

Book Reviews

A Daring Geology and Cosmogony

Telliamed. Or Conversations between an Indian Philosopher and a French Missionary on the Diminution of the Sea. BENOÎT DE MAILLET. Translated from the French and edited by ALBERT V. CAROZZI. University of Illinois Press, Urbana, 1968. xiv + 466 pp., illus. \$10.

The *Telliamed* scandalized the orthodox and even aroused strong opposition from the not so orthodox when it appeared in 1748. Benoît de Maillet's critics were repelled by the materialistic cosmogony which was quite apparent throughout the work in spite of the efforts of his editor and literary executor, the Abbé Jean-Baptiste le Mascrier, to soften its heterodoxy. Thanks to the attacks of its critics, the *Telliamed* received extensive publicity and was widely read. For nearly a century it stimulated debates and influenced men of far greater ability than its author. The *Telliamed* begins as a treatise on geology, but it concludes with a remarkable discussion of the origins of the earth and stars and a hypothesis concerning the appearance and transformation of terrestrial life. The work is in the form of three conversations between a French missionary and an Indian sage who proposes de Maillet's heretical ideas. The geological system presented in the first two conversations attempts to explain virtually all of the earth's physiographic and structural characteristics as the results of the action and gradual diminution of the seas. Each of these conversations contains an array of detailed observations supporting plausible inductive generalizations. The third conversation, however, is quite different in both character and content. It contains a cosmogony based upon Cartesian vortices, the plurality of worlds, and a series of cyclical cosmic changes through which celestial bodies pass from stars to globes completely covered by water, to habitable planets, and back to stars. It also presents de Maillet's arguments for the aquatic origin of all life including man

and for the transformation of living forms from aquatic to terrestrial habitation. The speculative nature of the third conversation has tended to overshadow the more careful but only slightly less dramatic geological hypotheses of the other two. Carozzi has done much to restore a needed balance in treating the *Telliamed* as more than merely a forerunner of Buffon, Lamarck, and Darwin.

The *Telliamed* appeared in three French editions between 1748 and 1755, all of which contain modifications by Le Mascrier and perhaps by other editors. (De Maillet died ten years before the first edition was published.) An English translation of the first edition appeared two years later (1750) and was reprinted with few changes in the United States in 1797. Until now, no subsequent English edition has appeared. Carozzi has attempted more, however, than merely to provide a modern translation of the published text. By examining the existing manuscript copies of the *Telliamed*, he has sought to re-create de Maillet's original text and to isolate the later additions of Le Mascrier and the other unidentified editors. The present translation is based upon a manuscript of 1728 which presumably is entirely the work of de Maillet, but it also includes the later additions of de Maillet, Le Mascrier, and others as footnotes which can be interpolated into the text. It is thus a valuable addition to the literature on 18th-century geology.

Carozzi's extensive footnotes prove to be a mixed blessing. He has taken great pains to identify and expand upon de Maillet's frequently obscure bibliographic references. Furthermore, he and his colleagues have reexamined the geological formations mentioned by de Maillet and have shown him to have been an extremely acute and accurate observer. Unfortunately, however, the footnotes too often emphasize the seemingly modern aspects of de Mail-

let's ideas, a practice which can too easily lead to a distortion of their historical context. The concern with verifying de Maillet's observations, while providing many valuable insights into what he observed and the conclusions he drew, has led also to many unnecessary footnotes. In the midst of this wealth of obviously careful scholarship it is disconcerting, even irritating, frequently to turn to the back of the book only to find: "Note these very clever processes for . . .," "Notice the correct observation that . . .," or "Notice the correct interpretation of . . ."

Not having access to Carozzi's manuscript, I cannot judge the accuracy of his translation, but his ability as a translator has already been amply demonstrated. The present translation is certainly very readable and, I believe, true to the spirit of the work. If some of the explanatory footnotes need to be treated with caution, they nonetheless provide much interesting and valuable information.

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Changes in the Land

The Mediterranean Valleys. Geological Changes in Historical Times. CLAUDIO VITA-FINZI. Cambridge University Press, New York, 1969. x + 140 pp. + plates. \$13.

The questions of historical soil erosion in the Mediterranean lands have been the subject of lively debate since classical times, and man's diverse forms of occupancy have been repeatedly blamed for a general deterioration of land resources. Vita-Finzi has investigated these charges by studying the field evidence of the stream deposits themselves and their dating. He marshals substantial evidence for northern Tripolitania (38 pp.), with very brief and often casual consideration of other parts of North Africa, Jordan, Greece, Italy, and southern Spain. Vita-Finzi shows that during late Roman or early Medieval times many of the streams of the Mediterranean Basin were subject to a significant change of geomorphologic equilibrium: vertical cutting of older alluvial fill gave way to alluviation in the lower stream courses. As a result, longitudinal stream profiles have been steepened and smoothened, while broad tracts of loamy agricultural soils were created along the valley