
The Hafner Publishing Company is to be congratulated on adding Daly's book to its list of reprinted geology classics that were current a few decades ago. When Strength and Structure of the Earth was first published in 1914, it was welcomed as one of the best treatments in English of the physical nature of the earth, and especially of the earth's crust. Successive new editions kept the book up to date until 1940.

The 1940 edition of Daly's masterpiece is so well known that a conventional review of it would be out of place. In it Daly gave excellent accounts of the development of the theories of isostasy, of the corrections to be applied to gravity measurements, and of the tests of the various isostatic models that were possible with the data then available from North America, Europe, East Africa, India, Japan, and limited areas of the oceans, especially near the island areas of the East and West Indies. The treatments of these topics are so good that they may still be used quite safely as introductions to present-day considerations of the same topics.

A comparison of Daly's book with modern treatments of the same subject, for example the American Geophysical Union's 1969 monograph The Earth's Crust and Upper Mantle, clearly shows the merit of Daly's contribution. In only a few cases has a different interpretation of the data available to Daly gained wider acceptance than Daly's original ideas. The same comparison, however, does show the extremely rapid growth of solid-earth geophysics in the last thirty years. Daly did not suspect the existence of lateral variations of the properties of the upper mantle; the extent of the mid-ocean ridges was not known in 1940 (although gravity measurements over the North Atlantic Swell are discussed); and convection currents in the mantle are introduced only to explain the negative anomalies near the East and West Indies. After considering gravity anomalies in the Indian Ocean, Daly concluded that the inferred strength of the ocean floor "... seems to be a decided contradiction to Wegener's theory of continental drift...", and thus joined the vast majority of geologists and geophysicists of that era who backed the wrong horse. Or did they?

If you missed the original edition, buy the reprint. It has the multiple merits of being a science classic, a useful text book, and a cautionary tale.

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