

pieces the finest-tempered axes with which we endeavored to cut them down.' ”\*

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\* “One of the most remarkable natural curiosities in Texas is a petrified forest, near the head of Pasigno River. It consists of several hundred trees, in an erect position, all turned to stone. Some trees, now growing, are partly petrified. This is a startling fact for natural philosophers, and must cause them to modify the existing theory of petrification.—*Kennedy*.

This account, at first discredited, has since been corroborated by the discovery of a completely petrified forest, near the head waters of the Cheyenne, or Chienne River, which has its source in the Black Hills of the rocky chain.

There is scarcely, perhaps, a spectacle on the surface of the globe more remarkable, either in a geological or picturesque point of view than that presented by the petrified forest, near Cairo. The traveller, having passed the tombs of the caliphs, just beyond the gates of the city, proceeds to the southward, nearly at right angles to the road across the desert to Suez, and after having travelled some ten miles up a low barren valley, covered with sand, gravel, and sea shells, fresh as if the tide had retired but yesterday, crosses a low range of sandhills, which has for some distance run parallel to his path. The scene now presented to him is beyond conception singular and desolate. A mass of fragments of trees, all converted into stone, and when struck by his horse's hoof ringing like cast iron, is seen to extend itself for miles and miles around him, in the form of a decayed and prostrate forest. The wood is of a dark brown hue, but retains its form in perfection, the pieces being from one to fifteen feet in length, and from half a foot to three feet in thickness, strewed so closely together, as far as the eye can reach, that an Egyptian donkey can scarcely thread its way through among them, and so natural that, were it in Scotland or Ireland, it might pass without remark for some enormous drained bog, on which the exhumed trees lay rotting in the sun. The roots and rudiments of the branches are, in many cases, nearly perfect, and in some the worm-holes eaten under the bark are readily recognizable. The most delicate of the sap vessels, and all the finer portions of the centre of the wood, are perfectly entire, and bear to be examined with the

“Hum!” said the king, again; but Scheherazade, paying him no attention, continued in the language of Sinbad.

“‘Passing beyond this last island, we reached a country where there was a cave that ran to the distance of thirty or forty miles within the bowels of the earth, and that contained a greater number of far more spacious and more magnificent palaces than are to be found in all Damascus and Bagdad. From the roofs of these palaces there hung myriads of gems, like diamonds, but larger than men; and in among the streets of towers and pyramids and temples, there flowed immense rivers as black as ebony, and swarming with fish that had no eyes.’ ”\*

“Hum!” said the king.

“‘We then swam into a region of the sea where we found a lofty mountain, down whose sides there streamed torrents of melted metal, some of which were twelve miles wide and sixty miles long; † while from an abyss on the summit, issued so vast a quantity of ashes that the sun was entirely blotted out from the heavens, and it became darker than the darkest midnight; so that when we were even at the distance of a hundred and fifty miles from the moun-

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strongest magnifiers. The whole are so thoroughly silicified as to scratch glass and are capable of receiving the highest polish.—*Asiatic Magazine*.

\* The Mammoth Cave of Kentucky.

† In Iceland, 1783.

tain, it was impossible to see the whitest object, however close we held it to our eyes.' " \*

"Hum!" said the king.

"After quitting this coast, the beast continued his voyage until we met with a land in which the nature of things seemed reversed—for we here saw a great lake, at the bottom of which, more than a hundred feet beneath the surface of the water, there flourished in full leaf a forest of tall and luxuriant trees.' " †

"Hoo!" said the king.

"Some hundred miles further on brought us to a climate where the atmosphere was so dense as to sustain iron or steel, just as our own does feather.' " ‡

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\* "During the eruption of Hecla, in 1766, clouds of this kind produced such a degree of darkness that, at Glaumba, which is more than fifty leagues from the mountain, people could only find their way by groping. During the eruption of Vesuvius, in 1794, at Caserta, four leagues distant, people could only walk by the light of torches. On the first of May, 1812, a cloud of volcanic ashes and sand, coming from a volcano in the island of St. Vincent, covered the whole of Barbadoes, spreading over it so intense a darkness that, at midday, in the open air, one could not perceive the trees or other objects near him, or even a white handkerchief placed at the distance of six inches from the eye."—*Murray*, p. 215, *Phil. edit.*

† "In the year 1790, in the Caracas during an earthquake a portion of the granite soil sank and left a lake eight hundred yards in diameter, and from eighty to a hundred feet deep. It was a part of the forest of Aripao which sank, and the trees remained green for several months under the water."—*Murray*, p. 221.

‡ The hardest steel ever manufactured may, under the action of a blow-pipe, be reduced to an impalpable powder, which will float readily in the atmospheric air.

"Fiddle de dee," said the king.

"Proceeding still in the same direction, we presently arrived at the most magnificent region in the whole world. Through it there meandered a glorious river for several thousands of miles. This river was of unspeakable depth, and of a transparency richer than that of amber. It was from three to six miles in width; and its banks, which arose on either side to twelve hundred feet in perpendicular height, were crowned with ever-blossoming trees, and perpetual sweet-scented flowers, that made the whole territory one gorgeous garden; but the name of this luxuriant land was the Kingdom of Horror, and to enter it was inevitable death.' " \*

"Humph!" said the king.

"We left this kingdom in great haste, and, after some days, came to another, where we were astonished to perceive myriads of monstrous animals with horns resembling scythes upon their heads. These hideous beasts dig for themselves vast caverns in the soil, of a funnel shape, and line the sides of them with rocks, so disposed one upon the other that they fall instantly, when trodden upon by other animals, thus precipitating them into the monster's dens, where their blood is immediately sucked, and their carcasses afterward hurled contemptuously out to

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\* The region of the Niger. See *Simmons's "Colonial Magazine."*

an immense distance from "the caverns of death." " " " \*

"Pooh!" said the king.

"Continuing our progress, we perceived a district with vegetables that grew not upon any soil, but in the air. † There were others that sprang from the substance of other vegetables; ‡ others that derived their substance from the bodies of living animals; § and then again, there were others that glowed all over with intense fire; || others that moved from

\* The *Myrmeleon*—lion-ant. The term "monster" is equally applicable to small abnormal things and to great, while such epithets as "vast" are merely comparative. The cavern of the myrmeleon is *vast* in comparison with the hole of the common red ant. A grain of silex is also a "rock."

† The *Epidendron*, *Flos Aeris*, of the family of the *Orchideae*, grows with merely the surface of its roots attached to a tree or other object, from which it derives no nutriment—subsisting altogether upon air.

‡ The *Parasites*, such as the wonderful *Rafflesia Arnaldii*.

§ *Schouw* advocates a class of plants that grow upon living animals—the *Plantae Epizoeae*. Of this class are the *Fuci* and *Algae*.

|| *Mr. J. B. Williams, of Salem, Mass.*, presented the "National Institute" with an insect from New Zealand, with the following description: "The *Hotte*," a decided caterpillar, or worm, is found growing at the foot of the *Rata* tree, with a plant growing out of its head. This most peculiar and most extraordinary insect travels up both the *Rata* and *Perriri* trees, and entering into the top, eats its way, perforating the trunk of the tree until it reaches the root, it then comes out of the root, and dies, or remains dormant, and the plant propagates out of its head; the body remains perfect and entire, of a harder substance than when alive. From this insect the natives make a coloring for tattooing."

|| In mines and natural caves we find a species of cryptogamous *fungus* that emits an intense phosphorescence.

place to place at pleasure,\* and what was still more wonderful, we discovered flowers that lived and breathed and moved their limbs at will, and had, moreover, the detestable passion of mankind for enslaving other creatures, and confining them in horrid and solitary prisons until the fulfilment of appointed tasks.' " †

"Pshaw!" said the king.

"Quitting this land, we soon arrived at another in which the bees and the birds are mathematicians

\* The orchis, scabius and valisneria.

† "The corolla of this flower (*Aristolochia Clematitis*), which is tabular, but terminating upward in a ligulate limb, is inflated into a globular figure at the base. The tubular part is internally beset with stiff hairs, pointing downward. The globular part contains the pistil, which consists merely of a germen and stigma, together with the surrounding stamens. But the stamens, being shorter than even the germen, can not discharge the pollen so as to throw it upon the stigma, as the flower stands always upright till after impregnation. And hence, without some additional and peculiar aid, the pollen must necessarily fall down to the bottom of the flower. Now, the aid that nature has furnished in this case is that of the *Tiputa Pennicornis*, a small insect, which entering the tube of the corolla in quest of honey, descends to the bottom, and rummages about till it becomes quite covered with pollen; but not being able to force its way out again, owing to the downward position of the hairs, which converge to a point like the wires of a mouse-trap, and being somewhat impatient of its confinement it brushes backward and forward, trying every corner, till, after repeatedly traversing the stigma, it covers it with pollen sufficient for its impregnation, in consequence of which the flower soon begins to droop, and the hairs to shrink to the sides of the tube, effecting an easy passage for the escape of the insect."—*Rev. P. Keith*—"System of Physiological Botany."

of such genius and erudition, that they give daily instructions in the science of geometry to the wise men of the empire. The king of the place having offered a reward for the solution of two very difficult problems, they were solved upon the spot—the one by the bees, and the other by the birds; but the king keeping their solution a secret, it was only after the most profound researches and labor, and the writing of an infinity of big books, during a long series of years, that the men-mathematicians at length arrived at the identical solutions which had been given upon the spot by the bees and by the birds.’” \*

“Oh, my!” said the king.

“We had scarcely lost sight of this empire when

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\* The bees—ever since bees were—have been constructing their cells with just such sides, in just such number, and at just such inclinations, as it has been demonstrated (in a problem involving the profoundest mathematical principles) are the very sides, in the very number, and at the very angles, which will afford the creatures the most room that is compatible with the greatest stability of structure.

During the latter part of the last century, the question arose among mathematicians—“to determine the best form that can be given to the sails of a windmill, according to their varying distances from the revolving vanes, and likewise from the centres of the revolution.” This is an excessively complex problem, for it is, in other words, to find the best possible position at an infinity of varied distances, and at an infinity of points on the arm. There were a thousand futile attempts to answer the query on the part of the most illustrious mathematicians; and when, at length, an undeniable solution was discovered, men found that the wings of a bird had given it with absolute precision ever since the first bird had traversed the air.

we found ourselves close upon another, from whose shores there flew over our heads a flock of fowls a mile in breadth, and two hundred and forty miles long; so that, although they flew a mile during every minute, it required no less than four hours for the whole flock to pass over us—in which there were several millions of millions of fowl.’” \*

“Oh fy!” said the king.

“No sooner had we got rid of these birds, which occasioned us great annoyance, than we were terrified by the appearance of a fowl of another kind, and infinitely larger than even the rocs which I met in my former voyages; for it was bigger than the biggest of the domes on your seraglia, oh, most Munificent of Caliphs. This terrible fowl had no head that we could perceive, but was fashioned entirely of belly, which was of a prodigious fatness and roundness, of a soft-looking substance, smooth, shining and striped with various colors. In its talons, the monster was bearing away to his eyrie in the heavens, a house from which it had knocked off the roof, and in the interior of which we distinctly saw human beings, who, beyond doubt, were in a state of frightful despair at the horrible fate which

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\* He observed a flock of pigeons passing between Frankfort and the Indian Territory, one mile at least in breadth; it took up four hours in passing; which, at the rate of one mile per minute, gives a length of 240 miles; and, supposing three pigeons to each square yard, gives 2,230,272,000 pigeons.—“*Travels in Canada and the United States,*” by Lieut. F. Hall.

awaited them. We shouted with all our might, in the hope of frightening the bird into letting go of its prey; but it merely gave a snort or puff, as if of rage and then let fall upon our heads a heavy sack which proved to be filled with sand!"

"Stuff!" said the king.

"It was just after this adventure that we encountered a continent of immense extent and prodigious solidity, but which, nevertheless, was supported entirely upon the back of a sky-blue cow that had no fewer than four hundred horns."\*

"That, now I believe," said the king, "because I have read something of the kind before, in a book."

"We passed immediately beneath this continent (swimming in between the legs of the cow), and, after some hours, found ourselves in a wonderful country indeed, which, I was informed by the man-animal, was his own native land, inhabited by things of his own species. This elevated the man-animal very much in my esteem, and in fact I now began to feel ashamed of the contemptuous familiarity with which I had treated him; for I found that the man-animals in general were a nation of the most powerful magicians, who lived with worms in their brain,† which, no doubt, served to stimulate

\* "The earth is upheld by a cow of a blue color, having horns four hundred in number."—*Sale's Koran*.

† "The *Entozoa*, or intestinal worms, have repeatedly been observed in the muscles, and in the cerebral substance of men."—*See Wyatt's Physiology*, p. 143.

them by their painful writhings and wriggings to the most miraculous efforts of imagination."

"Nonsense!" said the king.

"Among the magicians were domesticated several animals of very singular kinds; for example, there was a huge horse whose bones were iron and whose blood was boiling water. In place of corn, he had black stones for his usual food; and yet, in spite of so hard a diet, he was so strong and swift that he could drag a load more weighty than the grandest temple in this city, at a rate surpassing that of the flight of birds."\*

"Twattle!" said the king.

"I saw, also, among these people a hen without feathers, but bigger than a camel; instead of flesh and bone she had iron and brick; her blood, like that of the horse (to whom, in fact, she was nearly related), was boiling water; and like him she ate nothing but wood or black stones. This hen brought forth very frequently, a hundred chickens in the day; and, after birth, they took up their residence for several weeks within the stomach of their mother."†

"Fal lal!" said the king.

"One of this nation of mighty conjurers created a man out of brass and wood, and leather, and en-

\* On the Great Western Railway, between London and Exeter, a speed of 71 miles per hour has been attained. A train weighing 90 tons was whirled from Paddington to Didcot (53 miles) in 51 minutes.

† The *Eccaleobion*.

dowed him with such ingenuity that he would have beaten at chess all the race of mankind with the exception of the great Caliph, Haroun al Raschid.\* Another of these magi constructed (of like material) a creature that put to shame even the genius of him who made it; for so great were its reasoning powers that, in a second, it performed calculations of so vast an extent that they would have required the united labor of fifty thousand fleshy men for a year.† But a still more wonderful conjurer fashioned for himself a mighty thing that was neither man nor beast, but which had brains of lead, intermixed with a black matter like pitch, and fingers that it employed with such incredible speed and dexterity that it would have had no trouble in writing out twenty thousand copies of the Koran in an hour; and this with so exquisite a precision, that in all the copies there should not be found one to vary from another by the breadth of the finest hair. This thing was of prodigious strength, so that it erected or overthrew the mightiest empires at a breath; but its powers were exercised equally for evil and for good.”

“Ridiculous!” said the king.

“Among this nation of necromancers there was also one who had in his veins the blood of the salamanders; for he made no scruple of sitting down to smoke his chibouc in a red-hot oven until his dinner

\* Maelzel's Automaton Chess-player.

† Babbage's Calculating Machine.

was thoroughly roasted upon its floor.\* Another had the faculty of converting the common metals into gold, without even looking at them during the process.† Another had such a delicacy of touch that he made a wire so fine as to be invisible.‡ Another had such quickness of perception that he counted all the separate motions of an elastic body, while it was springing backward and forward at the rate of nine hundred millions of times in a second.”§

“Absurd!” said the king.

“Another of these magicians, by means of a fluid that nobody ever yet saw, could make the corpses of his friends brandish their arms, kick out their legs, fight, or even get up and dance at his will.¶ Another had cultivated his voice to so great an extent that he could have made himself heard from one end of the world to the other.¶ Another had so long an arm that he could sit down in Damascus and indite a letter at Bagdad—or indeed at any distance whatsoever.\*\* Another commanded the

\* *Chabert*, and since him, a hundred others.

† The Electrotype.

‡ *Wollaston* made of platinum for the field of views in a telescope a wire one eighteen-thousandth part of an inch in thickness. It could be seen only by means of the microscope.

§ Newton demonstrated that the retina beneath the influence of the violet ray of the spectrum vibrated 900,000,000 of times in a second.

¶ The Voltaic pile.

¶ The Electro Telegraph Printing Apparatus.

\*\* The Electro Telegraph transmits intelligence instantaneously—at least so far as regards any distance upon the earth.

lightning to come down to him out of the heavens, and it came at his call; and served him for a play-thing when it came. Another took two loud sounds and out of them made a silence. Another constructed a deep darkness out of two brilliant lights.\* Another made ice in a red-hot furnace.† Another directed the sun to paint his portrait, and the sun did.‡ Another took this luminary with the moon and the planets, and having first weighed them with

\* Common experiments in Natural Philosophy. If two red rays from two luminous points be admitted into a dark chamber so as to fall on a white surface, and differ in their length by 0.0000258 of an inch, their intensity is doubled. So also if the difference in length be any whole-number multiple of that fraction. A multiple by  $2\frac{1}{4}$ ,  $3\frac{1}{4}$ , etc., gives an intensity equal to one ray only; but a multiple by  $2\frac{1}{2}$ ,  $3\frac{1}{2}$ , etc., gives the result of total darkness. In violet rays similar effects arise when the difference in length is 0.000157 of an inch; and with all other rays the results are the same—the difference varying with a uniform increase from the violet to the red.

Analogous experiments in respect to sound produce analogous results.

† Place a platina crucible over a spirit lamp, and keep it a red heat; pour in some sulphuric acid, which, though the most volatile of bodies at a common temperature, will be found to become completely fixed in a hot crucible, and not a drop evaporates—being surrounded by an atmosphere of its own, it does not, in fact, touch the sides. A few drops of water are now introduced, when the acid, immediately coming in contact with the heated sides of the crucible, flies off in sulphurous acid vapor, and so rapid is its progress, that the caloric of the water passes off with it, which falls a lump of ice to the bottom; by taking advantage of the moment before it is allowed to re-melt, it may be turned out a lump of ice from a red-hot vessel.

‡ The Daguerreotype.

scrupulous accuracy, probed into their depths and found out the solidity of the substance of which they are made. But the whole nation is, indeed, of so surprising a necromantic ability, that not even their infants, nor their commonest cats and dogs, have any difficulty in seeing objects that do not exist at all, or that for twenty millions of years before the birth of the nation itself had been blotted out from the face of creation.’” \*

“Preposterous!” said the king.

“‘The wives and daughters of these incomparably great and wise magi,’” continued Scheherazade, without being in any manner disturbed by these frequent and most ungentlemanly interruptions on the part of her husband—“‘the wives and daughters of these eminent conjurers are everything that is accomplished and refined; and would be everything that is interesting and beautiful, but for an unhappy

\* Although light travels 167,000 miles in a second, the distance of 61 Cygni (the only star whose distance is ascertained) is so inconceivably great, that its rays would require more than ten years to reach the earth. For stars beyond this, 20— or even 1,000—years would be a moderate estimate. Thus, if they had been annihilated 20 or 1,000 years ago, we might still see them to-day by the light which *started* from their surfaces 20 or 1,000 years in the past time. That many which we see daily are really extinct, is not impossible—not even improbable.

The elder Herschel maintains that the light of the faintest nebulae seen through his great telescope must have taken 3,000,000 years in reaching the earth. Some, made visible by Lord Ross’s instrument, must, then, have required at least 20,000,000.

fatality that besets them, and from which not even the miraculous powers of their husbands and fathers has, hitherto, been adequate to save. Some fatalities come in certain shapes, and some in others—but this of which I speak has come in the shape of a crotchet.’ ”

“A what?” said the king.

“‘A crotchet,’ ” said Scheherazade. “‘One of the evil geniï, who are perpetually upon the watch to inflict ill, has put it into the heads of these accomplished ladies that the thing which we describe as personal beauty consists altogether in the protuberance of the region which lies not very far below the small of the back. Perfection of loveliness, they say, is in the direct ratio of the extent of this lump. Having been long possessed of this idea, and bolsters being cheap in that country, the days have long gone by since it was possible to distinguish a woman from a dromedary—’ ”

“Stop!” said the king—“I can’t stand that, and I won’t. You have already given me a dreadful headache with your lies. The day, too, I perceive, is beginning to break. How long have we been married?—my conscience is getting to be troublesome again. And then that dromedary touch—do you take me for a fool? Upon the whole, you might as well get up and be throttled.”

These words, as I learn from the “*Isitsöornot*,” both grieved and astonished Scheherazade; but, as

she knew the king to be a man of scrupulous integrity, and quite unlikely to forfeit his word, she submitted to her fate with a good grace. She derived, however, great consolation (during the tightening of the bowstring), from the reflection that much of the history remained still untold, and that the petulance of her brute of a husband had reaped for him a most righteous reward, in depriving him of many inconceivable adventures.