

Book Reviews

importance. And medicine itself? Or is it in the course of becoming a special technology? (See F. N. L. Poynter (ed.), *Medicine and Culture*, London, Wellcome Institute of the History of Medicine, 1969, p. 3).

Conditions have fluctuated a good deal in the last 'leaps' but these changes, like waves on the ocean, had little effect on the working up and down of traditional medicine which is the main element of Chinese life itself. Contradictions in a socialist society are fundamentally different from those in the old societies.

Traditional medicine, a faithful reflection of Chinese culture, is a first-rate subject for the human sciences in that it provides an excellent approach to the Chinese and their psycho-affective structure but it is also not without interest for Western practical medicine by its special techniques (acupuncture, moxas, massage, breathing exercises, substitutes for Yoga etc.).

M. WONG

Steno. Geological Papers, ed. by GUSTAV SCHERZ and trans. by ALEX J. POLLOCK, Odense University Press, 1969, pp. 370, illus., \$12; 85 Kr. Dan.

'When the lowest stratum was being formed, none of the upper strata existed'. It comes as somewhat of a shock to the average undergraduate in geology (and to many graduates) when they learn that this statement of the law of superposition of strata was made in 1669 by Niels Stensen and not by William Smith. To William Smith (1769–1839), the Father of Geology, are often credited the two great fundamental principles of geology, the Law of Superposition of Strata and the Law of Strata Identified by their Fossil Remains. Yet in one aspect at least Steno anticipated Smith's work by over one hundred years.

After many years of neglect attention is once more being focussed on the writings of Steno and this is in no small measure due to Gustav Scherz, the editor of the present work. This work brings together all the geological works by Steno, the most famous of which is his *Prodromus concerning a solid body enclosed by process of nature within a solid*. Included within the same volume are his writings *On Hot Springs* (1660), *A Carcharodon Head Dissected* (1667), *Letters on the Grottos* (1671) and *Ornaments, Monuments, Signs and Arguments* (1675–7). Each paper is printed in the original Latin with a parallel English translation together with copious notes.

The contribution made by Steno to the science of geology is not really appreciated in this country, but the twenty pages describing Steno's geological work should go some way toward redressing the balance. Steno (1638–1686), the son of a Copenhagen goldsmith, is best known for his contributions to anatomy and theology but his first published work, *De Thermis*, was geological. A brief description of his life is well illustrated by 130 carefully-chosen photographs which are unfortunately grouped at the end of the volume. No doubt economic reasons have dictated their position. A simple map illustrating Steno's wanderings over Europe would have contributed considerably to this section.

Steno's main contributions to geology were made within a space of two short years, from the catching of the Carcharodon Shark at Leghorn in 1666 to the submission of the MS of the *Prodromus*. It is in the paper on the Carcharodon Head and in the *Prodromus* that the geologist finds most of interest. In the former Steno concludes that tongue stones or Glossopetrae are fossil shark teeth, have not grown within the

Book Reviews

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