COTTON,
IN THE COAST AND UPLAND FIELDS OF SOUTH CAROLINA.
BY JENNIE HASKELL.

More than 1,800 years ago, it is recorded as a singular fact that an emperor, who rejoiced in the name of Ou-ti, wore, upon the occasion of his accession to the throne of China, a cotton robe! And after old Ou-ti and his rare and royal robes had moldered in the dust for many years, the cotton-plant still bloomed along the straight paths of quaint old Chinese gardens, and long-eyed lovers, in their amorous lays, linked with their praises of their mistresses fond imaginings of the cotton-flower.

In India, even now, about the temple walls are seen luxuriant dark-green leaves, sheltering purple blossoms, which no un consecrated hand may gather; for when the sacred pods are ripe, the Brahman spin their contents into that tripartite thread which is the emblem of their Trinity.

But it is not of the cotton Ou-ti wore, nor of those sacred purple blossoms, that we have a tale to tell; but of that cotton which, about a century ago, began to whiten the coasts and uplands of the sunny Southern States—of that cotton which is quoted in the daily papers—which is packed and marked and shipped here day by day. Possibly these operations may not suggest such mystical images to the mind as of old Ou-ti on his throne, or the great Brahman spinning holy thread; still, ere the cotton has been crushed by black machinery, while it unfolds its pale and golden blossoms, and sets free its snowy burden under tender skies, one may imagine a glamour about it yet, though not so fantastic as that which the Chinese poets wove.

The cotton of the Southern States is of two kinds—the Barbadosian, generally known as the "Sea Island," or long-staple, which whitens our coasts and the low-lying islands that skirt them; and the "hirsute," or short-staple, growing in the middle and upper country. The latter has a green seed, more or less covered with a distinct clothing of hairs, and bears large pods of white cotton, with short staple and coarse fibre.

The cotton-plant saves his seed with the utmost solicitude, selecting from the finest and most prolific plants in his field (often from a single plant only, of fine fibre and large pod), seeds which he sows in his garden, and on which he lavishes the tenderest care. The pods of these, when ripe, he opens, and compares the staple with well-known standard varieties, and weighs it before and after removing the seed.

The preparations for planting upland cotton begin in February. Land is laid off into rows from three to four feet apart (according to its quality), then ridged up by throwing two furrows of a turning-plow together. A trench is then made in the ridge thus formed by a small shovel-plow, and in this the seed is sown. The sowers are followed by a man and a mule, with a "board" which lightly covers the seed with earth.

It is now the month of April, and the planting continues till about the middle of May, according to the locality and convenience of the planter.

When the cotton is up and growing well, cultivation begins by throwing earth to it with a "cotton sweep"; and the space between the rows is plowed up and thoroughly pulverized, and the "weeping" repeated. As soon as the plants have strengthened sufficiently, they are cut out "to a stand" by a small hoe, so that the space between them shall measure from eight to eighteen inches according to the quality of the land, and opinions of planters. The hoe performs a double duty, for it cuts out also the fine grass which has sprung up about the young plants.

Plowing and hoeing now continue as rapidly as possible—considering that ten days, at least, must elapse between each operation—until the cotton shades the land sufficiently to protect itself against the growth of grass, and until the plow injures the plant by breaking branches. The cotton is now said to be "laid by," and during the warm days of June unfolds its white or faintly primrose-tinted blossoms, which are soon followed by the bolls.

Thus it continues to bear and bloom till frost, unless injured by too much rain, or the ravages of insects. Now the hard and somewhat triangular pods begin to burst, and through the dark-green rind one sees small peeps of snow.

The fields are filled with busy laborers, who, with deft fingers, draw from the bolls their precious contents, and bear, at close of day, their gathered burdens to be weighed.

After weighing, the cotton is spread out to be dried and sunned, then it is "ginned," that is, the soft white lint is separated from the seeds, to which it closely adheres. This is done by means of a machine called the "saw gin," invented in 1792 by Eli Whitney, and used, with but slight modifications, ever since. This machine consists of a series of saws, turning between the interstices of an iron bed upon which the cotton is laid. As these saws revolve the lint becomes entangled in them, and is drawn through the interstices, and swept off by a revolving cylindrical brush, while the seeds, being prevented by their size from passing, fall out at the bottom of the receiver.

The "cleaned," or "ginned," cotton is now "packed" or "pressed," chiefly by hydraulic power, into bales, and is ready for market.

After the ginning process, there remains of the bulk, as gathered from the tree, one-third of clean cotton fit for manufacturing purposes, and two-thirds of seed.

This seed (at least, all not saved for sowing), goes to the cotton-seed-oil factories, to be pressed for oil, which is converted into cake for feeding stock, or into a material for making paper, and is also used by the sugar-planters as a fertilizer. Before being expressed the seed is linted and hulled, the lint being sold to the white-paper factories, and the hulls used for fuel and fertilizers. Nor does the utility of this wonderful plant cease here. Even the stalks are of value, being used for thatch and baskets, and containing a fibre which may be converted into grubby and other cloths, said to be equal to those manufactured from jute. This fibre is also used for the commoner sorts of paper.

The beautiful long-staple or black-seeded cotton, which has, on our islands and coasts, attained, of late, a wonderful degree of perfection, is an entirely different plant from that described above. It grows to a considerable height, and during the Summer days uncloses yellow blossoms, and bears pods of creamy cotton, whose fibre is long and silky and of great strength. The present varieties planted are the result of long years of patient care and selection on the part of the Sea Island planter, and even distant Egypt is indebted to our little State for seed, as the long staple of that country degenerates with great rapidity. It is essential that the planter should be ever on the watch to make new selections year by year, for the staple shows a constant tendency to produce a fibre less fine and long. This "art" of selection has, in the last-few years, been brought to an almost exact science, and the results are astonishing. No longer does the planter watch with a depressing feeling of mortality for the caterpillar and cotton-boring years, of which superstition predicted the
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return, each seven or fourteen seasons. Master of the situation, he applies to the one the fatal "Paris green," and to the other the dearly-bought experience of many weary years, with a success he scarcely dares anticipate. For instance, the former average yield of 100 pounds of lint cotton per acre, has been, by persistent effort and clearer insight, raised to a certainty of 200, a probability of 300, and a possibility of 400 pounds and over. Indeed, an experiment lately tried on one of the islands on our coast has resulted in the astonishing yield of 2,140 pounds of seed-cotton, which ginned out 566 pounds of lint—

nearly two bales—the largest quantity of Sea Island cotton ever raised upon one acre of land.

It is worth a journey across our fair little harbor to where, yonder, there lies along the horizon that line of soft dark-green, only to inspect a Sea Island cotton-field. That line is one of our islands; in fact—once a little kingdom in itself—having, as king,

the kindly, chivalrous, but perhaps too luxurious, planter; and, as subjects, a host of ignorant, happy, faithful slaves—and now awaking from its long sleep of degradation and despair, to a brighter reign of peace and hope than it has ever known before. The king—no longer lapped in purple indolence—works shoulder to shoulder with those who once were slaves, forgiving and forgiven of past wrongs, a man among men, wise with the wisdom of experience, and glad with the exceeding joyfulness of hope!

The beach stretches, yellow in the moonlight, scattered with curious shells, with here and there a splotch of moist and tangled seaweed; but beyond, and past the great live oaks, with their vails of tender gray, past the tall melancholy pines, and past some ruins tinged with deeper paths, lie the cotton-fields.

The tall plants, burdened at once with bud and blossom, ripe boll and empty hull,
grow in rows about five feet apart, with a distance of about three feet between each plant. The ridges are high, and the land well drained, and enriched with various fertilizers, in which salt mud and marsh-grass enter largely, and phosphates and lime from the marl-beds and phosphate deposits of South Carolina.

Thus, close to the planter's hand lies all that he may need, for God has richly blessed this little State. Can we not bear the ills that are of man's devising, when, for our comforting, great Nature pours forth at our feet her riches and most lovely treasures?

With a climate the temperance of which rivals that of any country in the world; with a soil whose resources,
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though already marvelous, have not been yet half known, or half appreciated; with a vast and bitter experience (a possession none will deprive her of); with wisdom and prudence controlling her active brain, and peace and hope irradiating her tender heart—who shall dare say that South Carolina shall not be, say, and already is, queen among nations, blessed by God and loved by man?

But, from Carolinas, back to her great hope and pride—

Sea Island Cotton.

The seed of these plants was sown in March, April or May, and treated in a method similar to that pursued in the culture of upland cotton. They bloomed in June, and continue, as we see them now, blossoming and bearing through the long Summer months, and into the gentle Full season; and, indeed, if let alone, they would continue to bud and bloom and ripen year by year—yielding, however, a fibre becoming constantly more coarse and short.

We can almost understand, standing here under blue and drooping skies, amid this widespread forest of tall, golden-blossomed plants, how, in those ancient days, the old old Chinese poets could have been inspired by the cotton-flower. Yes, though it is this century of perfect common sense—this day of work, not dreams—something very like that long-banished, scorned and frightened Sprite of Poesy eyes us wistfully from yonder orange-grove, fans with its quivering wings the golden air, and cries to us with a very piteous, tender, thrilling cry from out that heap of blackened stones!

Talk as you will of these "uncivilized" and "barbarous" islands of ours, they are rich and fair and wonderful, for all that you may say—rich in past gorgeous memories, and fair with present beauty, and wonderful with the illimitable possibilities their future shadows forth.

The cotton gathered from these island fields has far more tender treatment than that bestowed upon its sister of the interior. Of finer and more silky fibre, and having a money value three, four and even five times as great, it is readily understood that such should be the case. As this fibre was found to be injured by the action of the saws, and to be more or less "cut" or "nepped," a more recent invention, the "McCarthy gin," has come into use for cleaning Sea Island, Egyptian and Brazilian cotton. In this machine, the fibre is drawn by a leather roller between a metal plate called the "doctor," fixed tangential to the roller, and a blade called the "beater," which moves up and down in a plane immediately behind, and parallel to, the fixed plate. As the cotton is drawn through by the roller, the seeds are forced out by the action of the movable blade, which, in some machines, is made to work horizontally instead of vertically. Of course, the great object is to obtain a machine which shall clean the largest amount of cotton in the shortest time—that is, unless the process injures the fibre, and thus diminishes the market value of the staple. This has sometimes been done to the extent of two to four cents per pound, or even more.

The "needle-saw gin" is a still more recent invention intended to preserve the original beauty and strength of the fibre. It consists of steel wires set in block tin, with the bottom of the teeth rounded smoothly.

The rivals of this needle-saw gin are the double-action McCarthy gin, with two movable blades or beaters; the "knife-roller" gin, the "lockjaw" gin, and others. Indeed, as have been the efforts toward perfection in cotton-cleaning machinery, and encouraging as has been the success, there yet remains a wide field for improvement.

Latest of all the inventions which, from time to time, have testified to the amount of thought and energy expended upon the great staple of our Southern country, is the "Clement attachment," which, it is claimed, is destined to turn back into its ancient channels, with added volume, the wealth cut off by the shock of civil war.

"The Clement attachment"—I quote from an interesting description lately published—"is a small cotton-gin used by the yarn manufacturer in connection with the flat cotton-card for converting seed-cotton directly into sliver. It differs from the plantation gin in the following, viz.: The saws are smaller and are set closer together on the saw-shaft, the teeth of the saws are finer, the brush is smaller and more thickly set with bristles. The saws and brush both run much slower, and the brush runs but little faster than the saws. It also has a peculiar motor, or set of combining plates, which remove the motes and trash from the lint as it is taken from the seed. The seed-cotton is cleaned of all dust, grit, and much leaf trash and motes, before it is passed to the attachment, by a small and inexpensive machine called the 'cotton-cleaner.' It occupies a space of only forty by forty by forty-eight inches. The size of the gin is regulated by the size of the card with which it is to be connected. The extreme dimensions of a gin for a thirty-six-inch card are eighteen by eighty by fifty-six inches. It is framed to fit the frame of a card, in place of theicker-in and lap-roll, as used in the old method, which entitles it to the appellation 'attachment.' The Clement attachment, therefore, is simply the plantation, or Whitney, gin, so modified and improved by Clement and others that it works in direct connection with the manufacturer's card. It gently removes the lint from the seed without breaking or "nepping" it, and transfers it to the card-cylinder by means of a slow brush, without tangling, in exact proportion to the capacity or requirements of the card—no condensing, no lapping. It at once dispenses with all opening or lapping machinery, and forms a new process of manufacturing, whereby seed-cotton is made directly into sliver. The sliver is then made into yarn by the usual method."

If this machine prove capable of all claimed for it, then, indeed, will it revolutionize the cotton trade, and the ten States constituting the "Cotton Belt" will be richly rewarded for their patient and long-continued efforts after recuperation. Should it come into general use, many of the machines hitherto deemed essential will be entirely dispensed with. Those used to render the cotton portable, such as the "press" and "compress," will be no longer needed, for the fibre will be spun fresh from the plant, and thus the preliminary operations of yarning, intended to loosen out the fibre from its tightly-packed condition, will be also unnecessary.

Besides the saving in expensive machinery (no unimportant item), the yarn produced by the new process is said to be stronger and better in every way than that formerly obtained. The reason of this is plain, for, being spun directly from the seed—not from the life-creating bale—the oil, furnished by nature for that purpose, has kept it flexible and fresh and strong, till ready for use. But it is not only because of its local value that the Clement attachment is viewed with such expectation and hope. Great, indeed, will be the result, as regards our impoverished States, should it, as claimed, double the proceeds of his crop to the planter; but greater still will be its value when it is proved that it will add to the wealth of the world two cents on every pound of cotton sold, by saving waste, expenditure, and damage in various ways, besides preserving to the fibre its original purity and strength.

A glorious era seems about to dawn, in this year of 1880 for our cotton-planters. Before us spread harvests of gold.
We see, in every field, the staple gathered, cleaned, spun, with a simplicity that means—perfection!

The pathetic ruins are still unforgotten—not "restored," for that means often but an added desolation—but by their side springs up a home of peace and plenty.

Neat tenements replace the patched remnants of the former "negro quarter." Free laborers work with an energy born of intelligence, and reap a rich reward. The generous-hearted planter's hands are filled again with bounty to bestow. All the beauty and comfort, material and intellectual, that gold can procure, gather and grow about the island home. The bitterness of poverty, the agony of fruitless toil, have passed away for ever, and God is thanked and blessed, in the aspirations of filled hearts, who know what hunger means.

"And now for the packing!"

The words startle our dreams away. We draw a long breath and look about us.

Ah, not yet. Soon, but not yet! The gold is but the yellow blossoms tinged by the dying sun to deeper lustre, and perhaps the glint of that fruit-laden orange-grove that fronts us. The boughs droop to earth with their clustered burden, and among them lie, still lonely, those pathetic ruins.

"Packing?"

"Yes. Sea Island cotton is not packed by screw.

"Hand packing is all that is allowable."

So we leave the cotton-field, and passing the building which shelters the fiery little engine, panting and laboring as it works the McCarthy gin, we enter on a busy scene.

There is a great clatter about us. Some women are seated to one side of the big bare room, flat on the floor, with their feet stretched out straight before them, and very wide apart. Their laps are filled with cotton. Cotton, too, is spread on the floor in a great layer, all about them. In this their hands are constantly diving.

"What are you doing?" we ask, with great curiosity, of one old soul, whose striped bandana stands awry. She looks up with a grin that seems to pervade her whole shining face, and nods.

"Wha-a-t—are—you-do-ing?" we scream through an impromptu trumpet, formed of our hands.

"Wha-a-a-dat?" in a tone utterly indescribable, a cross between a drawl and a jerk.

"What—are—you-doing?" once more, the last word rising in a despairing crescendo.

The old darkey points from one side to the other with an inimitable gesture of her quick black hands.

"Do galler!" she explains, in a great shout—"de galler from de w'ite!"

Then we understand that she is separating the cotton that is slightly tinged from that more purely white, before packing.

"And the packing, as ordinarily performed, the cat gives a very good idea. Huge bags are suspended from holes in the floor, and into these the cotton is thrown, and trodden down until full. Sometimes, however, a simple contrivance is used, by which a weight is let down upon it by hand, which presses it with less labor than the other method, yet not sufficiently to injure the fibre, which screw-pressing would, undoubtedly.

From the packing-room the cotton is taken to the landing-place, and there shipped, with all the noise and bustle, the shouts, the songs, the unceasing jokes (the inimitable humor of which none but those perfectly familiar with the negro dialect and peculiarities can conceive or appreciate), to the nearest town.

And so we, too, must leave the island plantations, with the light of the afternoon sun still lying athwart the silver beach. The salt ocean murmurs, on the further shore, its majestic monotony; the pines strike, on a somewhat higher key, their accordant minor sounds. Light lies over all—the strange, fantastic Southern sunset. It makes the moss-valled oaks seem like a crayon-sketch of ice-hung trees. It glows and quivers about the scented orange-groves, and lies like a benediction on the quiet fields.

Nor does it disdain to caress the quaint and uncomely group about the landing-place: great, strong-limbed, dark-faced men, with sinews of oak, clad in patched suits of every hue and cut, with woolly heads—as hard as "nether millstones"—some bare, and some adorned with coverings which make us wonder (as we do in seeing Jefferson's Rip Van Winkle) whether the hat or the head possesses the mysterious power of cohesion that keeps them from parting company; women with gay handkerchiefs and bunched-up skirts; women whose gleaming eyes and teeth and beads, whose free-hung drapedees and rich, dark hues render them pictures, in spite of themselves; and little, perpetual-motion imps, wise, witch-faced children, old before their time, yet gifted with that true light-heartedness which is as much as a peculiarity of the race as is their woolly hair or dark-hued skin.

As the cars plash down into the shining water, a swinging chant breaks forth from our oarsmen, rich and loud and full as an organ's swell. Back from the shore an answering echo, note by note, comes sounding, wildly sweet. Against the pearly sky, with its border tints of gold and rose and faint sea-green, clearly defined, we see the figures on the beach, dancing and shouting: a madly merry crowd, swayed to and fro by the half-savage enthusiasm their own untutored melodies inspire. Happy they are, and happier may they grow, under a strong and wise and kindly government.

Deeper and stronger swells our oarsmen's chant, fainter and sweeter comes the echo from the shore. Pale grows the gold of the rich sunset sky. It fades into a tender, reflected glow, and almost before we know it has gone—why, there! behind us, it has come back in a lovely moon!

There is no dark, but the sunlight has melted softly into moonlight, and as we drift silently into the shadowy dock—for the song of the oarsmen has ceased with the beat of the oars—we may almost imagine that this is the Queen of the Adriatic rising before us!

The glamer of the moonlight transforms the dingy wharf to a wonderful, carven, air-lung pier; the distant spires are silver-tipped; the lights gleam out like stars. There are stars everywhere. Stars sparkle in the water; phosphorus and moonlight tip the oars with shimmering stars that come and go; and stars have leapt forth, quivering, to attend the Lady Moon in her soft wanderings.

The cotton brought from the islands is stored in warehouses on the wharves, and marked, usually, with the name of the plantation on which it was grown. There a sample is drawn, by which the factor sells the bale. Upland, or Short Staple, cotton is generally marked with the initials of the planter, and is of eight grades of excellence, known in the cotton market as: "Stained," "Tinged," "Ordinary," "Good Ordinary," "Low Middling," "Middling," "Good Middling," "Fancy"—the names somewhat indicating the quality. "Stained" and "Tinged" indicate cotton injured by frost, the first very much, and the latter more slightly damaged. The remaining grades range from these solled by a commingling of dust, leaves, trash, etc.,
COTTON PRESS (SHORT STAPLE).
to the "Fancy," which is the finest of all, and perfectly clean. From the wharves the cotton is shipped to its various destinations.

Toward the close of the eighteenth century the quantity of cotton shipped from the United States amounted to but 188,324 pounds, but by the year 1800 it had increased to 18,000,000 lbs. When the war of 1812—which interrupted for a time this increase of the cotton trade—closed in 1815, there was an increased demand, until about twenty-five per cent. of the raw material used by English manufacturers was derived from America alone. In 1860 the exportation, which had at first been so insignificant, had reached the enormous extent of 4,824,000 bales!

Then came the great convulsion, known as the war between the States. The widespread cotton-fields and rice-fields were deserted. Fired with love of country, the planter left his home to gird on the accouterments of war. Brother fought against brother, and lately sunny fields ran
red with blood. The patriarchal system no longer held sway in rich plantation homes—but the slave, intoxicated with the triumph of his sudden freedom, ravaged the scenes so late his care and pride. Thus was the supply, apparently abundant and secure, cut off, and thousands deprived of employment and the means of subsistence. Then was a great meeting held of representatives of almost all the cotton-growing countries of the world. A great stimulus was given to the growth of cotton in every direction, and hitherto inert energies awakened. India, Egypt, Turkey, Greece, Italy, New South Wales, Queensland, Peru, Brazil—wherever, in fact, the staple could be produced—increased their activities, and in a short time it seemed probable that not only would the cotton supply of the Southern States be replaced, but that, should they ever again enter the field of competition, they would find themselves completely distanced. Black, indeed, seemed the future to those among us who ventured to look forward. There seemed no place left for the ruined South among the great nations of the world.

But the years sped by, and when, in 1872, an exhibition specially devoted to cotton was held, but few, indeed, of the thirty-five countries whose representatives had conven ed ten years before, appeared. Those who did send their samples were met with disappointment and failure. Why? The South had ventured to raise her drooping head, to put forth her maimed and weary hands—hope animated her heart again—America had entered the field of competition, in fact, and bid defiance to the world!

Long may the Southern fields grow white, and bud and blossom and bear under the sunlight of prosperity that lies, like a beneficence, on them now! Still may they add their jewels to the crown their mother wears—as she sits among her sister queens—our own America: younger, stronger, and more beautiful than they!

And long may the joyous cry sound up from sunny inland heights and wave-washed island fields—"Cotton is king! Cotton is king!"

THE DANCING DERVISHES OF CONSTANTINOPLE.

BY MRS. A. B. MULLISH.

CONSTANTINOPLE, just now, is stirred by as ardent a religious sentiment as was formed in Paris after Sedan. The Turk, in being a Turk, does not cease to be a man. Human nature obeys the same laws, whether a people find their scriptures in the Koran or the Bible. What with the Russians within the gates, and the English ships riding menacingly the transparent waters of the Golden Horn, the Turkish believer finds quite as great a need of spiritual comfort as the Parisian Catholic when the Prussians were passing under the Arc de Triomphe. Political disasters and national distress send the troubled heart of the people to the same source of religious relief—the sanctuary—whether that sanctuary be a Christian cathedral, a Jewish synagogue, or a Mussulman's mosque. On all sides are seen evidences of this universal need of a higher than earthly aid. The voice of the muezzin, echoing five times a day through the narrow bazaar-lined streets, is answered by thongs of bowing, bending devotees. The mosques are crowded with kneeling worshipers. The religious observances are kept with strictest reverence, fasts being far more frequent, and almsgiving, of one of the most rigidly enforced of the Mohammedan's creeds, is seen to be universally obeyed.

Just at present Constantinople, in all its phases of life, is a most interesting and entertaining spectacle. But of all the curious and interesting religious customs and observances of these Orientals, none is more deeply fraught with interest to Western eyes than the extraordinary performances of the dancing dervishes.

Many of the other mysteries of the Moslem customs are forbidden to European insight, but the dervishes very generally allow the Western unbeliever to penetrate to the very heart of their tekkes or monasteries, the sole condition being that the boots or shoes be left at the entrance, and the hall of the monastery be not defiled by the print of a Christian leather sole.

The dancing dervishes, or mevlevis, are a kind of Mohammedan monks who live in communities. The word dervish itself signifies "poor," which designation has, however, long since ceased to be applicable, since now these monks are rich and possessed of large estates, which have fattened on the legacies and gifts of the faithful. The interior of one of these monasteries is as strikingly different from the cold, frigid, and oftentimes sepulchral aspect which the European monasteries exhibit, as could well be imagined. On the contrary, these are large, cheerful apartments, gay and brilliant with painted decorations, comfortable divans, fountains and long colonnades, where a view of the beautiful Bosphorus can be enjoyed at any moment. There is no ascetic character, or even hint of monasticism; but, instead, beautiful, comfortable, and even luxurious, accommodations.

In the hall where the religious performance is to take place, one could readily imagine oneself in a ballroom, where a waltz of Strauss was to be danced. There is a gay festival air about the place; the walls are painted in blue and gold; the floor is perfectly polished marble, upon which are seated an orchestra of several musicians, who accompany the dervishes in their wild and extraordinary exercises. These soon appear, defiling slowly before the chief of the community, all saluting him in Eastern fashion, with profound obeisance. They then proceed to recite their prayers, with all the genuflexions, prostrations and grimaces peculiar to the Mussulman ritual.

This part of the service over, they then began a curious procession of march. They walked two by two, passing in front of the superior, who appeared to give them some mysterious kind of benedictory gesture. They kept on repeating, in a nasal monotone, passages from the Koran, to which was now added an accompaniment from the orchestra. The strain played by the flutes and tambourines seemed to produce a wonderful effect upon the marching dervishes. Their faces, at first dull and drowsily depressed, began to brighten; then their bodies swayed to and fro; next their voices rose, and soon throughout the hall there resounded the tramping of more hurried and nervously excited feet.

The music was itself of a wonderful, curious, barbaric character. There was at once a fierce, intoxicating wildness in the strains, while there came notes of such sweetness as almost to draw tears by their expressive tenderness. There was the same distinctly marked cadence and accent that one hears in the negro songs; and involuntarily, one found the body swaying and the head keeping time to these Oriental measures.

Meanwhile, the march of the dervishes has changed to a whirl—for the swift rotary movement of these half-intoxicated fanatics can scarcely be termed a dance. They begin by whirling slowly about, their arms extended horizontally, the eyes partially closed, while upon the lips is a smile, as if some sweet delirium had touched them. And nothing short of a delirium it is. As the waltz increases in speed and rapidity, they seem to lose all control of their own actions, and abandon themselves to a sort of supernatural controlling power. The eye can scarcely follow these madly pirouetting figures, who revolve each
COTTON-PACKING (LONG STAPLE).—SEE PAGE 567.
on his own centre with such rapidity that nothing short of a whirlwind of motion could compete with them. Their garments stand out like a bell, so constant and perfect is their perpetual motion. Every moment the whirl is swifter, the music in a quicker measure, the flood of ecstasy which seems to pervade the waltzers suffusing their faces with a bliss which is apparently ineffable.

The entire body of men—some young, some old—are all possessed by the same mad, fanatical intoxicating impulse. There seems to be no apparent effort, no fatigue, no strain either upon their physical strength or emotional intensity. They keep on whirling, waltzing, pirouetting, the smile on the lips growing more radiant, their faces shedding a kind of supernatural radiance of joy, their tunics spreading like a cloud—no one touching the other, each oblivious of his neighbor—until, finally, human endurance has reached its limitations, and, one after another, the exhausted dervishes drop prostrate on the floor, lying there an inert mass of heaving drapery.

And it is thus that some men seek their God!—that these Oriental monks believe they can possess a foretaste of Mohammed's paradise, and catch a nearer glimpse in their sensuous delirium of the dark-eyed, rosy-lipped hours who wait them in the heaven Allah has promised them.

THE WONDER.

By W. C. BENNETT.

I see a Venus touched by Titian's hand,
Heaven's rarest beauty by his pencil wrought,
And straight my wonder cannot understand
How, love, he so your uniform beauty caught.

I hear an air from sweetest Mozart's brain,
And then I marvel how the master knew
The very sweetness that he could but gain
From the dear tones that murmur, love, from you.

And when did Phidias win the charm, how fair?
That laugh? O goddess, from thy marble face?
O wondrous Greek! my love herself is there,
Witching my eyes with all her living grace.

O fool! why marvel so divinest art,
Even when most perfect, does but rise to her?
She of all perfect forms must form a part,
Or else they less than full perfection were.

THE GREAT WESTERN.

The man to whom England chiefly owes the establishment of her oceanic steam navigation was Isambard Kingdom Brunel. To his original genius, and to the honorable rivalry between him and the younger Stephenson, we are indebted for the broad-gauge railway, and in no small degree for the high speed of the locomotive.

In 1819, an American ship of 500 tons burden, with engines of small power and paddles made to ship and unship, actually made two voyages across the Atlantic. But no serious steps thus to link together the two hemispheres were made until October, 1835, when, at a meeting of the directors of the Great Western Railway, one of the party spoke of the enormous length of the proposed railway from London to Bristol. Mr. Brunel exclaimed, "Why not make it longer, and have a steamboat go from Bristol to New York, and call it the Great Western?"

The suggestion, treated at first as a joke, soon engaged the serious attention of three of the leading members of the board. A tour of the great ship-building ports of the kingdom was made, in order to collect information. In the report of the result of the inquiry, Mr. Brunel inserted a paragraph which laid down the principles on which the success of oceanic steam navigation wholly depends. It was simply this: that the resistance to the passage of vessels through the water increases at a lower rate of progress than their tonnage. At equal speeds, a vessel twice the size of another will encounter four times the resistance. But its capacity of tonnage will be eightfold that of the smaller vessel. By a well-proportioned increase of size, therefore, it is possible to carry enough coal for the consumption of a long voyage, and at the same time to have ample accommodation for passengers and goods.

So true is this principle, that it is now admitted that the economical limit to the size of vessels is imposed rather by the dimensions of ports and harbors than by the exigencies of the shipwright. Speed, also, may be considerably increased by the employment of more powerful engines; the limit to ocean speed being imposed by another physical law, to the effect that the resistance increases as the cubes of the velocity.

The logical soundness of Mr. Brunel's position was impugned by those scientific men of the day who were not engineers. At a crowded meeting of the mechanical section of the British Association at Bristol, in August, 1836, Dr. Lardner declared that a vessel of 1,600 tons, provided with 400 horse-power engines, for a voyage to New York, must carry 1,348 tons of coal, besides the weight of the engines, which he puts at 400 tons. He thought it would be a waste of time, under these circumstances, to say much more to convince them of the inexpediency of attempting a direct voyage to New York.

THE TRAP-DOOR SPIDER.

One of the most singular specimens of insect life is the trap-door spider of Jamaica. His burrow is lined with silk, and closed by a trap-door with a hinge. The door exactly fits the entrance to the burrow, and, when closed, so precisely corresponds with the surrounding earth that it can scarcely be distinguished, even when its position is known. It is a strange sight to see the earth open, a little lid raised, some hairy legs protrude, and gradually the whole form of the spider show itself.

These spiders generally hunt for food by night, and in the daytime they are very shy of opening the door of their domicile, and if the trap be raised from the outside, they run to the spot, hitch the claws of their fore-feet in the lining of the burrow, and so resist with all their might. The strength of the spider is wonderfully great in proportion to its size.

NEW YORK RATS.

It seems that the rodent which infests New York is unusually obnoxious and vicious. He is almost as fierce as a wolf, and acts in combination like wolves. They are cannibals, and eat their own wounded companions; a rat caught in a trap by the leg is often assassinated and killed by his associates; and the foot remaining is supposed to indicate that the animal chewed off its own leg. The male rats outnumber the female. There are really eight or nine male rats to three or four female. It is supposed that the delicate flesh of the female rat tempts her gallants, and by keeping down the number of females they keep down their species, much to the pleasure of mankind. The female rat, which is an affectionate mother, has to fight off the male when he wants to eat his children, which is generally the case.