THE ALBERT STAR.

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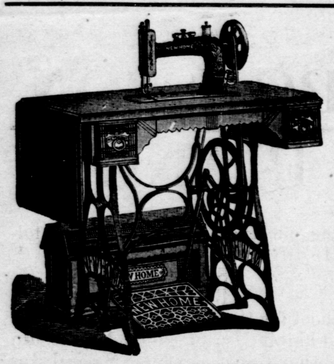

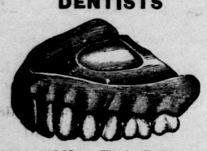

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WEDNESDAY, JULY 11.

Beautiful Things.

Beautiful faces are those that wear—
It matters little if dark or fair—
Whole-souled honesty printed there.

Beautiful eyes are those that show,
Like crystal panes where heart fires glow
Beautiful thoughts that burn below.

Beautiful lips are those whose words
Leap from the heart like songs of birds,
Yet whose utterance prudence girds.

Beautiful hands are those that do
Work that is honest, brave and true,
Moment by moment the long day through.

Beautiful feet are those that go
On kindly ministries to and fro—
Down lowliest ways, if God wills it so.

Beautiful shoulders are those that bear
Ceaseless burdens of homely care
With patient grace and daily prayer.

Beautiful lives are those that bless—
Silent rivers of happiness,
Whose hidden fountains but few may guess.

Old Bill Williams.

Where that old sod shanty is,
Old Bill Williams he lived there,
He got froze to death; that's his
Grave out by the ploughing, where
All the sunflowers are. He came
To this country—I don't know—
From Vermont—and took that claim,
Maybe twenty years ago.

Well, one time the boy an' him
Got caught out, an' I suppose
He wrapped all his clo'es on Jim,
An' laid down with him, an' froze.
That's the way we found 'um—Bill
Dead an' Jim all right—an' so,
Never missed 'm much, but still
Boys felt kind of sorry, though.

A Stage Illusion.

Visitors to the big Midwinter Fair in San Francisco have been able recently to enjoy among the Midway attractions, a very effective illusion, accomplished by the use of a giant mirror set at an angle upon the theatre stage. The illusion is called "The Aerial Lady."

When the curtain rises a comely young woman appears to float into view suddenly from the back of the stage, and remains poised in midair, floating from side to side as if resting before the surface of a lake. After a few minutes her arms and legs go through a number of complicated but graceful gyrations, and her body assumes a variety of postures. She dances, and finally turns a complete somersault in midair. The somersault is executed slowly and puzzles the spectators, for it is readily seen that the body of the performer has no support upon which to turn.

None of the spectators knows that what he is looking at is not the agile woman athlete, but a reflection of her in the giant mirror, which is set at an angle of nearly 45 degrees over an open pit built in the stage, at the bottom of which the performer lies on her back upon a circular revolving platform. The platform is made of thick plate glass and revolving metal castors.

Theory of American Storms.

Professor Colbert explains the origin of great storms that move across our country from the Rocky Mountains to the Atlantic seaboard on this theory:—

The moist air from the Pacific, driven up the west slope of the Rockies by the rotation of the earth, is suddenly deprived of its moisture in the cooler altitude. This drying of the air causes a change in specific gravity, and the disturbance produced at once results in a slight rotary current. The revolving mass of air moves onward toward the east, its motion and size constantly increased by the sucking in of warm south winds on its forward edge. These currents from the South drop their moisture from contact with the colder revolving storm, and the sudden lightening of the air by the dropping of its moisture works like a stream on a mill wheel.

Thus the real causes of our great storms lie in the conditions met by these traveling whirlwinds in their regular journey across the country. If they are cold enough and meet with enough moist, hot air in their course they are set spinning with a velocity that makes a cyclonic storm.

What He Needed Most.

It was at dusk, and I was hungry enough to eat a sandwich. I'm not driven to that verge very often, but trade was bad and receipts had been very slim. I was tramping down the avenue, and I met a benevolent-looking old gent, who looked me all over, and in response to my appeal he gave me a coin, saying: "You have evidently seen hard luck. I can see that you are in need. Here, take this. It will satisfy your most urgent wants." As he pressed his contribution into the palm of my hand visions of roast beef and charlotte russe arose in my feverish brain. I had not possessed a whole half dollar at one time for many days and at a street-lamp I paused, full of expectancy, intoxicated with anticipation. There in the solitude of the quiet street, in the pallid gaslight, shaking with nervous excitement, I opened my hand. Great Jupiter Olympus! It was a bath check!

Colors from Coal Tar.

Coal tar, formerly considered a waste and a regular nuisance to gasworkers, is now utilized as one of the most valuable color producers. Chemists have extracted from it sixteen different shades of blue, the same number of various tints of yellow, twelve of orange, nine of violet, besides numerous other colors, shades and tints. A late magazine writer in summing up an article on "Uses of Coal Tar," says: "The amount of coloring matter stored in coal is so great that one pound of bituminous variety will yield sufficient magenta to cover 500 yards of flannel, aurine for 120 yards, vermillion for 2560 yards and alizarine for 255 yards of turkey red cloth."

CORAL, AND HOW IT IS FORMED.

Interesting Facts About the Varieties That Make Ornaments and Form Islands.

Less frequently now than formerly, but still occasionally, we see as a breastpin a graceful sprig of coral mounted in gold. More frequently we see it used as a necklace, for children, especially Italian children in strings threaded coral beads. Its brilliant color and high polish catch the eye very quickly and with a glance away go the thoughts at a speed far outstripping famed electricity to Mediterranean stores, where the coral came and to those balmy islands of the southern seas which have been raised from ocean's depths by the labor of the red coral's relatives.

The word "coral" is Greek in its origin and signifies "a daughter of the sea." The very name by its poetry indicates the high value which the Greeks must have attached to it. Orpheus speaks of it in his "Hymns." The Romans also held it in high esteem. Ovid alludes to it in his "Metamorphoses," showing the ancient belief that it was soft in the sea and hardened when brought into the air.

The ancients believed it to have valuable medicinal properties, and mysterious virtues. Priests and soothsayers declared that it was acceptable to the gods, and even now among some Eastern nations it is usual to place a few branches of coral in the graves of their dead to protect them from the baleful influence of the evil genii. In Italy at the present day a coral necklace is regarded as a preservative from the "Evil Eye."

Coral "is and has been from remote times very highly prized for jewelry, personal ornamentation, and decorative purposes generally. About the beginning of the Christian era a great trade was carried on in coral between the Mediterranean and India, where it was highly esteemed as a substance endowed with mysterious sacred properties. It is remarked by Pliny that, previous to the existence of the Indian demand, the Gauls were in the habit of using it for the ornamentation of their weapons of war and helmets; but in his day, so great was the Eastern demand, that it was very rarely seen even in the regions which produced it." The button of office worn by Chinese mandarins are generally large spheres of good colored coral. The inhabitants of India and Central Asia prize it next to pearls for personal ornaments, while among the negroes of Central Africa it is the favorite ornament.

What is this coral? Perhaps we had better first answer the general question. What is coral? Speaking generally—coral is a calcareous substance secreted by certain zoophytes, belonging to the class Actinozoa, to form a hard structure of the nature of a skeleton. "Whether this skeleton be continuous or discontinuous, of conspicuous dimensions or simply of miscroscopic spicula, it constitutes what is known properly as the 'coral' or 'corallum,' and the animals which produce it are so-called 'caralligenious zoophytes.'"

The orders which supply the coral-makers are Zoantharia, the Rugosa, and the Alcyonaria. The first of these includes the Madrepores, the Brain Corals and the Fungus Corals. The second order is wholly extinct but supplies many fossils. Third gives us Red Coral, Sea Pens, Sea Shrubs, Organ-pipe Coral, etc.

Members of the first and the third of these three orders are the producers of the coral reefs about which, with the permission of the editor, I will speak in a subsequent paper. The red coral of the Alcyonaria must occupy our attention now because it is the "precious coral" of commerce.

Even in popular papers of this kind it is well to be as accurate as possible in our science and therefore we must give as simple and yet clear idea of the animal as we can.

Coral was thought to be a vegetable production, even down to the last century. Theophrastus (died B. C. 287), Pliny, the Roman philosopher who perished at the destruction of Pompeii, in A. D. 79, and Dioscorides, a great naturalist of the second century of the Christian era, wrote about coral under this supposition and the belief was perpetuated by Tournefort and Reaumur. The Count de Marsigli (1658-1730), an eminent naturalist, crowned this old opinion by discovering the "flowers of coral." He received a branch, fresh from the sea and placed it in sea water. He wrote—"next morning I found my coral sprays completely covered with white flowers, each about a line and a half in length, supported on a white calyx, from which eight rays of the same color issued, these rays being of equal length, and equidistant, and the whole forming a very beautiful star, resembling in color and nearly in size the clove pink.

"It was an achievement to see the coral in bloom, although wrong deductions were drawn. In 1725 Peyssonel, a young French physicial deputed by the Academie des Sciences to study corals in 1723 announced that Marsigli's flowers were animals. He says: "I put the flowers of the coral in vases full of sea water, and I saw what had been taken for a flower of this pretended plant was, in truth, only an animal, like a little sea-nettle or polyp. I had the pleasure of seeing the feet of the creature move about, and having put the vase full of water, which contained the coral in a gentle heat over the fire, all the small animals seemed to expand. The polys extended his feet, and showed what M. de Marsigli and I had taken for the petals of a flower. The calyx of this pretended flower, in short, was the animal, which advanced and issued out of its cell.

"Old beliefs die hard and Peyssonel's discovery was treated with only scant courtesy. Reaumur especially did all he could to oppose the acceptance of Peyssonel's conclusions. He even condescended to irony and wrote to the discoverer thus: "I think as you do, that no one has hitherto been disposed to regard the coral as the work of an animal. We cannot deny that this idea is both new and singular; but the coral, as it appears to me, never could have been constructed by sea nettles or polyps, if we may judge from the manner in which you make them labor." Peyssonel persisted and demonstrated to hundreds at Marseilles the truth of his discovery. Still, acceptance came not. Even that able patriarch of botanical study, Bernard de Jussien, hesitated. Disgusted and harrassed, Peyssonel gave up his investigations, accepted a post as naval surgeon in the Antilles in the West Indies and thus disappeared. His manuscripts are preserved in the library of the Museum of Natural History at Paris, still unpublished.

At length Reaumur and Jessien, led by Trembley's observations on fresh water hydra, conducted similar ones on the sea anemone and a kindred zoophyte. They thus found that the so-called marine plants were really animals and Peyssonel was vindicated, but he was far away in an obscure post in the West Indies. Since that time there has been no hesitation in accepting that fact that the red coral is an animal production.

"Corallium Rubrum," of the family of the gorgons or sea shrubs, the creature which produces the red coral, is a colony, not an individual. While each individual polyp of the colony is free to act in certain directions, "sua spoute," it yet contributes to and derives nourishment from the combined colony called the polyidom. It is a veritable social commonwealth. In it the central hard substance, which we may call the skeleton, is unjointed, more or less branched and densely calcareous. It is of a red, pink, and very rarely a white color, and it is finely grooved on the surface. This calcareous axis is covered with a bright red coenosarcal (common flesh) crust or bark which is studded by the openings for the individual members of the colony. These individual members (polyps) are milk white in color, with eight tentacles edged with fringe and capable of being drawn completely into within the fleshy bark.

The polyps communicate with each other through the coenosarc or common flesh, which is traversed by a system of tubes. "The alimentary fluids elaborated by the polyps pass into the branches of the secondary and irregular network system, in order to reach the great parallel tubes which extend from one extremity of the organism to the other, serving the same purpose to the whole community. When the extremity of a branch of living coral is torn or broken, a white liquid immediately flows from the wound, which mingles with water and presents all the appearance of milk. This is the fluid aliment which has escaped from the vessel containing it, charged with the debris of the organism."

The simplest illustration we can give for such a composite structure is the tree, suggested by the name "arborescent," which is sometimes applied to it. The corallium extending its branches in every direction, bearing upon its central skeleton a multitude of living organisms strongly reminds us of a tree with its branches, leaves and flowers. The analogy is still further carried out by the name applied to its method of reproduction—gemmation, or budding.

There are still some mysteries connected with the reproduction of corals, but the investigations of Mr. Lacaze-Duthiers have gone far to throw light upon it. He says that the polyps of the same colony are in some cases all either male or female and the branch is unisexual; in others they are both male and female and then the branch is bisexual. Again, but very rarely, polyps are found uniting both sexes.

"The coral is irriparous; that is to say, its eggs become embryos inside the polyp. The larva remain a certain time in the general cavity of the polyp, where they can be seen through its transparent body. In due time they pass from the mouth of the mother and then resemble a little white grub or worm, egg-shaped and fitted with cilia which enable it to swim freely. Its motion is backward, with the mouth behind. After a short life of liberty it fixes itself and enters upon its metamorphoses. Into these, however, we cannot enter in an essay like the present. Before long its phases of development are ended and it posesses the power of reproducing new beings by gemmation—budding. Then the polypidom is built up and there exists a prey for the engine of the coral-fisher. How long a time is necessary for the growth of a coral sufficiently large to be entangled in the meshes of the net we do not yet know.

The chief habitat of the coral which supplies our ornaments is the Mediterranean, although Professor Mosely records a fishery at San Jago and also at St. Vincent in the Cape Verde Islands. The best grounds in the Mediterranean lie along the coasts of Tunis, Algeria and Morocco, but red coral is also found near Naples, Leghorn, Genoa and on the coasts of Sardinia, Corsica, Catalonia in Spain and Provence in France. "It is said that it attains greater perfection in the east than in the south and that it is rarely found in a western and never in a northern aspect. It is found attached to rocks embedded in a muddy sea bottom, in which it flourishes more than in a clear or sandy bed.

The right of fishing the coral on the African coast has been a source of "international difficulties' from the time of the Middle Ages. Before the sixteenth century they were controlled by the Italian republics. Charles V, of Spain, secured the Tunisian fisheries, then they passed to the French, who had a monopoly until the trade was thrown open by the Revolutionary Government in 1793. The British controlled it for a short period about 1806; now they are again in the hands of the French, although worked mainly by Italians, who pay heavy dues.

The preparation and manufacture of coral had its center at Marseilles betore the French Revolution; now it is almost exclusively in the hands of Italians centered at Naples, Rome and Genoa.

The fishing grounds are generally from two to ten miles from land and the water about 30 to 130 fathoms deep, the most suitable being about 80 fathoms. The boats are chiefly of Italian build, good sailers and ranging in size from sixteen tons, with a crew of ten or twelve men, to boats of five or six. Their rig is the broad lateen sail of the felucca and a jib or staysail. The capstan, which is a very strong and ponderous one, the fishers and the crew occupy the stern, while the fore part is given up to the padrone or master. The "engine" consists of a wheel without the circumference having a varying number of radii. Beneath the center the wheel (or cross, it may be) is ballasted with iron and stone. Each arm measuring some six or seven feet in length carries a rope some thirty feet in length and this rope bears some six nets or lines looped up so as to form a "swab" of rope as thick as a man's finger. The net or swab is so looped up as to form a sort of rosette when it falls on the water. A cable passes from the centre of the wheel or cross over the capstan.

So accurate is their knowledge of the ground that these fishermen, without chart or compass, are said to have fished up from the depths an engine they had dropped in a previous season. "Having arrived at a convenient spot the padrone throws his engine overboard. The rope supporting it is liberally paid out, so that it may float freely on the waters. One end is fast ned to the centre of the wooden cross; the other is coiled round the capstan of the fishing boat. Seated on the gunwale the master throws one leg over the side, the rope passing across his thigh, which is covered with a small piece of leather. According to the varying pressure of the rope, he judges of the state of the ground he is fishing and determines the proper moment for abandoning the engine to the weight which tends to drag it downward. The moment comes. He calls to the man at the capstan to let go; away flies the engine to the bottom, where it quickly entangles itself in the projections and fissures of the rock. Now comes the tug of war.

"As the boat flies onward the men toil at the lumbering capstan to haul in or let go the rope according to circumstances; half naked in the geare and glow of the Mediterranean sun, with the bead-drops trickling down their swarthy bodies, they ply their unremitting toil. Again and again the engine is brought to the surface, and the broken coral collected from its meshes. The weight is enormous, and as the capstan raises it through the opposing waters the men are compelled to exercise all their strength, under the stimulus supplied by the blows of the padrone liberally rained upon them. They would, indeed, sink under the toil if they did not incessantly recruit their energies by eating, without interrupting their task, however, the supply of biscuit placed within their reach; so that it may be justly said: "The coral fisher is always devouring. The expression has become proverbial. It may readily be imagined that none but the lowest characters take such work, so that there is another saying—"Only a thief or a murderer turns coral fisher." But even these begin their task with an invocation and dedicate the first fine branch to the Blessed Virgin.

First-class hands make from $80 to $120 for the season of six months; inferior men get about half that amount. The larger boats get from 650 pounds to 850 pounds in six months' fishing, the smaller from 300 to 500 pounds in a year's.

The waste of such a method of fishing must be enormous. Imagine the unwieldy engine crashing through a forest of such resplendent beauties as gladdened the eyes of Marsigli and Peysonnel!

When the coral is gathered together it is cleansed from shells and parasites and carried to the markets, the chief of which are Bona ane La Calle, on the African coast; Trapani and Messina in Sicily; Naples, Genoa and Leghora in Italy. The coral is sorted into (1) dark or rotten coral, the roots of the polypidom which are covered with deposits and parasites, this being worth barely a dollar a ton. It is used for lime. (2) Black coral; coral which having been loosened and having fallen into the mud has been blackened by the sulphurous exhalations. It is used for mourning ornaments and fetches from a dollar to a dollar and a half a pound. (3) Mass coral—the natural coral just as it is dredged, refuse mixed with finer sorts. It fetches, in bulk we might say, from five dollars to eight dollars or nine dollars a pound. (4) Picked coral—the best branches, carefully selected. This will bring from twenty-five to fifty dollars per pound. (5) White coral, which being a rarity fetches fancy prices. Fancified names are given to the color, such as "froth of blood," flower of blood," "first blood," second blood," etc.,

Coral is worked by first cleansing it with lime and then turning it on horizontal disks, resembling the lathes employed by opticians in shaping glass, by means of a paste made of emery and water. The turning process is repeated several times, finer paste being used each time.

The cutting of coral "pearls" with facets is a simple and very rapid operation. The branches are broken into small pieces by making notches with a sharp file and then being snapped asunder. A hole is made in one end with a vertical drill and a handle being fitted the fragment is rounded on a grindstone. The polisher then produces facets on a revolving metallic disk with emery paste and gives a final polish. Necklaces of such pearls are not uncommon. Minute fragments under the name of seed coral are also threaded and and formed into ornaments of a cheaper kind. After all the prettiest form is that of the natural branches or twigs in a plain setting and then you have a decoration as becoming to the fair Caucasian as to the dark-skinned daughter of the Moor.

"Millions of millions thus, from age to age,
With simplest skill, and toil unweariable,
No moment and no movement unimproved,
Laid line on line, on terrace spread,
To swell the heightening, brightening, gathering mound,
By marvelous structure climbing to the day."