

forts to ascertain the rate of their growth. The foundations of Fort Jefferson, on Tortugas Island, and of Fort Taylor, at Key West, showed that the reefs had risen one inch in Fourteen years. This would give in round numbers, after allowing for inaccuracies, say one foot in a century. This is doubtless more rapid than the actual growth, as the mass near the bottom is crushed together and compressed by the superincumbent weight, and it would probably take at least two centuries to grow one foot. But calling it one foot in a century it would take a reef sixty centuries or six thousand years, to rise from a depth of sixty feet to the surface.

Let this indicate the outline of the southern end of Florida. Nearly parallel with the coast, diverging from it toward the west, is a row of small islands, called keys, and beyond these again a row of still smaller islands, which are called coral reefs. On examining the keys, too, they are found to be reefs of coral. Now, as the reef building polyps can live only in the clean sea water, and perish if brought into the muddy water inside the reefs, we come to the conclusion that the keys were built up before the outer reefs were commenced. And if we allow the same rate of growth for them, their foundations must have been laid at least 12,000 years ago.

Along the coast is a marshy tract of land called the Indian Hunting Grounds, and beyond this, still parallel with the coast, is a row of low elevations called hammocks, rising some ten or twelve feet above the surface of the swamp, the mountains of that district; and these, on examination, are found to be still older coral reefs, carrying back our chronology another 6,000 years. Beyond these there is still another row, making 24,000 years.

The distance from the outer reefs to those last named is fifteen miles. I am told by intelligent officers of the army who have explored the country to Lake Okeechobee, sixty miles inland, that it is all formed of series of coral reefs. In fact, the whole peninsula of Florida is a coral formation, and we are brought to the conclusion that hundreds of thousands of years have been consumed in its slow growth.

And yet this is to-day in the chronology of our globe. The polyps that have built up Florida belong to living species. In the divisions of geologists this is the present formation. When we examine rocks formed by extinct species, we are led to a knowledge of periods still more inconceivable, during which nature has been conducting her operations.

HARDWARE IN THE EXHIBITION OF 1862.

The *Ironmonger* says:—Exhibitors in the hardware centres are now manifesting considerable interest in the Exhibition of 1862, and great activity is being displayed in preparing specimens.

It is said, on the authority of the Royal Commissioners, that the total demand for floor space is seven times the quantity of that available. That being the case, the awards of space of floor do not appear liable to dispute, and, admitting that the duties are arduous which the local committees have had to perform, their hands have been strengthened by a most judicious letter which has been issued by the Royal Commissioners, and which is

full of information, alike to local committees and exhibitors. In that letter exhibitors are encouraged to endeavour to pile their goods, in the official words, by the "construction of screens or vertical cases, rising above the counters, or objects arranged on the floor. These screens, throughout the building, may be at least 12 feet high, and in some cases 25 feet, or even higher." Very few general hardwares, however, can be so treated, and the exhibiting of them prove of advantage to the exhibitor. For articles which will be suspended over head (not on walls) there is, practically, an unlimited space at the disposal of the Commissioners. Of this mode of exhibition, too, hardware manufacturers will, generally, be unable to avail themselves.

Steps are being taken in Wolverhampton which are likely to revive the great lock controversy of ten years ago. There is now in course of manufacture in that town a new patent keyless lock, having 244,140,125 combinations, to open all of which would take a man—supposing he could live so long—some 130 years! This extraordinary lock, which is based upon the permutation principle, is the invention of Viscount de Kersolun, of Paris, and by him communicated to Mr. Edward Loysel, of Cannon street, London, who is better known as the patentee of the coffee percolator. Although it is termed a keyless lock, it has as many keys as there are combinations, the back parts being the locks and the front parts the keys, which cannot be removed. Every change made in the concentric rings answers the same purpose as the keys, so that a lock which has seven permutations, or 5,040 combinations, has 5,040 keys, and so it is termed a keyless lock, with 5,040 or any number of keys. The specimen has six concentric cylinders, upon the projecting or outer edges of which are twenty-five of the twenty-six letters of the alphabet, and it is only when these letters are brought to a certain predetermined arrangement that the other parts of the lock can be worked as to admit of the bolt being drawn for the purpose of shutting or opening the article to which the lock is applied. It is absolutely necessary, as in the old letter padlock, to know the proper arrangement or combination of letters before the lock can be opened. In order to prevent the particular combination of letters from being discovered by feeling the parts, as is sometimes the case, the inner edges of the moveable concentric cylinders are toothed or serrated, so as to deceive any person who may attempt to tamper with the lock. In the event of the particular combination of letters not being discovered by the person desirous of opening the lock, the exhausting of all the variations which are in that case necessary to the success of the operation would entail an expenditure of the time we have mentioned, supposing the operator to make ten changes a minute, and to manipulate ten hours on every working day. It is intended to place these locks on some iron safes that are also being made in Wolverhampton for exhibition at the forthcoming "World's Fair." In one of the safes it is proposed to place the sum of £500, which is to fall to the lot of the person who may be fortunate enough to effect an opening into the safe. The production of the lock for the market is in the hands of Mr. Aubin, the inventor of the "Trophy lock of inge-