

PRINCIPLES
OF
GEOLOGY.
VOL. II.

LONDON :
Printed by A. SPOTTISWOODE,
New-Street-Square.

A

PRINCIPLES
OF
GEOLOGY:

BEING
AN INQUIRY HOW FAR THE FORMER CHANGES OF
THE EARTH'S SURFACE
ARE REFERABLE TO CAUSES NOW IN OPERATION.

BY
CHARLES LYELL, Esq. F.R.S.
PRESIDENT OF THE GEOLOGICAL SOCIETY OF LONDON.

" Verè scire est per causas scire." BACON.

IN FOUR VOLUMES.

VOL. II.

THE FIFTH EDITION.

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1837.

PRINCIPLES OF GEOLOGY.

BOOK II.

AQUEOUS CAUSES — *continued.*

CHAPTER VII.

ACTION OF TIDES AND CURRENTS — *continued.*

Action of tides and currents, *continued* — Inroads of the sea upon the delta of the Rhine in Holland — changes in the arms of the Rhine — Estuary of the Bies Bosch, formed in 1421 — Zuyder Zee, in the 13th century — Islands destroyed — Delta of the Ems converted into a bay — Estuary of the Dollart formed (p. 7.) — Encroachment of the sea on the coast of Sleswick — On shores of North America — Tidal wave, called the Bore — Influence of tides and currents on the mean level of seas — Action of currents in inland lakes and seas — Baltic — Cimbrian deluge (p. 13.) — Straits of Gibraltar — No under-current there — Whether salt is precipitated in the Mediterranean — Waste of shores of Mediterranean.

Inroads of the sea at the mouths of the Rhine. — THE line of British coast considered in the preceding chapter offered no example of the conflict of two great antagonist forces; the entrance, on the one hand, of a river draining a large continent, and on the other, the flux and reflux of the tide, aided by a strong current. But when we pass over by the Straits of Dover to the Continent, and proceed northwards, we find an admirable illustration of such a contest, where