

whereas his predecessor in the see of Troyes had officially investigated the matter and proved it to be a forgery. 'Et probatum fuit eiam per artificem qui illum (pannum) depinxerat, ipsum humano opere factum, non miraculose confectum vel concessum.'

There is also another difficulty. It is stated that there is at least one other Holy Shroud in another holy place.

QUEER CHINESE TREES.

BY ISAAC TAYLOR HEADLAND.

"Queer, aren't they?" said one of the party as they noticed the tree in the illustration. "Who's queer?" asked the little man with the short legs and large head. "The Chinese." "Why?" "Look at that tree."

The tree was of special interest to the little man, as he was collecting information about all kinds of queer growths of Chinese trees and flowers.

"No, not queer, just Chinesey," he replied.

The tree is an ordinary evergreen. It had been split up from the roots about six feet when a small sapling, the roots having been carefully divided, and thus planted in front of the temple. The two halves were placed three feet apart, each having the same curve to the place where they joined, from which point it grew in its natural form. It was placed directly in front of the door of the temple, between the door and the gate of the court, ten feet from the gate and thirty feet from the door, as though it was designed that the worshiper would pass through the tree before entering the temple.

Thus far we have discovered only six of these trees. Four are in the north end of the Forbidden City, in front of two of the temples. The one in the illustration is before the temple in the winter palace, where Count von Waldersee's troops were stationed, and the third is in a similar position in the summer palace. Whether this particular kind of tree is confined to imperial grounds we cannot say, but thus far we have seen none in other localities.

The Chinese are fond of wrapping or braiding two, three or four sprouts of a tree together, and allowing them to grow in that form. In the campus of the Peking University there was a species of locust, which they call the *Huai shu*, and which, by the way, is the best shade tree of North China, the two sprouts of which had been wrapped together when small, and when sawed down by the Boxers they were each six inches in diameter.

Only a short distance from where the writer is now sitting is an apricot tree on which is an abundance of fruit. It consists of four sprouts which have been neatly formed into a braid and have continued to grow until they are each three inches in diameter.

A favorite decoration for lawns or courts is made from this locust. The top of the tree is cut off and the root of another the same size grafted thereon. The roots thus become branches, which grow downward instead of upward, and are covered with a dense foliage. This species of shrub is very common and familiar to all landscape gardeners.

A very interesting and attractive flowering shrub is called *Kan-chieh-mei*. It is a species of plum, is used as a pot plant and grows two or three feet high. Every branch is bent or broken in as many ways as possible to bring them all close together, so that when it blooms—which it does before it leaves—it is a mass of flowers.

Perhaps the most attractive specimen of Chinese plant cultivation is the grafting of the chrysanthemum. They have a large, common weed called *hao tze*. In the early summer they cut the branches off this weed and in the place of each branch, as well as on the top, they graft a chrysanthemum stalk. The root of this weed is much stronger than the root of the flower, so that when they bloom the flowers are double as large as the ordinary chrysanthemum, and in addition to this extra luxuriance of blossom, all varieties of color appear on the same stalk. Blooming as they do in mid-winter, they are very attractive.

It goes without saying that a people who thus understand the grafting of flowers are not ignorant of any of the processes of budding, grafting or crossing fruit; as a result we are able to obtain very fine specimens, especially of the peach.

Carbureted Acetylene.

A departure which may turn out to be of some importance to the automobile industry, is described in a paper read by Dr. N. Caro, of Berlin, before the German Acetylene Verein at a meeting held at Eisenach. It appears from Dr. Caro's contribution that acetylene gas, when led through petrol, becomes heavily carbureted by it in much the same way as does ordinary atmospheric air. 100 liters of acetylene will in this way take up 125 grains of petrol, yielding 150

liters of carbureted gas. As a heating agent the carbureted acetylene is superior to ordinary acetylene in the proportion of about 6 to 4. It is plain that we have here a gaseous mixture containing a high degree of energy. Should it turn out to be applicable to explosion engines it ought to enable motors of extreme power per unit of weight to be constructed. There may, of course, be practical difficulties in the way, and they have not altogether been satisfactorily got over yet in the case of acetylene gas alone, while the fact that there is a tendency for petrol vapor to separ-



A PECULIAR TREE GROWTH.

ate out from the acetylene on cooling somewhat, may give rise to additional complication, but in any case the discovery is one of high importance, and possibly before long we may see it made practical use of in explosion motors.

STORY OF THE FISHSKIN GARMENTS OF THE AMUR TRIBES OF EAST SIBERIA.

BY WALTER L. BEASLEY.

Among the new and striking exhibits of the Jesup North Pacific Expedition, just installed in the Anthropological Hall of the American Museum of Natural History, are a number of elaborately ornamented fishskin garments or dresses. These were collected by Dr. Berthold Laufer, who spent two years in gathering material to illustrate the life and customs of the



TWO SIBERIAN FISHSKIN GARMENTS.

various tribes of the Amur regions of East Siberia. One of the noteworthy results of these investigations is the bringing to light of a tribe of highly skilled and versatile artists, who, though living in a primitive state, being unable to read or write, and having no written or historical records, are yet masters of decorative art. Several hundred specimens of their household effects and wearing apparel, profusely ornamented with astonishing designs, display the wonderful character of their native handicraft, which is considered an independent branch of East Asiatic art, entirely different from that of other Siberian peoples. It was found that the Gold were the most talented repre-

sentatives of the Amur tribes, possessing the best understanding of decorative art, and having the largest number of individual artists excelling all others in the proficiency of embroidery. The two fishskin dresses here pictured are the work of the women of this tribe. The original motives for all their designs and patterns are derived mostly from the cock and the fish. The fishskin dresses are worn exclusively by the women, and are highly ornamented with cut-out pieces of fishskin, generally colored blue. They are sewed with fishskin thread to a piece of fishskin adapted to the size and form of the ornament. The patterns are cut out by means of a long, sharp-pointed knife, as they do not possess scissors. The dress is composed of three layers of fishskin, the undermost representing the skin of the garment proper, the uppermost showing the ornaments in the cut-out form. Between these two layers is inserted a middle layer, which serves as a background to the ornament proper, throwing out distinctly the negative parts, as well as the outline of the ornament. On the left dress pictured are two neat naturalistic perching cocks, with trisulcate tails and open beaks. The bottom is occupied by a composition of conventionalized fishes and spirals. The garment on the right presents a different scheme of ornamentation and consists of three vertical rows, the two outer of which tally and are composed of three single figures each, while the middle series presents a coherent structure. The ornamental principle of this pattern is a pair of facing spirals in the middle; above and below them are two erect conventionalized bipartite fishes, and the whole is surrounded by a line corresponding to their form. A detailed study of the marvelous ornamental productions of this gifted tribe of Amur artisans would yield the American seeker after fresh and original designs for decorative purposes a rich field for selection. A splendidly illustrated memoir on the "Decorative Art of the Amur Tribes," by Dr. Berthold Laufer, has just been issued by the Museum.

A Substitute for X-Rays.

Years ago Becquerel found that salts of the rare metal uranium possessed the power of throwing off a feeble and invisible radiance that affected photographic plates, like the X-rays. Mme. Curie in Paris last year isolated from the Bohemian mineral pitchblende two other elements that behave in the same manner, but are far more active. One of them she called "polonium" and other "radium." The latter is said to be one hundred thousand times as intense as uranium in its photographic effect.

Prof. Geo. F. Parker, of the University of Pennsylvania, has been experimenting with all three of these elements and with the mineral (pitchblende or uranite) from which the two new elements are derived. He recently exhibited a series of photographic plates on which impressions had been produced by these substances. His procedure has been as follows:

A photographic plate was inclosed in black paper and then covered with yellow paper. After one whole day's exposure to the sunlight no effect was produced.

This precaution proved the thoroughness of the protection. Then the various metals and salts were placed outside the covering of the plate and they produced dark stains.

In order to take photographs of objects such as a hand or a foot these objects would be placed between the metal and the plate, and the result would be similar to those obtained by the X-rays. Such substances as bone show clearly through the flesh and surrounding tissue. A photograph can be taken by means of radium in half a minute.

The property of the new metal is apparently of great practical value. The results of the X-rays, now so useful in surgical diagnosis, can be duplicated by a method much cheaper. Radium seems to suffer no diminution of energy or loss of weight during the process. In addition to producing an impression on the photographic plate, radium produces phosphorescence and discharges electrified bodies. Thus it will be seen that it possesses all the qualities of the Roentgen rays.

Radium apparently violates one of the fundamental laws of physics, namely, that of the conservation of energy. It does not appear to derive its photographic power from the sunlight nor lose it by expenditure.

To Destroy Vermin on Fowls.

In order to destroy the vermin with which domestic fowls are often infested, a Canadian inventor, Edwin T. Stewart, of Ottawa, has devised a nest egg which is hollow so that it can be filled with an insecticide. The nest egg is of such construction that by the movement of the fowl upon its nest the insecticide will be automatically distributed.