

of this problem partially achieved. There seems to be no good reason, why an essay on some difficult subject in science, should not be as deserving a prize, as the discussion of a historical problem, or an exposition of the principles of criticism or taste. Literature in its broad and now accepted application comprehends, not only subjects of life, but all the expositions of science and art.

With this broad aim, the intercollegiate contest may year by year grow in importance and interest, until by some organization, which experience will suggest, it may become a National University for American youth. A. R. B.

Notes from Colorado.

Many lands have remarkable evidences of natural force and marvelous combinations of natural beauty, wrought out during the silence of departed centuries, which are the objects of admiration to each successive tourist or adventurer for fortune and fame. We are accustomed to look away from home for places of pleasure and natural scenery, when at our very doors nature displays her handiwork in such a manner as to awaken the imagination of the drowsy, awe the vicious, nerve the trembling and caution the ambitious.

The pleasure to be derived from taking a ride on the narrow gauge railroad from Golden City to Floyd Hill can better be enjoyed than expressed. Take your position on the rear end of one of those little cars, with your hand firmly hold of the railing to steady your person, on a warm summer's day, and feet dangling carelessly down and you are prepared to see a panorama of grandeur and natural scenery pass before you well worth the inconveniences of smoke cinders and dust. To the left of you as you start for the mountains stands the city, the oldest burg in the territory, having been located and peopled ere Denver was known and close beside the track runs the main irrigation ditch which supplies the city with water while in front of you the open country stretches away in a broad plateau fringed by the foot hills on either side widening as they recede until lost in the haze of the distance.

The first slight tumbling up of rocks three or four hundred feet is passed without much admiration, and your eyes curiously follow the long line of irrigation boxes which run along the side of the hills for miles, now resting for their support on the earth, and then propped up with standards while a sharp rocky curve was being turned. But soon you are startled by the solid sternness, the towering massive mountains reaching their rocky heads hundreds of feet upwards struggling, as it were, to lift themselves from among their equally ambitious neighbors. The straggling points of rocks the rugged uneven courses of granite, the scaling surface of slate stone, the overhanging rocks weighing tons and seemingly ready to loosen their hold and come tearing down from their homes, make a shudder creep over you and a feeling of satisfaction arises when the mountains open and the warm sunshine steals through the openings, at times on their sides a smooth solid face is presented and then breaking into rough uneven ridges covered more or less with soil out of which spring tall majestic pine trees. The road frequently seems as though it ended by diving into the base of a huge mountain when around a sharp curve you

turn and the canon widens into a warm beautiful sunlight opening. The mountains spread out until they are ordinary hills, covered with grass and vegetation on which pasture the cattle of ambitious ranch men. The grade, as you pass the canon, is quite gradual, but occasionally it rises rapidly, so much so that one can easily jump off, throw stones in the creek, and regain his seat again. The fastest time made on the road is eight miles an hour with up and down slowing for stoppages. The bed of the road is solid, smooth and narrow, no jarring, rattling or bumping, everything as firm and substantial as the surroundings themselves. Now and then you pass a sign board with the ominous word "whistle;" no crossing, no switch or habitation to suggest meaning or reason for such a caution—nothing but solitude pervades the region. The rushing current of the creek seems to hush its meanderings and the scattering pines, which stand as sentinels to guard the spot, give no answer while the train passes and the fireman heeds not the injunction, and you are left wondering what the warning can signify or why it was given.

High up on the side you see a tree growing out of a crevice and then your eye wanders higher and higher to rest on some massive pile of rock which crowns the top. The different shapes and forms are constantly changing, diversified by shrubs, trees and snow, giving the various aspects of compactness and durability. The three tall, finger-like rocks are announced by a slab fastened to a small chunk driven in a crevice, to be the Sentinels. They are somewhat roundish and look as though they were originally four-cornered, but have been worn. The creek divides them, two being on the east and one on the west side. Many times the rocky character of the mountains leaves no room for telegraph poles, a piece of pine board sharpened and driven into a crevice answering as a substitute. Long before a railroad up this rocky mountain canon was ever thought of, the traveler had found his way and left the cross, the symbol of Christianity. On the top of the highest mountain in the vicinity the wanderer beholds a cross made of boards and erected by Mark Twain (so they say) when he was roughing it.

The creek is full of debris and the wrecks of water wheels, dams and sluices, which too plainly tell the story of the disappointed hopes and withered expectations of him who had washed the sands of the stream and furrowed the hill side. The tall chimneys and decaying mills show evidences of ruined fortunes and misguided enterprises which were fanned into a flame by the reports of fabulous stores of wealth waiting but the hand of capital and labor. Too true is the record they write to be mistaken. You may show elsewhere thrift and life but here, where once life and activity were, the silent wheels stand still, the fire in the furnace has gone out.

The most amusing scene in connection with mountain life is the train of jacks used to reach many of the mines. The jack is a small animal, about the size of a yearling colt—a medium one at that—and is a native of Mexico. He is indispensable. You might as well try to get along without a baby in the house as to think of getting along without the jack in the mountains. In color he is Maltese—bony-eared, short-tailed and kind. These animals are driven in squads, like sheep,

when in the valley and in trains when passing up and down the mountains. One man usually attends to about twenty-five or thirty. In the morning they come down loaded with ore from the mines and carry back provisions, lumber, stoves etc. A cooking stove is dissected and strapped on one; two sixteen-foot boards are lashed to the sides of another, with one end rounded off and the other projecting forward six or eight feet; a third has two fifty-pound sacks of flour to manage—one on each side—while the fourth staggers under two quarters of beef and the rest are burdened with groceries, potatoes, dry-goods, picks, shovels and a general assortment of everything used in mining or about a mine. Thus armed and equipped, we are ready to start up the mountain paths, which are little narrow roads leading around and around the sides, steep and many times quite dangerous; but the slow, sure-footed jack travels them with ease and safety. The ore which is brought down by these jacks is broken up and put into little bags, each bag containing about sixty pounds of ore, thus giving them one hundred and sixty pounds to descend with.

The climate is similar to our own, subject to extremes of heat and cold. Storms which do the most injury generally come during the months of November and December. The snow falls principally in October, March and April. It does not long remain on the ground except on the ranges where snow is found the year round. The rain in the spring is abundant, then a long, dry season follows. The winds are heavy and in the mountains quite frequent. The valleys form a suction through which the winds sweep. The storms are blasts for a few moments and then it becomes calm and quiet, not a flutter of anything. The clouds are gone and it seems as though a pleasant time was in store when suddenly the clouds are black and angry looking and the wind rages. Sun shine is here he natural state. No fogs and mists, not close, muggy weather to depress and weary. The clear sky is seldom shadowed by clouds, yet when the atmosphere is heavy they silently float around below the mountains. The atmosphere is free from noxious gases, pure and health giving, bracing and invigorating. The many advantages and pure, healthful climate have drawn the invalids from everywhere. It is said that one-third of the population is composed of re-organized and re-constructed invalids. Denver to a stranger, is a hospital filled with patients, dead and dying with consumption, asthma, bronchitis. Among the many good things found here, bread made from Colorado wheat ranks high. You are always sure of good bread and pure water, clear weather and fine scenery.

MACK.

Design.

Much is written now-a-days to prove that there is no mind in matter. When we look around us upon the works of nature, see the myriad forms, shapes of plants and flowers, when we study their habits and peculiarities, can we not see traces of design, can it be the work of blind forces only. "Even though the theory of Darwin should turn out to be true in all its main principles, as it is certainly true in some of its principles, there would," says Dr. McCosh, "still be traces of design everywhere in nature," and on no other

ground can such peculiarities be explained. My object is to point out some conditions which seem to clearly indicate a design.

1st. The sleep of plants and flowers.

(a) Many have noticed how the Sensitive plant closes its leaflets as night approaches, and more especially when touched or jarred it will quickly assume its sleeping position. The same is true of the Honey Locust and Wood Sorrel, only the movement is not so quick.

(b) There is something beautiful in the sleep of flowers. I do not mean that long sleep when the earth is frozen and covered with its mantle of white, but the closing of the petals of flowers in summer time, even in very fine weather, different varieties closing them at different times. The Portulacca opens its petals about sunrise and the borders of the beds are soon brilliant with blossoms, and by nine o'clock you can scarcely find one flower open. The Dandelion, Morning Glory, Daisy, Four O'Clock are very familiar examples. Some sleep during showers also. Some of us know that within the deep recesses of most flowers are concealed small drops of honey dew or nectar, of which the bees are ever ready to rob the flowers, and not only bees, but even human beings enjoy the same pillage. How delightful to pluck the long spurs of the Columbine and suck its sweet nectar, and of the Hollyhock, and then chew the delicious heart of the flower. The closing of the petals of flowers may have reference to insects, since it saves the pollen and nectar until the flower has been fertilized.

Is there no design in this.

2d. Fertilization.

The organs of fertilization are very familiar to all, so it will not be necessary for me to define them. In most flowers their arrangement is so simple that their object is very easily accomplished, the stamens approach gradually the stigma at the proper season, then anthers open, discharging some pollen grain upon the stigma. In others the stamens are hung pendant over the stigma, so that the least jar from wind or insect causes a shower of pollen to fall upon the stigma, while in others a design is very manifest. For instance the stamens of the Barberry are so constructed that, when touched at the base on the inner side with a pin or an insect seeking honey, they make a sudden jerk forward, something like a Jack, coming out of his box, and in the process some pollen is thrown upon the stigma. There is another instance so much to the point, given by Prof. Tyndall in his late address that I have copied it in full. "A bucket with an aperture serving as a spout is found in an Orchid. Bees visiting the flower, in eager search after material for their combs they push each other into the bucket, the drenched ones escaping from their involuntary bath by the spout. Here they rub their backs against the viscid stigma of the flower and obtain glue, then against the pollen masses which are thus stuck to the back of the bee and carried away. Where the bee thus provided, flies to another flower or the same flower a second time, and is pushed by his comrades into the bucket and then crawls out by the passage, the pollen masses upon its back necessarily come first into contact with the viscid stigma, which takes up the pollen," thus is the orchid fertilized.

3rd. The peculiar arrangement of cells in the leaves of plants.