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soil in which they were found but are the remains of animals living in the sea on whose bed the soil (sediment) was deposited. The latter paper is a summary of a projected further work which unfortunately never appeared. It is the *Prodromus* that contained the first statement of the Law of Superposition; and much more. 'If, in a certain stratum, we find great abundance of rushes, grass, pine cones, trunks and tree branches and similar objects, we surmise correctly that the said material was swept thither by a river in flood or by a torrential outbreak.' Here is a clear statement that the contained fossils indicate the environment in which the rock was formed. Steno gives criteria for recognizing fresh water, marine and volcanic deposits. He also recognized that sediments were originally deposited in a horizontal position, that some have subsequently been tilted, and that they were laid down either universally or in confined basins '... Wherever bared edges of strata are seen, either a continuation of the same strata must be looked for or another solid substance must be found that kept the material of the strata from being dispersed.'

In mineralogy we owe to Steno the first recognition of the law of constancy of interfacial angles, a law which waited until 1783 for its first experimental proof. Steno, too, was probably the first to observe and record the striations on the faces of pyrite cubes. In structural geology he classifies mountains and draws sketches of and summarizes the geological history of Tuscany.

Steno was already a Catholic when the *Prodromus* appeared: he was accepted into the Roman Catholic Church in 1667. Accepting the Usher Chronology for the origin of the earth he strives to show that his observations were not incompatible with the Scriptures and that the remains of elephants found in the Arno Valley are the remnants of Hannibal's army. Unfortunately he just failed to erect a geological chronology. For the geologist, and for science in general the most unhappy date in Steno's life must be 1675 when he was ordained a priest in Florence. From that time Steno's interests turned from science to theology; without doubt geology's loss was greater than the Church's gain.

An English translation of the *Prodromus* by J. G. Winter appeared in 1916 and has lately been reprinted (1968). The value of the present work is that it brings together the whole of Steno's geological works both in the original and in translation. Three are made available for the first time in English. This is a most useful, scholarly and well bound book unfortunately marred by a great many printing errors and careless use of geological terms. One hopes that more care will be taken with the projected volume on the geological importance of Steno's work.

C. A. SIZER

Raspail, Scientist and Reformer, by DORA B. WEINER, with a chapter by Simone Raspail, New York and London, Columbia University Press, 1968, pp. xiv, 336, illus., \$11.00.

The social responsibilities of the scientist and the doctor provide the theme for perennial discussion and in this connection the names of Virchow and Haldane are often mentioned. The name of François Vincent Raspail is less well known, despite his undoubted scientific attainments and his lifelong dedication to democratic principles for which he suffered long terms of imprisonment and exile. This versatile

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scientist and politician eventually sacrificed his scientific pursuits to his politics, but in his later years he was able, as a deputy, to urge upon the French parliament the necessity for a number of reforms in social medicine which he had developed over the preceding decades.

Raspail's long life—for he lived to be eighty-four—spanned a period of great turmoil in European history and of fundamental development in science and technology. It began under the Terror of the French Revolution in 1794 and he grew to maturity with a passionate belief in many of the principles which had inspired it. After an early training at a seminary in Avignon, abandoned when he found he had 'lost his faith', Raspail took up scientific studies—botany, zoology, anatomy, physiology, chemistry and physics—and when he manned the barricades in the abortive rising of 1830 he was already the author of fifty scientific papers. Among them were the reports of much original work on the physiology and pathology of the cell, so anticipating Schwann and to some extent Virchow, to the point that Broca claimed 'Le cellule est toute française, et appartient à Monsieur Raspail'. This is probably too sweeping a judgement, but Raspail may certainly be regarded as the founder of histochemistry. After two years in prison for his part in the rising, years spent in writing works on organic chemistry and plant physiology, he began to turn his attention to medical problems and succeeded in rediscovering the *acarus scabiei*, first noticed by Bonomo and Cestoni in 1687 and since lost to view. But his political sympathies soon led him into the field of social medicine and from 1840 to 1848 he gave his services to the sick poor without fee, although he characteristically refused to take a medical degree on principle. In 1848 he was again active in the revolution against Louis Philippe and himself read the announcement of the establishment of the French Republic from the Hôtel-de-Ville in Paris. When Louis Napoleon, who defeated him in the presidential election, betrayed the democratic principles of the revolution by assuming dictatorial powers, Raspail was again in trouble and had to live in exile in Belgium for nine years. It was as the 'people's friend' (*L'Ami du Peuple* was the title of a newspaper which he edited) that he was most popular in France, but his medicinal preparations, many of them employing camphor, and especially his 'liqueur Raspail' (a tincture of vegetable extracts) were also extremely well known. There is still a Pharmacie Raspail in Paris, as well as a boulevard named after him, but, curiously enough, his dramatic life has had to await an American biographer for a comprehensive and scholarly account. The interesting, if poorly reproduced illustrations, are a definite addition to the text, and the craggy and determined face of Raspail at the age of forty (looking some twenty years older) is a true index of his character. Dr. Weiner is to be congratulated for seizing upon a subject of such universal interest and for her competent handling of many disparate themes in a well-written text.

F. N. L. POYNTER

The Operator for the Teeth, by CHARLES ALLEN, reprint of 1685 edition with a new introduction by R. A. Cohen (limited edition of 250 numbered copies), London, Dawsons, 1969, pp. x, 22, illus., £10 10s. 0d.

This slim volume contains a facsimile of the original edition of *The Operator for the Teeth* by Charles Allen published in 1685 at York, with an introduction by Mr.