

one of the most important and universal colouring materials in use. By itself it produces a beautiful purple colour, and when united with a solution of tin and muriatic acid, a beautiful scarlet colour is formed, altogether imitable by any other process of dyeing. The Cochineal insect has been known for two or three hundred years for its valuable colouring properties. Special attention is paid to their propagation in several parts of the world, but we believe the largest proportion of the quantity brought to market comes from Mexico. The insect is raised in Georgia and Alabama, as well as in some parts of the West Indies, but the quantity produced in those parts is small, compared with the supply from Mexico. The state of Oaxaca, in Mexico, is where the breeding of Cochineal is carried on to the greatest extent. The insect feeds upon the flowers of a wild fig-tree called nopal, a species of the cactus. The plant has many stems, upon which buds appear having prickles upon their ends. These buds expand into wide thick leaves, from which the Cochineal insect extracts juice—its sustenance. The nopal is easily cultivated from cuttings, it being only necessary to plant a stem in the ground to have it take root, and grow finely. Cuttings are sufficiently grown for the insects, in eighteen months after planting. In Oaxaca there are large plantations devoted to the production of Cochineal. The nopal cuttings are planted two feet apart, and upon some of the stems little nests of cotton are placed, on the side towards the rising sun; into these nests a female insect is placed. The female, after laying about one thousand eggs in the nest, dies, her dead body becoming a covering and protection to the eggs, until hatched. Six generations of these insects are produced every season. The young, as soon as they leave their shells, work their way out and commence feeding. They are at first so minute as to be invisible, except with a microscope. In a little while more their skins harden, forming a cocoon, from which they soon emerge again into the chrysalis state, and then become perfect insects. When the proper season arrives for gathering the Cochineal which is in December, the Indian women go patiently to work, using a dull knife or brush, scraping the insects off from the plants, into their aprons and baskets. When a large quantity is collected the insects are roasted alive in an oven, which of course deprives them of life, and dries them, and thus prepares them for market.

HEARING OF ANIMALS.

Among mammalia the formation of the ear varies in very many cases, according to the habits and peculiar nature of the animal. The portion of the ear of the mole assigned for the cognizance of sounds passing in the ear, is less perfect than those, which, deeper seated, receive the impression of any sound or vibration proceeding from the earth. The beaver has the power, when diving to fold its ear backwards on its head, and the water-shrew, for the same purpose, has three distinct flaps, which close the orifice, in the same manner that many diving and burrowing animals are furnished with flaps to the nose, by which they close the entrance to all injurious bodies. The hippopotamus, which remains for lengthened periods beneath the surface of the water, is also provided with a valve-like apparatus. Hares and rabbits, which squat close on the ground, and which might be more readily discovered, were any projecting point of their bodies to be visible, fold their ears flat backward. In all, this sense is remarkably keen; and with horses it is only exceeded by that of the smell, they hear wounds, and are restless long before the rider can perceive an animal or a human being in the distance. The carrier-horses in Switzerland hear the fall of an avalanche, and warn their masters by their terror, and by refusing to advance, and even by turning in an opposite direction. The acute sensibility of this organ is somewhat obstructed by the bushy hairs which grow in the

outer sheath; and thus horse-dealers cut them out from horses they have for sale, in order that sounds, striking on the nerves with greater force, may by exciting the animals, give them a more lively appearance. The flight of the bat, like that of the owl, is perfectly noiseless; and its ear, equally acute, detects the slightest humming of an insect, at a distance of several feet, and while it catches such as are in flight, it touches some which have settled or are silent.

THE COCOA-NUT PALM TREE.

When the Cingalese villager has felled one of these trees after it has ceased bearing, (say in its seventeenth year,) with its trunk he builds his hut, and his bullock stall, which he thatches with its leaves. His bolts and bars are slips of the bark; by which he also suspends the small shell which holds his stock of home-made utensils and vessels. He fences his little plot of chillies, tobacco, and fine grain, with the leaf stalks. The infant is swung to sleep in a rude net of coconuts, made from the husk of the fruit; its meal of rice and scraped cocoa-nut is boiled over a fire of cocoa-nut shells and husks, and is eaten off a dish formed of the platted green leaves of the tree, with a spoon cut out of a nut shell. When he goes a fishing by torch light, his net is of a cocoa-nut fibre; the torch or chule is a bundle of dried cocoa-nut leaves and flower stalks; the little canoe is a trunk of the cocoa palm-tree, hollowed by his own hands. He carries home his net and his string of fish on a yoke, or pingo, formed of a cocoa-nut stalk. When he is thirsty, he drinks of the fresh juice of the young nut; when he is hungry, he eats its soft kernel. If he has a mind to be merry, he sips a glass of arrack, distilled from the fermented juice of the palm, and dances to the music of rude cocoa-nut castanets; if he be weary he quaffs toddy of the unfermented juice, and flavors his curry with vinegar made from this toddy. Should he be sick, his body will be rubbed with cocoa-nut oil; he sweetens his coffee with jaggers, or cocoa-nut sugar, and softens it with cocoa-nut milk; it is sipped by the light of a lamp, constructed from a cocoa-nut shell, and fed by cocoa-nut oil. His doors, his windows, his shelves, his chairs, the water gutter under the eaves, all are made from the wood of the tree. His spoons, his forks, his basons, his mugs, his salt-cellars, his jars, his child's money-box, are all constructed from the shell of the nut. Over his couch when born, and over his grave when buried, a bunch of cocoa nut blossoms is hung to charm away evil spirits.

Miscellaneous.

TRUE DUNCAN AND THE CAT.

Once there was a little boy named Duncan. The boys used to call him *True Duncan*, because he would never tell a lie. One day he was playing with an axe in the yard of the school, and while he was chopping a stick, the teacher's cat, Tabby, came along. Duncan let the axe fall right on poor Tabby's head, and killed her. What to do he did not know. She was a pet of the master's, and used to sit on a cushion at his side, while he was hearing the lessons. Duncan stood and looked at the dead creature. His face grew red, and the tears stood in his eyes. All the boys came running up and every one had something to say. One of them whispered to the others and said—

"Now, fellows, we shall see whether Duncan can make up a fib as well as the rest of us."

"Not he!" said Thomas Peoley, who was Duncan's friend. "Not he; I'll warrant you, Duncan will be as true as gold."

John Jones stepped up, and taking the cat by the tail, said—

"Here, boys, I'll just sling her into the alley, and we can tell Mr. Cole that the butcher's dog killed her, you know that he worried her last week."

Several of them thought this would be very well.

But Duncan looked quite angry. His face swelled and his cheeks grew redder than before.

"No!" said he; "no! Do you think I would lie for such a creature as that? It would be a lie, a lie." And each time he said the word, his voice grew louder.

Then he picked up the poor thing in his arms, and carried it into the school room; and the boys followed to see what would happen.

The master looked up and said, "What is this? My faithful mouser dead? Who could have done me such an injury?"

All were silent for a little while. As soon as Duncan could get his voice, he said—

"Mr. Cole, I am very sorry—but here is the truth. I can't lie, sir—I killed Tabby. But I am very sorry for it. I ought to have been careful, for I saw her rubbing her side against the log, I am very sorry, indeed, sir."

Every one expected to see Mr. Cole take down his long tattan. But he put on a pleasant smile and said—

"Duncan you are a brave boy! I saw and heard all that passed from my window above. I had rather lose a hundred cats than miss such an example of truth and honor in my school."

"Your best reward is what you now feel in your own conscience, but I beg you to accept this handsome penknife, as a token of my approbation."

Duncan took out his handkerchief and wiped his eyes.

The boys could no longer refrain themselves; and when Thomas Peoley cried, "three cheers for True Duncan!" all joined in a hearty hurra.

The teacher then said, "My boys, I am glad you know what is right, and that you approve of it; though I am afraid some of you could not have done it."

"Learn from this that nothing can make a falsehood necessary. Suppose Duncan had taken your evil advice, and come to me with a lie; it would have been instantly detected, for I was a witness of what passed."

"I trust he has been governed in this by a sense of right, and I exhort you to follow his example."

VOLCANOS AND EARTHQUAKES.—The *London Times* has an account of a singular experiment made before a private circle, by Professor Gorini, the professor of natural history in the University of Lodi. This gentleman melts some substances, known only to himself, in a vessel, and allows the liquid to cool. At first it presents an even surface, but a portion continues to ooze up from beneath, and gradually elevations are formed until at length ranges and chains of hills are formed, exactly corresponding in shape with those which are found on the earth. Even to the stratification, the resemblance is complete, and Mr. Gorini can produce on a small scale the phenomena of volcanoes and earthquakes. He contends, therefore, "that the inequalities on the face of the globe are the result of certain materials, first reduced by the application of heat to a liquid state, and then allowed gradually to consolidate." The Professor has also it is said, succeeded to a surprising extent, in preserving animal matter from decay, without resorting to any known process for that purpose. Specimens are shown by him of portions of the human body, which, without any alteration in their natural appearance, have been exposed to the action of the atmosphere for six or seven years; and he states that at a trifling cost, he can keep meat for any length of time in such a way that it can be eaten quite fresh.

PECULIARITIES OF THE DESERT.—It is curious to observe the prevalence of the sandy colour of the soil in the creatures that have to exist upon it. Sandy-colored eagles devour sandy-coloured vipers and lizards, which in their turn prey on grasshoppers and slugs of the same complexion; and partridges and sparrows, by means of their resemblance to the ground, avoid the prying eyes of the falcons and hawks.—*Molly's Kharlow and the Nile.*