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A FIELD FOR INVENTION.

With the utilization of every new natural product there is required a more or less extensive group of new machines and implements. It is not surprising, therefore, that with the increasing attention paid to the American agave as a fiber plant there should come a demand for new implements and appliances to be used in securing and cleaning the fiber.

The plant (*Agave americana*) is described as a member of the amaryllis family. It is put to a great variety of uses by the natives of Southern Mexico and Yucatan. A gentleman commercially interested in the development of this plant says that a coarse thread has long been made of the fiber. The disagreeable gummy substance which forms the bulk of the thick leaves has peculiar saponaceous properties, which has caused the agave to be known sometimes as the soap plant. When the leaf is split longitudinally the surface of the hollow center is found to be so thickly covered with fine particles of silica that it makes an excellent hone for sharpening knives, razors, and other edged tools. There are quite a number of varieties of the agave. In arid soils and on the uplands its leaves, in a cluster around a stalk which reaches but a few inches above the ground, are often not more than a foot or two feet long, very thick, and six to eight inches broad at the base. Other varieties are known as Bromelia, Henequin, silk grass, Ixtle. On the lowlands, especially in Yucatan, Honduras, and Nicaragua, where the pita grows most luxuriantly, the leaves are narrow and thin, containing a smaller amount of gum and sap, and are sometimes sixteen feet long, the average length being ten feet. The leaves continue green and increase in length during nearly the entire life of the plant, which varies from ten to seventy years. When the plant approaches maturity a flower stalk shoots up from the center of the leaf cluster to a height of about thirty feet. The plant then flowers and dies. Experiments have shown that the fiber of the finest varieties is so finely divisible that it can be advantageously woven with silk. It bleaches without loss of strength, and takes dyes as perfectly as any fiber known. It has also been successfully woven with cotton and wool. The uses to which the natives have put the fiber are the manufacture of bowstrings, nets, ropes, mats, sacking, fish-lines, hammocks, and a few coarse garments. They obtain the fiber by the very primitive method of gathering the leaves and pounding it out between stones and "whipping" it to cleanse it. Yet prepared in this rough way the product possesses a strength and durability much greater than manila hemp. When combed out with a comb or hackles it has been pronounced equal to the best Russian flax. From the different varieties of this plant fibers of all the different grades can be obtained from Mexico and Central America sufficient to supply the whole world. Exports from Yucatan to Europe have been found very profitable, although the quantity exported is yet small. An American company has recently established a mill with machinery for preparing the fiber not far from Vera Cruz, but the yellow fever which has prevailed at that port has prevented the company from securing the necessary labor and work has been unnecessarily delayed.

Another company has been formed for the development of this and other fiber plants in Honduras, having secured for this purpose a vast tract of country on the Caribbean coast. The *Panama Star and Herald* of recent date says:

"A sample of 'pita' (*Bromelia febrista*) was lately sent from Belize to New Orleans. Experiments prove it to possess an exceeding strong and valuable fiber. The sample, which was of a yellowish tint, was bleached by the Roberts Kendal process to a snowy whiteness, and now presents the appearance of fine and delicate white silk. As this valuable fiber can now be extracted from its pulpy covering and bleached perfectly white without loss of material, and at the same time very expeditiously, it bids fair to become an important article of commerce between the Central American States and the United States. The production of this staple is unlimited in Central America, and its cultivation should be largely encouraged."

Special efforts are being made to substitute the cultivation of this plant in the French island of Mauritius, in place of sugar and other crops which have failed. A planter appeals to the Paris correspondent of the *World* to set the problem of inventing a machine for preparing the fiber before our "clever American inventors." He says: "The man who does that will not only powerfully contribute to the prosperity of our little island, but—which is far better to a practical mind—he will at the same time most certainly make his own fortune."

The pita or agave fiber brings in London an average price of \$150 a ton.

THE MORAL INFLUENCE OF THE TELEGRAPH.

"One touch of nature makes the whole world kin." Men have accepted this saying in a broader sense than Shakespeare dreamed. But for a world-wide manifestation of its truth, for a signal demonstration of the kinship of humanity, men have had to wait until science and invention had brought all nations into something like instant communication. It was the touch of the telegraph key, a favorable opportunity being presented, that welded human sympathy and made possible its manifestation in a common, universal, simultaneous heart throb.

We have just seen the civilized world gathered as one family around a common sick bed, hope and fear alternately fluctuating in unison the world over as hopeful or alarming bulletins passed with electric pulsations over the continents

and under the seas. And at last, on the same day, the nations stand in sympathetic mourning; a spectacle unparalleled in history; a spectacle impossible on so grand a scale before, and indicative of a day when science shall have so blended, interwoven, and unified human thoughts and interests that the feeling of universal kinship shall be, not a spasmodic outburst of occasional emotion, but constant and controlling, the usual, everyday, abiding feeling of all men toward all men.

THE LESSON OF MR. GARFIELD'S YOUTH.

Nothing that Mr. Garfield ever did will mark so grand an issue, or contribute so much to emphasize the new era upon which humanity has entered, as his dying. It was everything that he did and attempted in life, however, and especially the manner of his doing and attempting, that made it possible for his death to be one of the notable deaths of history.

After all, there is nothing that the world esteems so highly as broad, forceful, generous, genuine manliness; and it was because Mr. Garfield had acquitted himself nobly as a man in his long and arduous struggle with life and death that the best men and women of all nations lamented the untimely ending of his career. It is true that the exigencies of political life had resulted in his achievement of one of the most conspicuous and honorable positions among men; but neither that nor the atrocity of the crime which cost him his life could alone have awakened such national and international sympathy and interest as we have just witnessed. It was the manliness of the man, not the dignity of his station, that the world regarded.

It is a question for the rising generation to consider: How and under what influences the manliness of Mr. Garfield was developed and demonstrated.

Nature's first and best gift to man he had at birth—a strong body, well set up, and endowed with vigorous and healthy instincts. Thus, in the highest sense, he was well born. Beyond this his early prospects were certainly not brilliant. His early home was a rude, single-roomed log house in the wilderness. Orphaned in his second year by the death of his father, the poverty he was born to was intensified and saddened by the lack of a father's care and guidance. For fourteen years the log house was his home, and hard work his chief educator. The family circumstances improved slowly, and the older boys built for their mother a small frame house with three rooms on the ground and two under the roof. Here was young Garfield's home for two or three years more, during which he earned something at odd jobs among the neighboring farmers.

At this time his ambition was to be a sailor on the lake. His ambition was not gratified, and he hired himself to a cousin at ten dollars a month to drive the horses of a canal boat. He was now seventeen years old, an age at which most boys regard their education complete or hopeless of attainment. His, so far as books went, had not begun.

At eighteen a fit of sickness kept him in bed for months. To divert him from his intention to be a sailor his mother persuaded him to begin to prepare himself to be a country school teacher. Then, if he still desired to, he could sail summers and teach winters, and so be earning something all the time. He had no money, but by working with a carpenter at odd hours and Saturdays he earned enough to buy books and pay his board. In the winter he taught a district school. At twenty he pluckily decided to prepare for college, counting that he could work his way through in ten or twelve years.

At the age of twenty-three he was ready to go to college, and had saved enough money while teaching to pay his way for the first year. By borrowing money on a policy of insurance on his life he was able to complete the rest of his college course without the anticipated delays, graduating at the age of twenty-five. For the next five years he taught, reading law meantime, and then entered upon political life in the Ohio Legislature. In 1861 he was admitted to the bar, and in the winter of the same year, in response to the call for volunteers, he abandoned his legal plans and entered the army.

By this time he had developed those traits of character and a capacity for painstaking effort and hard work which made his promotion comparatively rapid. In 1863, at the age of thirty-two, he resigned a major-general's commission for a seat in the U. S. House of Representatives upon the urgent solicitations of President Lincoln. After seventeen years of diligent service in the House he was chosen to represent his State in the Senate, but before taking his seat he was elected President of the United States.

It is impossible here to touch upon those details of character and circumstance which fittingly illustrate the nature, severity, and grand success of the struggle upward to be seen in the life we have so baldly outlined. The lessons to be learned from such a life cannot be too strongly commended to the young, whether born to poverty or wealth.

The early life of poverty and hard work which young Garfield inherited undoubtedly developed much of the force and manliness which he displayed in after life, and saved him from many of the hinderances and temptations incident to inherited riches and social position; but it must not be forgotten that the vigorous body and passionate nature, which he disciplined and made the basis of a pure and lovable manhood, carried and involved moral hazards not less than those of wealth.

He overcame the disadvantages of early surroundings, as thousands of other young men have, simply because he