslow's basic argument (pp. 58–74), are wholly congruent with chronic arsenical intoxication.

While Winslow's essay is a case study of Darwin the patient, its implications are much broader. The wide agreement among Victorian physicians regarding the therapeutic necessity (and perils) of arsenic, other heavy metals, and various potent drugs of vegetable origin is notable but was hardly novel. Chemical remedies had enjoyed mixed popularity since the 16th century; certain elements, notably mercury used for the alleviation of syphilis, were deemed indispensable. But how widespread was the use of such powerful drugs? Which classes of society had access to and were in turn affected by them? Would only those who could afford to consult physicians be exposed to this often costly and potentially deadly medical armamentarium? Was iatrogenic disease of the pharmaceutical variety largely or even exclusively the lot of propertied men? Winslow's evidence suggests this as a real possibility for Victorian England. The class structure of medical practice deserves close scrutiny, and not least from the viewpoint of the actual or prospective patient. By midcentury certain London practitioners had, it appears, captured the bulk of the educated and moneyed clientele (Winslow indirectly records the close connections existing between patients from the scientific community, including, of course, Darwin, and a rather small set of eminent physicians), and these distinguished patients may as a result have acquired distinctive patterns of morbidity. Fowler's disease stands as a preeminent example of this intriguing possibility.

Darwin's Victorian Malady thus serves the reader on two levels. It reopens the possibility that Darwin's affliction was organic in nature and not psychosomatic. If this interpretation is sound (retrospective diagnosis, it must be emphasized, is always perilous), it means we may do away with much of the venerable, tedious, and not particularly illuminating psychoanalytic approach to Darwin's bodily complaints and intellectual development. The essay, furthermore, forces attention to—although it does not explicitly investigate—the social framework within which

Darwin and contemporary dyspeptics suffered. The latter may indeed be its more important contribution, and the questions it raises merit further investigation.

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Princeps Botanicorum

The Compleat Naturalist. A Life of Linnaeus. WILFRID BLUNT, with the assistance of William T. Stearn. Viking, New York, 1971. 256 pp. + plates. $14.95. A Studio Book.

Reason and Experience. The Representation of Natural Order in the Work of Carl von Linné. JAMES L. LARSON. University of California Press, Berkeley, 1971. viii, 172 pp., illus. $7.50.

With the approach of the bicentennial of the death of Carl Linnaeus, or von Linné (1707–1778), it is fitting that scientists and general readers alike learn more about the man who dominated 18th-century science, who shaped the biology of the 19th century, and who retains his influence under international sponsorship in the present century. As many know, the international codes of botanical and zoological nomenclature are based upon the use of binary names as devised by Linnaeus, even though his artificially contrived sexual system was long ago abandoned. It is not so well known that Linnaeus claimed a general command of the sciences of his day and that he (and others of his time) regarded his *methodus* as widely, if not universally, applicable. Even less well known, except to specialists, are the origins and logical bases of his *methodus*. The volumes under review deal, respectively, with these last two matters.

As its title indicates, Blunt's book is a biography, and as an intellectual biography it concentrates on Linnaeus's belief, not shared by all of his contemporaries, that he was equally adept at all branches of natural history and more than competent in some branches of the physical and medical sciences. Specialization within the biological sciences was only beginning in Linnaeus's time, and there seems to be no reason to doubt that the rise of entomology, ichthyology, malacology, and ornithology (to name but a few of the areas in which Linnaeus worked) was hastened by his nomenclatural and taxonomic contributions. Interestingly enough, the creation of the botanical subdisciplines probably was retarded by Linnaeus's very real triumphs in botany and by the claim, emphatically endorsed by him, that with his *methodus* all of botany was within the grasp of one man. There were two provisions to this claim: one had to be industrious and to have access to the necessary resources. Linnaeus certainly satisfied the first requirement, and after an inauspicious beginning came to possess the requisite materials. These included both living and dried material from as many different geographical regions as possible, a reference library, a professional position, and what all professors dream of, money. Opinions differ as to how well he was supplied with these necessities and how nearly he put them to the best use, but he nevertheless provided an impressive model which many biologists attempted to emulate.

It is such a theme that Blunt has carefully woven together from Linnaeus's own prodigious output, an enormous secondary literature, and the archival and anecdotal material that accumulated about the man, reaching in some instances the proportion of legends. Linnaeus's penury and his efforts, described in detail by Blunt, to rise above that handicap provide one of the clues to his complex personality. There have been biographies aplenty of Linnaeus. Blunt's is by no means the definitive statement, nor does it pretend to be, but it has added some new dimensions to Linnaeus's portrait.

Beginning with his boyhood in southern Sweden, the book progresses by alternating between Linnaeus, his family, and his ever-widening circle of friends, acquaintances, opponents, even enemies—all placed within the context of the dramatic social and political changes Sweden was undergoing at the time. With the help of carefully chosen and well-reproduced illustrations, writings, and a few shoulder notes inserted more or less at random as a concession to scholarship, the reader follows Linnaeus from minor accomplishments to the time of his internationally recognized but not always accepted *Herrschaft* of botanical taxonomy.

Such a technique is admirably designed to present a great scientist in a readable fashion to a public which may know little of the makers of modern science. But, it is only fair to say, it has its limitations. In the attempt to avoid being an orthodox biography in which every assertion is authenticated and documented, the narrative has become impressionistic and the sequence episodic. It is to Blunt's credit that he withstands the temptation to indulge in psychoanalysis. But without an analysis of the conceptual bases which made Linnaeus's *methodus* nearly synonymous with botany and a useful tool in other disciplines as well, the reader may fail to appreciate the issues or to understand why the stakes were so high. The lack of a careful analysis of the key concepts of Linnaeus's *methodus* (partially made up by Stearn's detailed appendix, pp. 242–52) is all the more curious in the light of recent Linnaean scholarship. For it has been claimed that the *methodus*, quite apart from the soundness of its logical foundations, was a brilliantly incisive technique by which components of an assemblage were segregated and then reassembled in an original fashion and that its creator's greatest triumph was that he demonstrated its effectiveness even if it could not be justified philosophically.

It is to that very issue that Larson's book is devoted. In concentrating upon the historical origins as well as the philosophical and logical bases of Linnaeus's *methodus*, it nicely complements Blunt's.

After an extended historical treatment of pre-Linnaean taxonomies, Larson turns to the various taxa which constitute the framework of any taxonomic system, artificial or natural. Each taxon is examined from a philosophical or logical as well as from a scientific point of view. An acceptable natural system, toward which Linnaeus made some progress early in his career, would appear to be one in which natural order and the logically constructed taxa, above all the species, fit in a one-to-one correspondence. The fact remains, however, that there has been little agreement on the matter. By claiming that Linnaeus's *methodus* was a complex matter involving visual acuity, memory, intuition, and Aristotelean class logic, Larson has restated the notoriously difficult "species problem" in such a manner that perhaps some progress will be achieved.

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