the centre of each of them out to the rational horizon, so that the first deposit of the coal formation would be in the depressed parts; and it has just been shown that after a lodgment of a coal formation, it would be surrounded by vast deposits of sand.

On the coast of some bodies of water there are sand hills and sand beaches high above the level of the bodies of water. In some instances the sand hills are high above the adjacent country. On this data it is easy to see how, that a coal formation, causing a deflected current of water, carrying a vast amount of sand, would form a deposit all around such a coal formation, whereby the location of the coal formation would be dished. Now, such a depression in the bottom of the rising continent would cause a suction of the water flowing over it, whereby another mass of trees swimming over it would be drawn to the place and lodged there, to be covered in the same way, and with the same kind of materials which covered the first deposit, though a change of currents might make the arrangement of detritus different. Again, the accumulation of trees would be greater in one part of the flood than in another, but they would be found in both hemispheres, because the waters flowed to both of the depressed parts which were upheaved. During the deposit of the drifts and coal formations the continents would be slowly rising at the rate of from one to two miles a month, for some portions of the continent would have to be upheaved twenty-three miles, and other parts to a less distance. It was shown that the most depressed portion was about eighteen miles deep, and some of the mountains are five miles high; and eighteen plus five are twenty-three; but the upheaving would be at a certain ratio, according to depression and the weight of the matter to be upheaved.

It has been shown that the centrifugal force upheaves matter according to density, therefore it does not follow that the highest part of a continent should be in the centre of it. It is necessary also to consider, not only, that the continents were upheaved, but also the bottom of the ocean in each hemisphere, and the water in the ocean must have been bulged out to a certain degree. This idea has been repeatedly explained in previous pages. One of the depressed parts upheaved being in the eastern hemisphere, and the other in the western hemisphere; but both parts were upheaved into continents.

On the hypothesis that there is a difference in the density of water at various depths, it is reasonable that the lighter kinds of wood, such as pine and cedar, would not sink so deep as oak or maple. The heaviest kinds of wood, such as mahogany or lignum-vitæ, would sink to the greatest depths, and these sorts of wood would form the deep layers of anthracite coal, the combustion of which is so pleasing to aristocratic persons while it is being consumed in the artistic base-burning stoves.

As the pressure on these lower formations would be greatest, the heat formed by the gradual condensation of the mass and its closer proximity to the heated matter under the crust would convert the mass of trees and leaves into pulp. The enormous pressure that would be exerted on the mass to upheave it would convert it into a compact solid. The lighter kinds of wood which swam at a less depth than the harder kinds of wood would not find lodgment until the continent was upheaved, so that the waters above it would not be over four or five miles deep. Clay sinks last in agitated waters. Some of the higher deposits of coal would be covered only with argillaceous substances, but these coals would be quite soft, and the shale which might cover them would be filled with the remains of infusoria, and very minute mollusks, so that after the hardened shale was exposed to the action of air it would crumble to dust; just as the bones of animals are known to do after they have been buried for many years.

Doubtless, there were pitch-pine trees in the antediluvean ages, just as there are pine trees in the postdiluvean time. The leaves of these trees are not deciduous. Fish love to gather around islands where the water is not deep; but at the time of the flood there were no islands, so, inferentially, various sorts of fish gathered into the recesses of the masses of pitch-pine trees, which swam to a slight distance below the surface, before the interstices of them became filled with other leaves.

Last summer, at a place called Burnt River, Ont., I was watching lumbermen driving pine logs in the stream, or rather an artificial channel, from the lake to the saw-mill. Every now and then some one of the men would spear a dog fish with his pike. It seemed that these fish in large numbers had taken a liking to the cover which these logs had made. I was doubly pleased to see the men kill these fish, for two reasons. First, it pleased me to see the men pleased. I had found that the men who worked at this mill were not only the most intelligent mill-men I had met with, but they were a jolly set of good-natured fellows as well; and then the fish they killed were not only regarded as unfit for food, but they preyed on edible sorts of fish.

Doubtless, eels in vast numbers found resting-place in the pitch-pine recesses of trees, which they would do for this reason, viz., to eat the little fish that would seek the protection that the limbs of the trees afforded them. Now, it is not difficult to imagine, that a mass of