ANCIENT WATER LEVELS OF CHAMPLAIN–HUDSON VALLEYS 221

groundwater textbook by Alonzo Gray and C. B. Adams.1 The sub-
mergence indicated by the fossiliferous clays in the valley of Lake
Champlain was placed at 400 feet above the present sea level.
New England and New Brunswick are regarded as having then
formed a large island, separated from the mainland of New York
by a strait, "which extended from the valley of the St Lawrence
through the valley of Lake Champlain, of the Champlain canal
and of the Hudson river. The summit level of the canal indicates
the most shallow part of this strait which had a depth of about
125 feet."

Ebenezer Emmons2 speaks of the "clays of Champlain and Al-
bany" as marine and of the "connection by water of the Gulf of
St Lawrence and the bay of New York." "New England and a
part of New York were an island separated from the central part
of New York by a narrow strait."

Mr Upham3 in 1892 advanced the idea that at the close of the
last glacial epoch the Hudson valley formed a glacial lake bounded
on the north by the barrier of the ice sheet during the retreat from
the basin of Lake Champlain and the St Lawrence valley. The
barrier of this lake on the south was thought to have been due to
an elevation of the present mouth of the Hudson which afterward
sank beneath sea level. The subsidence of this coast is still going
on, and the submerged channel of the Hudson has been mapped
by the United States Coast and Geodetic Survey. The absence of
marine fossils from the postglacial beds of the Hudson valley is
taken as evidence that this valley has not been occupied by the sea
either as an estuary or a strait at higher levels than the present
since the ice age.

DeGeer4 believed that the Catskill delta was formed at a time
when New England and the contiguous portions of Canada were
made an island by a strait on the west and the enlarged gulf on
the north.

From a rapid review of several localities he constructed a chart
of isobases of equal change of level. In the Hudson and Cham-

p.190-61.