

GRASS HOUSES OF THE WICHITA INDIANS.

BY WILLIAM R. DRAPER.

The finest house ever designed by a redskin is the grass house of the Wichitas, a tribe that at present live in southern Oklahoma. They are the only tribe that ever accomplished successfully the erection of a grass structure. Soon they are to abandon these huts and take up their humdrum reservation life in two-room frame shacks, which are being built for them by the government. The grass house, it is claimed, is far from being healthful; but it is certainly comfortable.

There are but about fifty old men of the tribe alive to-day who understand the art of building one of these houses so that it will stand. And these refuse to work, even for generous wages. The government has offered these grass-house builders lucrative employment to construct some houses that may be preserved as models of an ancient art. But they refuse, and the grass huts that used to dot the prairies of the Wichita reservation are now being torn down. The Wichitas are determined that their huts shall not survive them.

Appearances are often deceiving. One can look upon a grass house and imagine it an easy thing to build. But not so. It is indeed most intricate. The grass is gathered early in the spring, when it is yet fresh. The sod cutting usually takes place immediately after a rain, the sod being removed to a thickness of about eight inches. Buffalo grass sod is the only kind that will answer the purpose of the builder. He commences to lay the foundation as does the stonemason, digging away the earth to a depth of about one foot. The grass portion of the chunks of sod is laid to the outside, and the house is built to a height of twelve to fifteen feet, in the form of a pointed dome. There is no hole in the top for smoke to pass out, the latter being carried away through a pipe on the outside of the hut. The door is usually in the south, and there are no windows. Through each tuft of sod is run a willow reed string, and these strings are bound clear around the structure. The grass remains green, and will grow if there is plenty of rain. It is not at all uncommon to see the sides of these grass houses turn green as spring approaches, just as do the pastures near them. The houses are very warm in winter and cool in summer. They never leak. Often the Indians have barns made of the same material. But in these days the redskins are made to live in frame shacks, and the once famous grass house will soon be but a recollection.

The Pittsburgh Reduction Company has purchased one hundred acres of land at Massena, N. Y., on which five large factories covering at least fifteen acres are to be erected. The company is to make aluminium principally, and will employ from five hundred to six hundred men constantly during the year. The cost of this plant will involve an expenditure of over one million dollars. The buildings will be up by fall, and the plant will be in operation by April next.

ARMORED NESTS.

BY CHARLES F. HOLDER.

In the countries where cactus is common, numbers of animals evidently recognize the availability of this armed plant as a retreat in time of danger. In San Gabriel, Cal., the old mission fathers planted a hedge of prickly pear or tuna about their property as a

their spiny armament. One of the most interesting nests discovered in cactus is shown in the accompanying photograph of a giant candle cactus, a typical form on the New Mexico desert and in old Mexico. The nest is indicated by the dark broken places half-way up the trunk, which were made by the Gila woodpecker—*Centurus uropygialis*—an interesting bird discovered by Dr. Kennerly many years ago when on his expedition along the thirty-fifth parallel, and first described by Prof. Spencer A. Baird in 1854. The bird is, comparatively speaking, rare, not often seen, its strange and peculiar notes being seldom heard, even by those who frequent the great deserts of the Southwest where it is found. Sometimes it is seen among the mesquite trees, rising when observed with a loud note of alarm, calling to mind, according to Dr. Cooper, that of *Phainopepla nitens*. During the nesting season the woodpecker clings to the cactus, and soon forms an opening, which by persistent pecking it gradually enlarges until it reaches the interior of the column, when it begins work in the pith in a downward direction, finally completing a hollow into which it takes leaves and the soft material from seeds, these constituting the nest, which,

being twelve or even thirty feet from the ground, in the heart of a column whose surface is a mass of needles, may be considered impregnable. The huge nests or the columns are among the picturesque features of the arid regions; and few, if not familiar with the habits of the Gila woodpecker, would suspect that the black or decayed holes on the surface are the openings for nests of this interesting and clever bird, which in this manner hides its eggs and young from the intense heat of the sun and from all pursuers.

A great mass of cacti, illustrated herewith, is a veritable city. On the ground floor or in the cellar dwell the cottontails, kangaroo rats, and on the edge of one patch found by the writer, heaped up against the cactus, was the enormous nest of the wood rat,

while near at hand was the burrow of a kangaroo rat; numerous gopher holes in the vicinity suggested the proximity of these pests. In the upper story were various kinds of nests—mocking-birds, finches and a humming-bird with several others which could not be determined, at least by the finder. Gorgeous spiders weave their webs from one great leaf to another. Various lizards claim the patch as their home, sunning themselves along the branches on warm days, retreating at night to the ground, where their burrows lead in every direction. All these varied forms—and many beetles and several other mammals could be added—find perfect shelter in the cactus, protected

by the array of spines which pierce and rend the inquisitive enemy.

A flannel rag dipped in hot water and sprinkled with turpentine is a good remedy against hoarseness. This poultice is also employed for lumbago and rheumatism. For facial neuralgia it is also said to give relief.



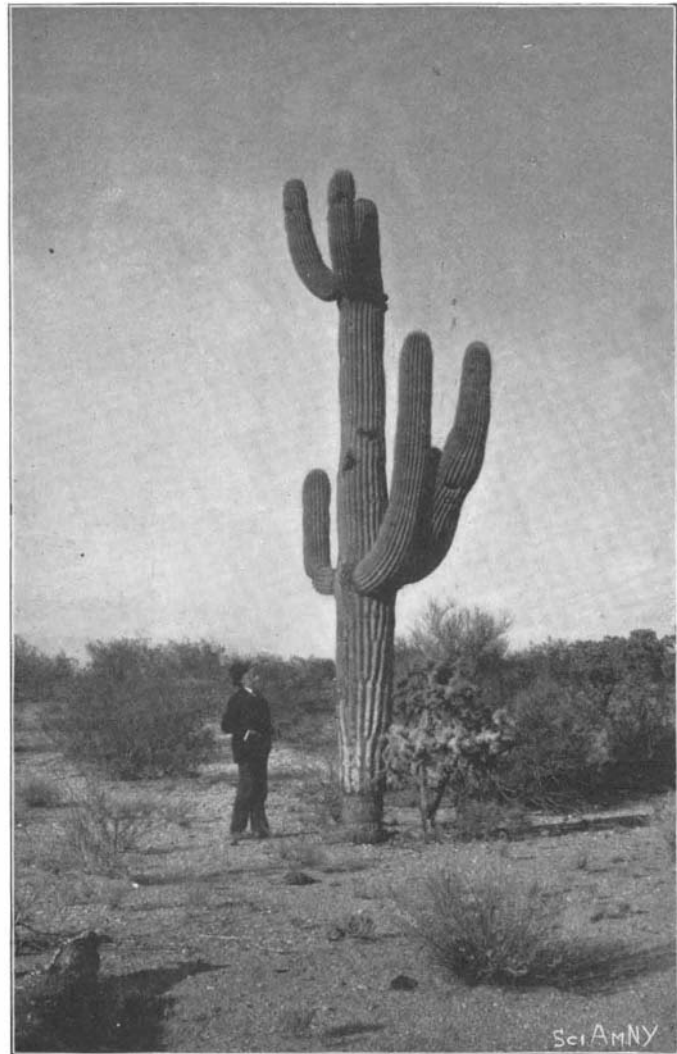
Grass House of the Wichita Indians.

protection from marauding Indians, disconnected patches of which still stand—interesting relics of the past. Such a group of spine-covered plants would seem to be the last place to be selected as a refuge, yet this *cheveaux de frise* constitutes the home of many rabbits that choose it as such, digging their burrows under its branches and roots, knowing that here they are safe from the pursuit of owls, coyotes, hawks and hounds, their enemies.

Almost every cactus patch in California will be found to afford similar protection, and the average hunter will invariably forego the game rather than engage the array of javelins. The various cacti, especially the variety which grows in clumps, serve as a protection particularly to birds. The writer has



Cactus "Forest" in Which Many Birds Build Their Nests.



The dark spots are the openings to the nest. Nest of the Gila Woodpecker in the Heart of a Giant Cactus.

ARMORED NESTS.

chased the roadrunner on horseback, the bird refusing to fly, finally seeking refuge in an extensive cactus patch, where it dodges slowly in and out, apparently knowing that it was safe from pursuit. The nest of the roadrunner has been found in the cactus, and the writer has seen the nest of the California quail concealed beneath the broad overhanging leaves with