

A CURIOUS USE FOR ELK HORN.

BY CHARLES F. HOLDER.

In past centuries vast herds of elk covered the West. Rapidly they became rarer and rarer. Probably during the present century the animal will become extinct. Up to 1842 it was found in New York State, and later in Pennsylvania, but it has been driven from place to place until many of the regions where it once roamed in vast herds know it no more. So rare is it in California that the two or three small herds are as well located as herds of cattle. Next to the moose the elk is the largest of the deer family, and of all the tribe it is the most commanding and splendid example of big game. Those who have hunted it in Montana, that being at present the best locality, have been amazed to find in certain localities vast numbers of horns, forgetting that the wapiti regularly casts its horns.

Most of the horns are shed on the winter range; and in the vicinity of the Green River

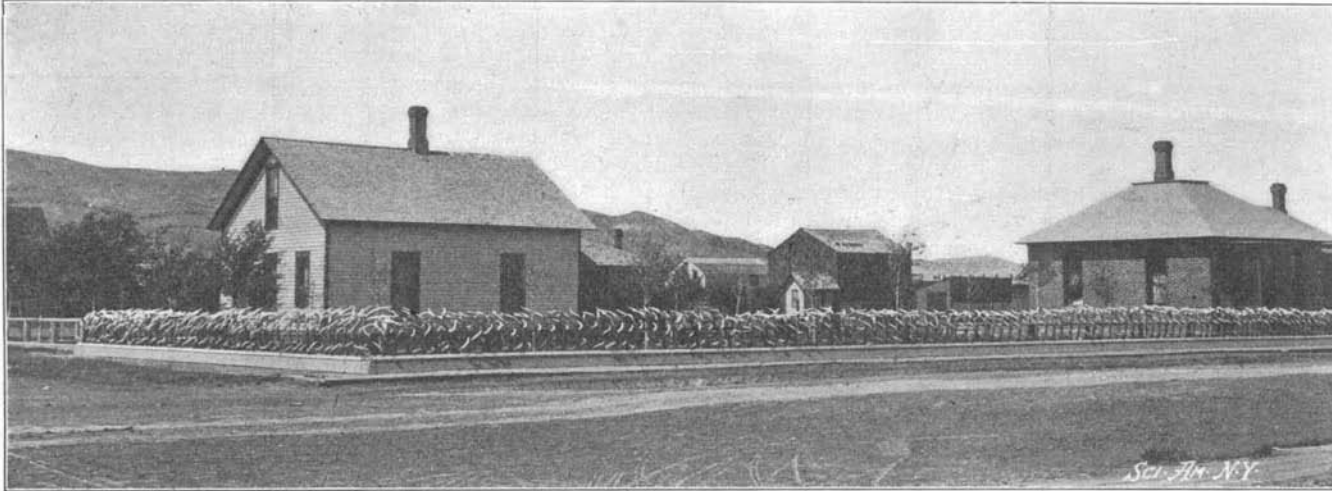
country, Montana, and the adjacent mountains, thousands of such horns can be picked up, or found in all stages of decay, in some places so thick that the observer, not posted as to the actual facts of the case, might assume that there had been a general slaughter. Hundreds of these horns are shipped all over the country as trophies, but in the Montana towns they are used for a much more common purpose. One such is well illustrated in the accompanying photograph, which shows a fence in one of the principal streets of Livingston, Montana, made entirely of hundreds of wapiti horns, dovetailed together so closely that a perfect and ideal fence is the result, one calculated to attract widespread attention. The horns are not taken, as some tourists suppose, from the deer, so representing the destruction of the animal, but have been picked up on the winter range and taken to the town or city for this specific purpose. In the fence shown there are two or three hundred wapiti horns, representing one hundred and fifty animals.

The horns are employed not only for fences, but for chairs, four or five being interwoven and forming a framework to the seat and back. Picture frames are also made from them, and hundreds find their way into manufacturing districts, where they are cut up into large knife handles and used in the manufacture of sporting goods of various kinds. Many are also employed in the decoration of houses. One of the famous hotels of Colorado took its name from the antlers, bearing in its rooms some fine examples of the horns.

EXPLOSION OF A LOCOMOTIVE BOILER.

By the courtesy of The Locomotive, we are able to present the accompanying cuts showing the explosion of the boiler of a small locomotive, due to the failure of its staybolts. The boiler carried two 48 inches in diameter by 9 feet 8 inches in length. It was built of 7-16-inch plates, with ordinary double-riveted lap joints, the rivet holes being 13-16 inch in diameter, with a pitch of $\frac{1}{8}$ inch from center to center. The boiler carried two 2½-inch diameter, pop, safety-valves, which were broken by the explosion and were not afterward found. The crown sheet of the firebox was $\frac{3}{8}$ of an inch thick, 78 inches long, and 45 inches wide, and it was secured to the shell by staybolts which were pitched 4½ inches from center to center, while the staybolts on the side sheets were pitched 3½ inches, from center to center. The staybolts in the crown were of 1-inch stock and those in the legs of $\frac{7}{8}$ -inch stock. At the time of the disaster the locomotive had just drawn a train to the summit of the grade. The explosion was of unusual violence, the engineer and the fireman being instantly killed, the body of the latter being blown literally to fragments. Owing to the death of these two men, the lessons of the explosion can only be gathered from a study of the position and nature of the wreckage. The firebox was torn asunder and flung in all directions, while the barrel was shot from the frame with a rocket-like action, traveling upward and forward away from the engine. Its course lay in the general direction of the track; but as the accident took place on the curve, it

finally came to rest on the outside of the curve, and about 25 feet from the track. The condition of the ground showed that the barrel struck first on its front end, and then after turning two complete somersaults, striking the ground each time that it turned over, it came to rest 210 feet ahead of the spot where the explosion occurred. One of the largest fragments of the boiler was thrown 110 feet to the right of the track, while another was found 100 feet behind the site of the explosion and 70 feet to the right of the track.

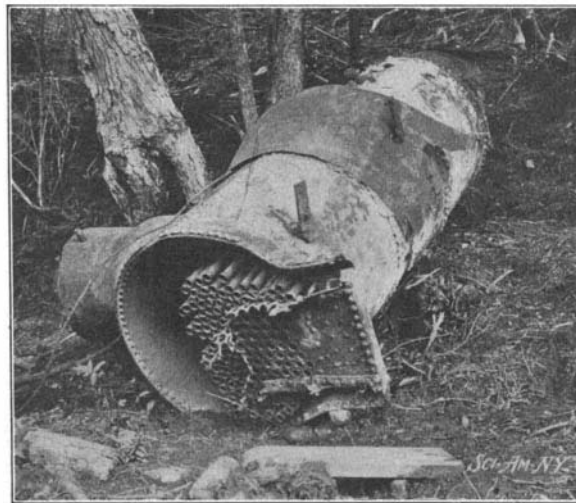


A FENCE MADE OF ELK HORN.

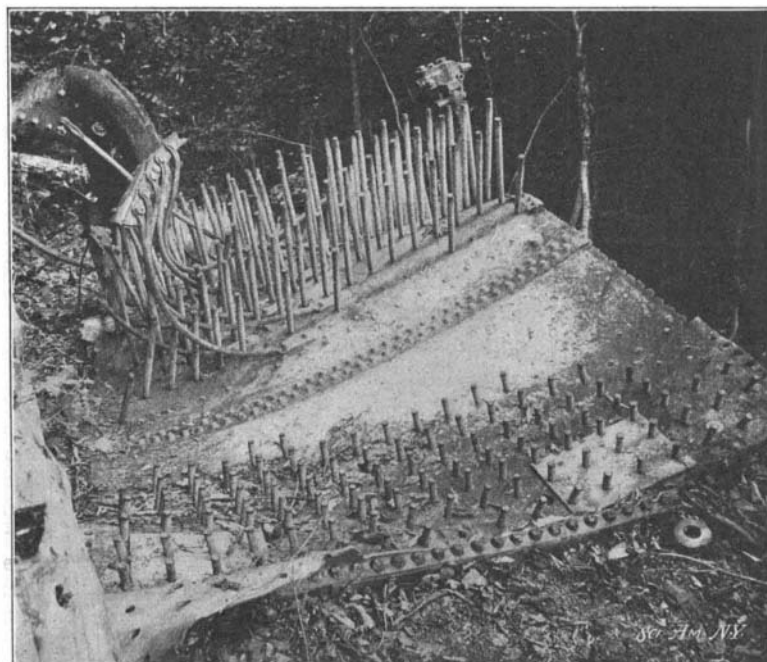
While the engravings serve to show the unusual violence of the explosion, there is no conclusive evidence as to the immediate cause of the disaster. At the same time it was noticed that a number of staybolts were broken before the accident, and it is considered probable that the explosion was due to loss of strength from this cause.

Artificial Indigo.

The first artificial indigo was made by Prof. Adolf V. Bayer, of Munich, in 1879. The material used was orthonitrophenylpropionyl acid (an inorganic acid of which nitrogen and phenol are chief elements). The process was acquired by two important German factories, but after a few years of costly experiments, they were forced to cease their efforts, the expense



The Barrel, Thrown Forward 210 Feet



A Fragment of the Firebox.

EXPLOSION OF A LOCOMOTIVE BOILER.

of the materials alone being greater than the selling price of genuine indigo. Then followed twenty years of earnest labor and diligent research to discover practical means of producing artificial indigo. Over 200 patents were taken out. German dye factories spared no time, pains, or expense to solve the problem. The chemical constitution of indigo was fathomed, but the right material with which to make it was not forthcoming.

In many of the experiments, toluol, a coal-tar product allied to benzole, was used. It was an interesting but useless effort, because the available toluol was sufficient to produce only 1,500,000 kilogrammes (3,306,900 pounds) of indigo, while the world's consumption of indigo was estimated at 5,000,000 kilogrammes (11,023,000 pounds).

Finally, Prof. Karl Heumann, of Zurich, made the important discovery that naphthalene could be used as the raw material for artificial indigo. Naphthalene is much employed

in the production of colored stuffs and in various other industrial processes, and is declared to be obtainable from coal tar in sufficient quantities to cover the world's consumption of indigo.

Exactly how naphthalene yields a practicable indigo; what chemical operations are utilized; what substances must first be produced in order to obtain the desired article easily, cheaply, and pure in quality—all these facts are withheld from the general public in the interest of the factories which are engaged in costly experiments. It is said that the aniline and soda factory at Ludwigshafen has alone invested 18,000,000 marks (\$4,284,000) in equipping and conducting an indigo-making department.

The employment of artificial indigo is spreading. Advantages are claimed for it over the genuine article—for instance, that it is always the same and it is free from objectionable mixtures, and therefore pleasanter to use and purer in its coloring. The sanguine prophecy is added that it is merely a question of time when artificial indigo will be used not only generally, but solely.

Disappearance of the Terrapin.

The world-famed Chesapeake terrapin is evidently fast disappearing. All along the Chesapeake Bay terrapin hunters are finding greater difficulty than ever in capturing the diamond-backed creatures, so highly prized by gourmets. It seems strange now to read that in ante-bellum days the Maryland legislature once passed a law prohibiting slave-owners from feeding terrapin to their slaves oftener than once a week—a law, the passage of which was prompted by the negro taste for pork.

The preservation of the terrapin supply has been a problem that has given the dealers much concern during the last few years. It is doubtful whether the creature will propagate in captivity. But it is certain that incubators will protect the eggs from the ravages of marsh rats and crows. The chief source of terrapin supply is now Crisfield, Md., although many diamond-backs come from the Choptank River and the waters of Talbot County. At Crisfield the dealers have been in the habit of gathering terrapin and impounding them in the water. The result of this is that all the good Chesapeake terrapin are at Crisfield, imprisoned by dealers. The price now for 7 and 8-inch terrapin is \$60 a dozen; for 6 to 7 inches, \$36 a dozen; 5 to 6 inches, \$14 a dozen; and under 5 inches, \$2 a dozen. The discrepancy between \$60 and \$2 a dozen is due to quality; for the diamond-back increases in flavor with age and appears to become more tender as it grows older. Furthermore, the smaller terrapin cannot be marketed, since the law prohibits it.

Time was when catching terrapin for the market was a prosperous calling along the Bay shore; but with the practice of impounding, the waterman's life is not quite as lucrative as it once was. Indeed, it is now considered a great bit of luck to find a diamond-back or two in the mud.

It took 11,300,081 horse power to carry on our industries in 1900 and 5,594,655 in 1890.