THE BAMBOO.

One of the most beautiful features of the Eastern landscape is the graceful and feathery bamboo. Few persons who have not seen it growing in its native clime can get a proper idea of its grace and beauty. A road lined with them and their feathery sprays drooping above presents one of the most beautiful avenues possible to have in a warm climate.

But not from its peculiar form and as an ornament alone is it an object of interest. It is one of the most useful plants found in the world, and the Hindoos say "blessings on the bamboo." in view of its many and important uses.

A single root of this plant will develop into a large grove, if care be taken to cut down the older stems and not let them go to seed, for as soon as they have perfected their seed they die down to the root like other grasses. It has been known to shoot up twenty feet in hight in six weeks, and measure ten inches around. Mr. Fortune records the observation of a growth of from 2 to 2½ feet per day. The stalks usually attain the hight of 50 feet, and in the Indian islands often reach 70 feet and upwards, with a diameter of 10 or 12 inches at the bottom.

There are a large number of varieties distinguished by the size, color of the leaf, etc. One has a variegated leaf like the striped grass, and is quite ornamental. The color of the stem is generally yellow; but the Chinese and Japanese possess the art of changing this to black chestnut, etc. The black varieties are cultivated in the gardens of the rich; and the Emperor is said to have an officer whose sole duty is to attend to the bamboos.

The shoots come out of the ground nearly full sized; and the larger varieties, 4 to 6 inches in diameter. They are cut in this young state and eaten as asparagus, pickled, preserved as sweetmeats, and boiled or stewed. When grown there is almost no end to the purposes which it is made to serve. The roots are carved into a great variety of images, and furnish the fine jointed walking canes, lantern handles, and umbrella sticks. "The tapering culms" (says the Hon. S. Wells Williams) "are used for all purposes that poles can be applied to in carrying, propelling, supporting, and measuring, for which their light, elastic, tubular structure, guarded by a coat of silicious skin, and strengthened by a thick septum at each joint, most admirably fits them. The pillars and props of houses, the framework of awnings, the ribs of mat-sails, and the shafts of rakes, are each furnished by these culms. So, also, are fences and all kinds of frames, coops, and cages, the wattles of abattis, and the ribs of umbrellas and fans. The leaves are sewed into rain-cloaks for farmers and sailors, and thatches for covering their huts and boats, pasted into linings for tea-boxes, plaited into immense umbrellas to screen the huckster and his stall from the sun and rain, or into coverings for theaters and sheds.

The wood, cut into splints of proper sizes and forms, is woven into baskets of every shape and fancy, sewed into window-curtains and door-screens, plaited into awnings and coverings for tea-chests or sugar-cones and twisted into cables. The shavings and curled threads aid softer things in stuffing pillows; while other parts supply the bed for sleeping, the chopsticks for eating, the pipe for smoking, and the broom for sweeping. The mattress to lie upon, the chair to sit upon, the table to eat on, the food to eat, and the fuel to cook it with, are also derivable from bamboo. The master makes his ferule from it, the carpenter his foot-measure, the farmer his water-pipes, irrigating-wheels, and straw-rakes, the grocer his gill and pint cups, and the mandarin his dreaded instrument of punishment. The paper to write on, the book to study from, the pencil to write with, the cup to hold the pencils, and the covering of the lattice-window instead of glass, are all indebted to this grass in their manufacture. The shaft of the soldier's spear, and oftentimes the spear altogether; the plectrum for playing the lute, the reed in the native organ, the skewer to fasten the hair, the hat to screen the head, the bucket to draw the water, and the easy-chair to lounge on, besides bird-cages, crab-nets, fishing-poles, sumpitans or shooting tubes, flutes, fifes, etc., etc., are among the things furnished from this plant, whose beauty when growing is commensurate to its usefulness when cut down. A score or two of bamboo-poles for joists and rafters, 50 fathoms of rattan ropes, with plenty of palm leaves and bamboo matting for roof and sides, supply material for a common dwelling. Its cost is about five dollars. The decks, masts, yards, and framework of the mat-sails of the small boats of the islanders in the archipelago are all more or less made of this useful plant. Throughout the south of Asia it enters into the daily life of the people in their domestic economy more than anything else, or than any other one thing does in any part of the world. The Japanese supply us with fans neatly formed, ribs and handle, from a single branch of bamboo, and covered with paper made from mulberry bark, and their skill is shown also in the exquisite covering of fine bamboo threads woven around cups and saucers."

In Burmah the bamboo is so extensively used that large cities are composed almost entirely of it.

The planting generally takes place in the spring or autumn, and requires very little care. It is always propagated by suckers, which are deposited in pits 18 inches or two feet deep. The culture varies according to the soil, exposure and variety of the plant. It generally grows in a sandy or alluvial soil, which the roots can easily penetrate. According to the vigor of the young root the shoots will be more or less numerous. They are destroyed at an early age during three successive years, and those springing in the fourth resemble the parent stem. It requires 30 years or more to reach the blossoming period, when the plant produces a profuse quantity of seed.

It is quite certain that this valuable plant could be successfully grown in many parts of our country. It is found in abundance at Yokohama and Yedo, where snow falls a foot deep and ice forms an inch and one-half thick. The introduction of this plant furnishes a most laudable field for enterprise, and which will undoubtedly meet with a due reward—*Pacific Rural Press.*

MILK IN THUNDERSTORMS.—In Erzgebirge, in Saxony, where the cold water system is carried out in large dairies, an apparently effectual plan has been hit upon for preventing the milk "turning" suddenly in tempestuous weather. A thin iron wire chain is passed through the milk-pans, the ends of which are kept constantly in the cold water. Dr. Fleischman, of Baden, testifies to the practicability of this method, for, he observes, authorities on the subject maintain that milk is less sensitive to the electricity of the air than to the temperature that surrounds it more immediately. The fact that milk kept in enamelled or tinned vessels is less liable to turn sour in hot weather speaks well for this new theory.

AN IMMENSE LOCOMOTIVE.—An immense locomotive has recently been built at Philadelphia for the Mexican and Southern Pacific railroad. The engine weighs within a fraction of 90 tons, has 8 driving wheels, and a pony (two-wheel) truck. The weight is so great that the Western railroads, over which it must pass, will not permit it to go over bridges, so it will be taken to pieces and carried over in sections. It passed over all the bridges of the Pennsylvania road without being dismantled.

SENATOR ANTHONY, of Rhode Island, sent to Senator Eaton, of Hartford, a turkey weighing 25 pounds. Whereupon the former State rose four inches out of the sea.—*Graphic.*

BIOPLASM.

Among the recent discoveries in science, none perhaps will prove of more utility to man than those relating to bioplasm, because they throw light on physiological questions, particularly those concerning the construction and nutrition of the body and the causes of disease. It was formerly supposed that our bodies were alive from top to toe, inside and out; but this is found to be a mistake. Only about one-fifth part is alive; the rest is formed material. Everybody knows that a tree may become so hollow that only a shell is left; yet the tree may grow and mature buds and leaves and fruit. It is because the outside of the tree—the bark—is alive; the wood is non-living; it is simply formed material. Now the body is not like the tree—alive only on the outside; but theliving portion and the formed material exist together in every part—in every tissue, organ and vessel.

A slight abrasion of the cuticle, or the rupture of a cell, is followed by particles of fluid which were formerly overlooked as of no account. But the microscope has revealed to us that this apparently useless, insignificant ooze is the vital, living part of the body; it is *bioplasm.*

This is the mechanic, the skilled artist, that constructs the cells, builds the organs, and perhaps, under the direction of a higher power, adapts each part to one harmonious whole.

For the last 15 years, certain English and German physiologists have spent much time with the microscope, watching this little workman. They have seen it forming tissue, muscle and nerve, changing food into blood, making the secretions; and, as parts of the body became worn and effete, silently disintegrating and utilizing them, or removing the useless parts from the body.

The first decided knowledge of bioplasm came by accident (if finding a thing we are searching for can be called accident; is it not rather revelation?), by ascertaining that when a piece of live tissue is immersed in a solution of carmine the bioplasm is stained, and the formed material is not stained. This discovery has enabled observers to find and watch this little workman, while busy in constructing every part of the body.

Bioplasm is the builder not only of the body, but of all animals and plants. To it every organized form, whether animal or vegetable, owes its formation and growth.

Bioplasm is a clear, colorless fluid, like thin mucus. Only microscopes of the highest power are of use in studying the substance; for the largest normal masses are not one-thousandth of an inch in diameter; but such microscopes fail to detect in it the least sign of organization. Yet this apparently unorganized substance is the cause of all organization. It is a medium through which dead inorganic matter becomes living, organized.—*Journal of Chemistry.*

COMPRESSING THE BULK OF FLOUR.—A French chemist some few years ago conceived the idea that it would be practicable to compress flour so as to diminish the bulk and yet not injure its quality. An experiment was accordingly made. Flour subjected to a hydraulic pressure of 360 tons was reduced in volume more than 24%. On close examination it was found to possess all the qualities it had, previously to its violent treatment. It was then put into zinc boxes and sealed up. At the same time other flour manufactured from the same wheat, but not compressed, was sealed up. About three months after several, boxes containing both kinds of flour were opened and examined. The pressed was pronounced to be the best. Twelve months after this, another examination took place, and with the same result. The two kinds were kneaded into loaves and baked. The pressed flour made the best bread. In another year the boxes were opened and examined, and while the loose flour showed moldiness, the pressed was sweet, and retained all its qualities. Made into bread the same difference was observable.