

considered as a lever, and  $b$  the fulcrum: then the two arms  $a$  and  $b$  being equal, the lever will afford no aid as a mechanical power; since the power must be equal to the weight in order to balance it, and superior to the weight in order to raise it. In the moveable pulley you must consider the point  $A$  as the fulcrum;  $A$  is, or half the diameter of the pulley, as the shorter arm; and  $a$ , or the whole diameter, as the longer arm. It may, perhaps, be objected to pulleys, that a longer time is required to raise a weight with their aid than without it. That is true, for it is a fundamental law in mechanics, that what is gained in power is lost in time; this applies not only to the pulley, but to the lever and all the other mechanical powers. It would be wrong, however, to suppose that the loss was equivalent to the gain, and that we derived no advantage from the mechanical powers; for since we are incapable of augmenting our strength, that science is of wonderful utility which enables us to reduce the resistance or weight of any body to the level of our strength. This we accomplish, by dividing the resistance of a body into parts, which we can successively overcome; and if it require a sacrifice of time to attain this end, you must be sensible how very advantageously it is exchanged

for power. The greater the number of pulleys connected by a string, the more easily the weight is raised; as the difficulty is divided amongst the number of strings, or rather of parts, into which the string is divided by the pulleys. Several pulleys, thus connected, form what is called a system, or tackle of pulleys. You may have seen them suspended from cranes to raise goods into warehouses, and in ships to draw up sails. Here both the advantages of an increase of power and change of direction are united; for the sails are raised up the masts by the sailors on deck, from the change of direction which the pulleys effect; and the labour is facilitated by the mechanical power of a combination of pulleys. Pulleys are frequently connected, as described, both for nautical and a variety of other purposes; but in whatever manner pulleys are connected by a single string, the mechanical power is the same in its

principle. When there are two, three, &c., strings, the effect is greater; but the apparatus is more complicated, and its applicability is more limited.

#### A HUNDRED YEARS HENCE.

It strikes me as the most impressive of all sentiments, that "It will be all the same a hundred years after this!" It is often used in the form of a proverb, and with the levity of a mind that is not aware of its importance. A hundred years after this! Good Heavens! with what speed and with what certainty will those hundred years come to their termination! This day will draw to a close, and a number of days make one revolution of the season. Year follows year, and a number of years make a century. These little intervals of time accumulate and fill up that mighty space which appears to the fancy so big and so immeasurable. The hundred years will see the wreck of whole generations. Every living thing that moves on the face of the earth, will disappear from it. The infant that now hangs on its mother's bosom, will only live in the remembrance of his grand-children. The scene of life and of intelligence that is now before me, will be changed into the

dark and loathsome form of corruption—The people who now hear me, they will cease to be spoken of; their memory will perish from the face of the country; their flesh will be devoured by worms; the dark and creeping things that live in the holes of the earth will feed upon their bodies; their coffins will have mouldered away, and their bones be thrown up in the new made grave. And is this the consummation of all things? Is this the final end and issue of man? Is this the upshot of his busy history? Is there nothing beyond time and the grave to alleviate the gloomy picture?—to chase away these dismal images?—Must we sleep forever in the dust, and bid adieu to the light of Heaven?—*Dr. Chalmers' Sermons and Posthumous Works.*

#### THE APPLES OF THE DEAD SEA.

"We made a somewhat singular discovery when travelling among the mountains to the east of the Dead Sea, where the ruins of Ammon, Jerash, and Adjeloun well repay the labour and fatigue encountered in visiting them. It was a remarkable hot and sultry day; we were scrambling up the mountain through a thick jungle of bushes and low trees when I saw before me a fine plum-tree, loaded with fresh blooming plums. I cried out to my fellow traveller, 'Now, then, who will arrive first at the plum-tree?' and as he caught a glimpse of so refreshing an object both pressed our we horses into a gallop to see which would get the first plum from the branches. We both arrived at the same moment, and, each snatching at a fine ripe plum, put it at once into our mouths, when, on biting it, instead of the cool, delicious, juicy fruit which we expected, our mouths were filled with a dry bitter dust, and we sat under the trees with our horses sputtering and hemming, and doing all we could to be relieved of the nauseous taste of this strange fruit. We then perceived, and to my great delight, that we had discovered the famous apple of the Dead Sea, the existence of which has been doubted and canvassed since the days of Strabo and Pliny, who first described it. Many travellers have given descriptions of other vegetable productions which bear some analogy to the one described by Pliny; but up to this time no one had met with the thing itself, either upon the spot mentioned by the ancient authors or elsewhere. I brought several of them to England. They are a kind of gall-nut. I found others afterwards upon the plains of Troy, but there can be no doubt whatever that this is the apple of Sodom to which Strabo and Pliny referred. Some of those which I brought to England were given to the Linnæan Society, who published an engraving of them and a description of their vegetable peculiarities in their *Transactions*; but, as they omitted to explain the peculiar interest attached to them in consequence of their having been sought for unsuccessfully for above 1,500 years, they excited little attention; though, as the evidence of the truth of what has so long been considered as a vulgar fable, they are fairly to be classed among the most curious productions which have been brought from the Holy Land."

—*Curzon's Monasteries of the Levant.*