

**OLD STONES: NOTES OF
LECTURES ON THE PLUTONIC,
SILURIAN, AND DEVONIAN
ROCKS IN THE NEIGHBOURHOOD
OF MALVERN**

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Old Stones: Notes of Lectures on the Plutonic, Silurian, and Devonian Rocks in the
Neighbourhood of Malvern by W. S. Symonds

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W. S. SYMONDS

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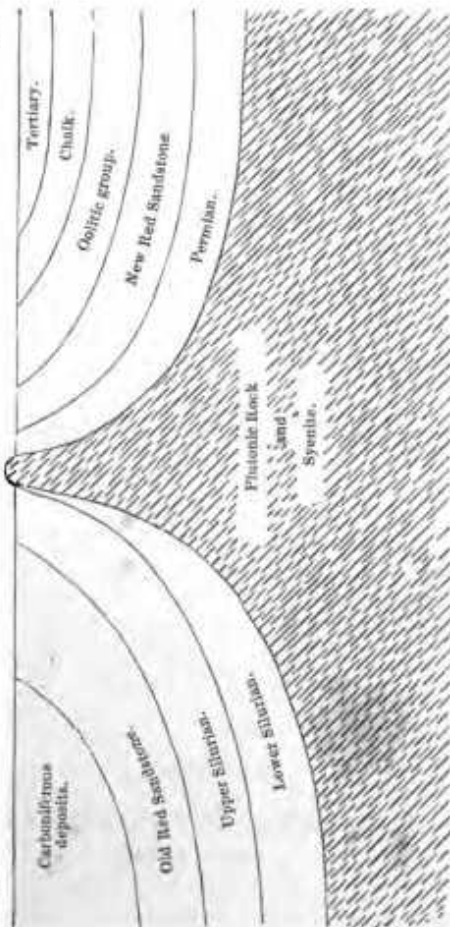
Section showing the succession of Strata west of the Malvern range.

W.

Syenite.

Section showing the succession of Strata east of the Malvern range.

E.



OLD STONES:

Notes of Lectures

OR

THE PLUTONIC, SILURIAN, AND DEVONIAN ROCKS
IN THE NEIGHBOURHOOD OF MALVERN.

By W. S. SYMONDS, F.G.S.

RECTOR OF FENDOCK.



MALVERN:

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D. BOGUE, LONDON.

1855.

188. c. 35.

TO
THE MEMBERS
OF THE
MALVERN, WOOLHOPE, AND COTTESWOLDE
Natural History Field Clubs.

To you, my Friends and brother Naturalists, with whom I have passed so many happy days, and from whom I have received much kindness, hospitality, and courtesy, I beg to dedicate this little work.

*Pendock Rectory,
April 18th, 1855.*

WILLIAM S. SYMONDS.

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PREFACE.

A PORTION of "Old Stones" has already appeared before the public, in the shape of Lectures delivered by the author at different places in the neighbourhood of Malvern.

Kind and sanguine friends have requested the publication of these Lectures; and in the hope that this little volume may be of service to young geologists, and perhaps serve as a stepping-stone to the works of the Masters of the science, the author commits it to the printer's hands. He feels certain that the public will be disposed to look more favourably upon the "little book," when they are told that "Old Stones" are published in the hope that they may assist in restoring the old tower of an Old Church.



OLD STONES.

CHAPTER I.

Opinions of astronomers on the former state of the planet's surface—Increase of heat as we descend—Volcanoes now active—Earthquakes connected with volcanoes—Evidence afforded by chemistry and mineralogy—Principal minerals of the Malvern syenite—Experiments of Mr. Gregory Watt—The planet once in a molten state—Formation of the first stratified deposits—Thickness of the sedimentary deposits—Calculation of periods necessary for their accumulation—Earliest condition of the planet, affected by internal heat—First life—A lingula the first shell—First graptolite and trilobite—Palæozoic, a significant term—Lower silurians of Malvern—Malvern Chase—Altered sedimentary deposits, Holly-bush sandstone and black shales of the valley of the White-leaved Oak—*Agnostus pisiformis* and *Olenus* of the black shales—Trap bosses—The last lecture of Mr. Hugh Strickland—Minerals of the syenite necessary to vegetable and animal existences.

“WHAT may those hills be, sir?” said a gentleman one day, as the train was running rapidly along between Worcester and Cheltenham. I