

A sammelband of Francesco Redi's famous treatise on spontaneous generation and his study of botanical and zoological curiosities.

Redi, Francesco. *Esperienze intorno alla generazione degl'insetti*. Firenze: All'Insegna della Stella., MDCLXVIII [1668]. 9 7/16 inches (240 mm), [8], 228 pp. (first leaf blank), 29 leaves of plates (3 folded): ill. (engravings). Bound with Francesco Redi's *Esperienze intorno a diverse cose natvrali*. Firenze, P. Martini, 1686. 2 pp., 1., 122 pp. 6 plates

Francesco Redi (1626–1698), court physician to one of the later, degenerate Medici rulers of Florence, is celebrated for two very different publications. His long poem, *Bacco in Toscana* (1685), is one of the most vivacious and delightful of all tributes to wine. Redi's only rival as a poet-physician is the American Oliver Wendell Holmes. Even Redi's scientific works are rich in poetical quotation: he took delight in rare, obscure, and invented words.

Still more famous is Redi's epoch-making treatise against spontaneous generation. This attractive doctrine may be traced back to Aristotle, but has acquired numerous excrescences and expansions along the way. There are essentially two forms of generation: spontaneous generation and reproduction. Although the latter term was only coined by Buffon in 1749, the results of like producing like were familiar to anyone who had ever observed the copulation and parturition of animals, the laying and hatching of birds' eggs, or the scattering and germination of flower seeds. Spontaneous generation, by contrast, is an attempt to explain the manner in which new life appears where there is no visible sign of continuity. Aristotle and his followers were especially inclined to think that this was characteristic of the lower animals, who were generated by some sort of universal fertilizing principle outside a womb. After all, the unheralded and inexplicable appearance of maggots, worms, and grubs in dung, rotting meat, or decaying vegetation was a phenomenon familiar to all.

Redi used a microscope to examine the fine detail of the insect body, including its egg-laying organs, as depicted especially on **Spreads 198–228**. The rotting flesh or vegetable matter, he concluded, was merely an edible nest for the young hatchlings. Redi was able to show that organic substances remained free of maggots when protected from

insect contamination by using wide-mouthed flasks containing meat or cheese, some open, some covered with gauze and some sealed. Redi extended his observations from insects thriving in a matrix now devoid of life to insects and internal parasites that inhabited the living organism: the liver-fluke in animals or the grubs that enjoyed fruit on the tree. **Spread 172** shows the cherry-fly, so ubiquitous in Italy as to inspire the old Roman street-cry, “Chi vuol cerase con padrone in casa?—“Who wants cherries with a master in the house?” Redi did not, however, detect the insect origin of nut-galls, deceived by their placenta-like internal fibers: Marcello Malpighi soon corrected his misapprehension, in 1679.

Redi’s use of the microscope on insects did not quite destroy the doctrine of spontaneous generation. Later opponents of the notion—Lazzaro Spallanzani or Louis Pasteur— would require different techniques (such as filters and hermetic sealing) to deal with pseudo-spontaneous reproduction from airborne spores or microorganisms. The role of spontaneity in science has now been reduced to a faint and excruciatingly long-term possibility at the dawn of time with a pick-up orchestra of chemicals—a sort of “slow food” spontaneous generation.

Redi’s book is bound up with another of similar experimental title, *Esperienze intorno a diverse cose naturali* (1671), in which he published his investigations into various exotic botanical and zoological curiosities, including cobra and iguana “stones” (**Spreads 76 and 78**), Chinese star-anise (**77**) and vanilla beans (**79**). Like the other volume of *Esperienze*, it took the form of a letter, in this case to Athanasius Kircher, who maintained a museum of such things in Rome, brought back from all round the world by his fellow-Jesuits. Kircher in fact believed in a doctrine which he called “panspermia” (or universal seed), involving a magnetic attraction between male and female elements but still firmly anchored in the old Aristotelian beliefs that Redi had combated. The preliminary leaves of the two books have been misbound for centuries. The *Esperienze* on insects should be read in this order: **Spreads 5–6, 93–239**, while the *Esperienze* on exotic curiosities proceed **91–92, 7–90**.

This copy bears the bookplate of the charismatic American biologist Herbert McLean Evans (1882–1971), discoverer of Vitamin E and pioneer collector of scientific books. Evans went through books, money, and women with equal and simultaneous

abandon, selling off yet another collection as divorce or bankruptcy loomed, and starting up again immediately. He formed at least seven substantial scientific collections between 1934 and 1967, one of which was bought in 1961 by Samuel Barchas. It is now, with Barchas' other books, at Stanford University—see bookplate on **Spread 2**. Evans' deceptively small exhibition catalogue *Exhibition of First Editions of Epochal Achievements in the History of Science* (Berkeley, 1934) is a magisterial vest-pocket guide to scientific high-spots. No. 93 is Redi's book of 1668, described by the ever-forthright Evans as "The first hard blow to the doctrine of spontaneous generation."