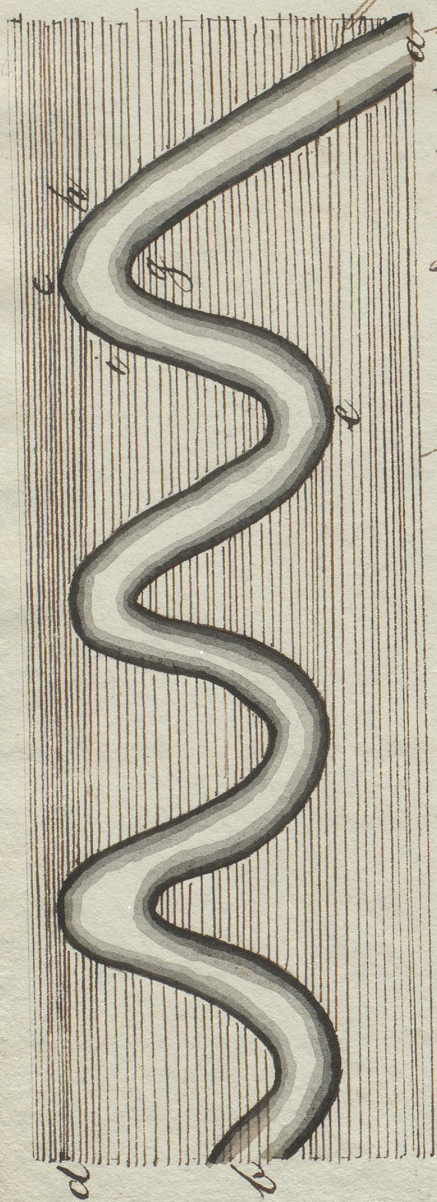


Herud er Barsagt tie, at Elve  
og Bjokke, som løbe igjennem jøv-  
ne Flader, almindelig gaae i  
Slangebøjninger.

gennem hans Professors Historisk  
General report on the geology of  
Massachusetts, 8. 347. grundlag for  
grund, gænger indvandskanter, Grænen:

When we find the bed of a river in a mountainous  
or rocky country very crooked, we see at once that  
the current has been compelled to change its cour-  
se by the obstructions which alternately opposed  
themselves to its progress upon the sides. But  
it would be natural to infer, that when a river  
runs through a level alluvial region, where the  
soil offers equal resistance in every part, it  
would pursue a straight course: yet, in fact, we  
often find streams to be more sinuous in such  
circumstances than in any other: and often the

flexures are remarkably uniform in size and shape. It becomes an interesting inquiry, whether there is not some general law by which such elegant curves are produced, that have always been the admiration of the lover of fine landscapes. —



Perhaps the best example of this sort to which I can refer in Massachusetts, is near the mouth of the small stream passing through Saugus, and emptying into the ocean at Lynn. Standing upon elevated ground near Saugus Meeting House, and looking down the stream, we get a fine view of the numerous and graceful curves, which this river makes in the nearly level and apparently uniform marsh, through which it passes: a part of these curves are shown in Plate 9; as already described. They occur also in other streams in the state: and have so much resemblance among themselves, that I have long

suspected the operation of some general law in their formation; and have felt dissatisfied with the explanation usually given of senescent rivers; that they result chiefly from the unequal hardness of the materials which they excavate. —

But what other principle to call in to explain such cases as I have described. I confess myself at a loss to determine: and I have found no light on this point among geological writers. I take the liberty to make a few suggestions on this subject, which, though far from being satisfactory to myself, may lead others to examine it with more success. —

In the case which I stated above, viz. where small streams pass through level alluvial deposits, it is obvious that the stream must have formed its own bed; and probably also it deposited the alluvium through which it flows; or nearly all of it. Let us then suppose the surface beneath the alluvium to have once formed a shallow valley, whose sides rise but little

and whose surface is very uniform, as is shown  
in Fig: 53: such a valley as would be produced  
by a larger stream running straight through it.  
Suppose now a small stream, a, b, to enter  
this valley obliquely, at a; and that the bottom  
was covered with a thin layer of mud, in which  
the water would at once form a shallow bed. It  
would proceed towards the opposite side, until  
arrested by the gently rising bank, as at c. This  
would turn the current down the valley towards  
d. But the question now occurs; whether it  
would proceed directly towards d, or be turned  
more or less towards the opposite bank, as at  
e. It is obvious that the bank at c, by chan-  
ging the course of the stream, would check the  
current more on the side g, than on the side h;  
and consequently, the suspended matters  
in the water would be deposited more abun-  
dantly along the shore near g, than near  
h, so that a bank would begin to be formed  
at g; whereas at h, the bank already existing,

would be more or less worn away. But the force of current, would be so deadened after passing c, that it would wear away less between c and i, than between c and h: consequently, the stream would be turned more and more towards e, as the bank between c and h was more and more worn away. The check, also, which the current would receive at e, would cause it to deposit sediment, at i, and beyond, so that ere long a bank would be formed on that side across the whole valley: while occasional freshets would at length equalize the alluvial deposit over the whole valley, except that the stream would rarely be diverted into a new bed. If now it be admitted that the current, might in this manner be deflected towards e, in a similar manner would it be turned back, again, beyond e, and thus would it make curves alternately to the right and left, while the valley continued favorable for the work. But if it met with any unusual obstruction, the regularity of the curves would be impaired; as

is the case with most rivers. Near the coast,  
also, the action of the tides would probably some-  
what modify the effects above pointed out;

