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Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

*An* ARGUMENT  
*for a Botanical Garden in South Florida  
to be Called the*  
FAIRCHILD TROPICAL GARDEN

By MARJORY STONEMAN DOUGLAS

# Corn in the Mountain States

A Well-Defined Corn Belt Exists  
West of the Grain-Sorghum Belt

BY ALVIN T. STEINEL

What is the cause of the astonishing development in corn production in Colorado and adjacent mountain states? Has the corn plant suddenly adapted itself to climatic conditions hitherto considered too severe for successful culture of that cereal? Has the climate changed? Or, must we revise our estimates of the true nature of corn and accept it as the most adaptable feed and forage crop of the semi-arid west, thus discarding the grain sorghums?

These questions crowd the investigator who inquires into the reasons that lie behind the remarkable corn statistics that are coming from the Rocky Mountain region. Answers are quite apparent to farmers familiar with this region and its climate. First, let it be said that the sudden rise of corn is due to its building; second, that it does not crowd out a single acre of grain sorghum; third, the climate has not changed, and fourth, the corn plant is not undergoing any remarkable transformation. Indeed, it is only coming back to its native heath when it finds a suitable environment in the mountain country.

Now, after that last statement I think I see a thousand corn experts raise their hands in holy horror! The corn a cool climate plant! Never! Corn needs hot nights. If it does, we have them in Colorado. Personally, I do not put it that way. Corn needs a warm soil, and that we have during our growing season, no matter what the temperature of the breezes that sweep over our Colorado corn fields after sundown.

We said something about cool night breezes. In that statement we have the secret of why corn flourishes in Colorado, while it may dry out and fire a hundred miles east of the Colorado line. That, too, is the reason we have a distinct corn belt—if we wish to so call it, in the states that are under the influence of mountain climate.

The reason we have been slow to learn that corn likes our climate lies in a wrong conception of climatic influences. We had conceived of the ideal corn growing territory of the United States as lying in the vast Mississippi basin, petering out gradually northward into Minnesota, the Dakotas, and Wisconsin, eastward toward the Alleghenies, and westward to the region of the one-hundredth

meridian. At about the point we said corn growing becomes too precarious for profit because of drouth and hot winds in western Kansas and Nebraska, and because it is too cool as we approach the mountains and gain an elevation of 4,000 feet and upward.

For the hot wind territory we recommended kaffir, milo, feterita and allied grain sorghums, and we hoped by developing such hardy strains of the family as kaoliang, which has its habitat in Manchuria, to obtain a frost and cool weather-resistant grain and forage crop for our mountain states.

brief glimpse of ancient American history. Corn was developed on this hemisphere, probably on the Southern continent, by the ancient Peruvians. Springing from a tropical parent, exact genus unknown, corn in its finished, domesticated state was grown at varying elevations in the Andes mountains in a cool climate. As far as our present knowledge goes, thanks to archeological research, the highest civilization of the Peruvians, who in cultural development were at least the equal and have often been compared to the Egyptians of the Twelfth



Corn Grown at an Altitude of 5,000 Feet, in Boulder County, Colorado, Under Irrigation.

But what has happened? Farmers have upset the plans of experimenters and persisted against expert advice in growing corn under supposedly adverse conditions. Result? In the strip of plains country where, especially on upland, a hot dry summer has usually proved disastrous to corn, the grain sorghums are surviving and fitting in admirably, answering every purpose of corn for feeding or forage, grain or ensilage, but in the higher and cooler country, beginning approximately at the Colorado line, corn has demonstrated its superiority over all other feed crops, both under dry farming and irrigation.

In the course of as brief an article as this on such a large subject it is impossible to more than mention the factors that are responsible for this change in our crop program. Let the mind go back, however, for a

dynasty—was attained by populations that inhabited arid regions at high elevations. In a word, corn was grown many centuries ago under the magnificent terrace farming system of a race that ante-dated the Incas. It is grown today at 6,000 to 11,000 feet by the descendants of these ancients. While it is commonly believed that corn was originally developed in the tropics, there is nothing of record to confirm this. The best evidence we have that it reached its greatest development under temperate and arid conditions comes to us in the report of the Peruvian Expedition of 1915 of the National Geographical Society and Yale University. A study of that report should convince us that even though enfeebled by generations of adaptation to the ideal growing conditions of the North American corn belt, the plant soon regains the hardness

## ORIGIN OF INDIANS IN ASIA UNPROVED

Dr. Ales Hrdlicka Fails in  
Quest of Bones or Relics  
in Alaska.

By the Associated Press.

SEATTLE, Wash., September 17.—Ancient Indian villages, buried for centuries, failed this Summer to reveal the missing link giving physical proof of the theory of Dr. Ales Hrdlicka, Smithsonian Institution scientist, that the American Indian emigrated from Asia by way of Alaska.

After a Summer of research work in Alaska, Dr. Hrdlicka said here yesterday he was convinced that the Indian was an Asiatic who emigrated thousands of years ago, but that linking up the past with the present was difficult.

"The definite solution of the origin of the American Indian has not yet been found as nature has buried the key under thousands of years of reconstruction of Alaska by the action of the rivers and the elements," he said. "It has been a wonderful study and some time by accident some one will uncover the key to the problem."

"The Indians came originally from Asia in watercraft. A study of the country demonstrates this. These small tribes migrated down the coast, using water routes, and settled first along the Pacific Coast, and worked inland from there. The linking of the past with the present is an arduous work."

Dr. Hrdlicka said the work was a continuation of that carried on by him in 1926 and by others from the Smithsonian Institution since 1883. Its objects were to solve the origin of the Eskimo and his racial relations to the Indian and study the vanishing living full bloods. Dr. Hrdlicka predicted that in less than 20 years there will be no full blooded Eskimos in Alaska.

During the Summer the party traveled more than 3,500 miles along the Yukon River hunting for archeological relics. Old Indian villages were uncovered and examined and many cases of exhibits sent to the Institution in Washington. Casts were made of 15 full blooded Eskimos and Indians.

Dr. Hrdlicka, who arrived here Sunday, is en route to Washington.

### Whence Came the Indians?

When European voyagers crossed the Atlantic and "discovered" America they found here an aboriginal people who were given the name of "Indians" because of the mistaken idea that this land was in fact the "Indies." As this continent was explored and eventually settled by newcomers from overseas certain tribal variations between the natives of different parts were noted, but to the unskilled observation of the white pioneers they all seemed to be of the same racial stock. In later times, when the American civilization was established, the "Indians" became the subject of scientific study and researches were conducted into their origin and their ancient customs and relationships. A theory was advanced that the original stock of these so-called aborigines came from Asia. The fact that geological evidence existed of a practically continuous land contact between the two continents, across the present Aleutian Straits, pointed to this possibility if not probability.

This hypothesis of the original peopling of America from Asia has long attracted scientists, eager to trace origins of race mixtures. Study of the remains of ancient American civilization in the cliff dwellings and the pueblos of the West, comparison of the artifacts discovered in such ruins with Asiatic materials, observation of the language symbols of the two continents, and other methods of research have led to no definite conclusion, but the theory

remains in favor with many anthropologists, despite the difficulty of finding actual evidences.

Recently Dr. Ales Hrdlicka of the Smithsonian Institution, recognized throughout the world as one of the foremost of living anthropologists, has been making a study of conditions in Alaska in the hope of finding traces of the connection between Asia and America leading to the conclusion that this continent was peopled from across the straits, or at least that there was a large contribution of population from Asia, even though there was an aboriginal stock here. A report from Seattle states that Dr. Hrdlicka, after spending the Summer in this research, has failed to find specific proof of the origin of the American Indian. But he does not abandon the hypothesis on that account. This is the attitude of the true scientist. Negative results are not conclusive.

In this connection it is interesting to note that Roy Chapman Andrews, who has for some years past been conducting exploratory researches in Mongolia, seeking and finding remains of prehistoric animals—the discovery of fossilized dinosaur eggs was one of the achievements of the expeditions led by him—has from the beginning of his Asiatic studies entertained the theory of Asiatic origin of the American Indian, and has hoped to be able to continue his Mongolian researches along this line. Recently in Peiping he stated that he believed that if he were not interrupted and interfered with by the Chinese authorities, who have blocked his work this past Summer, he could establish the basis for a progressive study of the area between the Gobi Desert, where he found the dinosaur eggs, and the Pacific Coast, a study which he believed would result in tracing out the advances of the migratory movement leading across the Aleutian Straits to the North American Continent.

Dr. Hrdlicka finds that the ancient marks of human occupation in Alaska have been so far obliterated by geologic changes as to make the study most difficult. It is possible that the research may be more effectively conducted from the other side. To that end it is to be hoped that conditions will permit the early resumption of the work in Asia, broadened to include a systematic study of the area with the solution of this problem of American origins as the main objective.



# TROGLODYTES NEVER EXISTED, DR. H. W. KRIEGER DECLARES

*March 8, 1921*  
Returns From Expedition  
Which Carried Him Into Cen-  
tral Santo Domingo.

Search Was Made in One of  
Completely Unexplored  
Regions of Earth.

BY THOMAS R. HENRY.

After penetrating farther than any other human being into the weird, mysterious Central Cordillera of Santo Domingo along the course of the Tiroo River in search of remains of a race of troglodytes supposed to have antedated the Indians, Dr. Herbert W. Krieger of the Smithsonian Institution has just returned to Washington, convinced that they never existed.

The search took Krieger into one of the completely unexplored regions of the earth. The Tiroo, flowing through the high Constanza Valley, soon enters an un navigable country of lofty peaks and high waterfalls where the mountains close in upon the river with almost perpendicular walls of rock, impossible to ascend. The explorer soon becomes trapped between the walls and the rapids.

The leader of the last attempt to explore this country, a Brazilian scientist, perished and his native followers barely escaped with their lives. Krieger had hoped to navigate the river, overhung by the rock tombs of an ancient people, to its exit on the other side of the mountains, but was obliged to turn back after going further than any one else, with the possible exception of some native.

## Brings Back 150 Skulls.

From the mountains, and from shell heaps excavated in other parts of the island, he brought back to Washington 150 skulls, many fragments of artifacts, and a collection of tiny statues of the gods of a religion which once held sway over approximately 2,000 square miles of the West Indies and adjacent country.

Not only does this exploration blast the theory of a race of speechless cave dwellers, possibly pre-human, but also the evidence of an ancient Phoenician colony established in Santo Domingo centuries before the coming of Columbus. This consisted of rock walls of a general Phoenician design and presumably of a high order of masonry, but Krieger found that they were only natural curiosities—great boulders cracked into thousands of pieces by natural forces, which left each fragment in place so that it looked as if it had been fitted into a wall by human hands.

The search for skeletons involved digging up the streets and floors of a native town which happened to be built on top of an ancient cemetery. Right under one woman's kitchen stove he found a skeleton buried at least 400 years, the bones in a crouching position with four food pots and two water jars in front of them, just as the dead man had been provided for his long journey to the spirit land.

## Columbus Found Arawaks.

When Columbus came, Krieger explained, he found Santo Domingo inhabited by the Arawaks—an agricultural and hunting people of a high degree of culture. Accurate descriptions of them were preserved by the Spanish. They had the curious custom of flattening the heads of new-born infants, possibly so that their features would resemble those of some animal god. The skeletons can be easily identified.

Centuries later, when anthropologists became interested in aboriginal American cultures, these skeletons were recovered from shell heaps and graveyards, but mingled with them were some without the flattened skull and of a primitive appearance. This led to the theory that the Arawaks were comparatively late comers, having displaced in Santo Domingo the Ciboney, a very primitive race. From some skeletons it was deduced that they had not even advanced to the level of speech.

Krieger began last fall by excavating shell heaps on the Eastern coast of the island. These were the remains of the oysters and conches devoured by the Indians. He found heaps from 10 to 20 feet thick and not all the skulls were characteristically Arawak, but at the bottom of almost all the heaps he found Arawak statuettes and artifacts, disproving the conclusion that a previous people had been there.

At the site he excavated the shell heaps were about 15 miles across the bay from the ancient village sites. This led him to the conclusion that the population went on great food orgies from time to time—in some ways the equivalent of modern clam bakes.

## Finds Great Shell Heap.

Then he went to the village of Boca Chica, site of an American sugar refinery, on the southern coast, where he found the richest deposit of aboriginal remains yet uncovered on the island. There was a great shell heap 5 to 6 feet high and extended for three-quarters of a mile. It was built up of solid coral rock. One sand dune was put into it, however, and this



DR. HERBERT W. KRIEGER.

A profusion of skeletons were dug out of the sand.

Krieger could not dig far, however, until he began undermining the town. He secured permission to dig up the streets, but when it came to excavating the dirt floors of the houses he settled with the tenants by paying one month's rent to the American company which owned them. This ranged from 50 cents to \$1.

Here also everything turned out to be Arawak, although each skeleton did not have all the characteristics of this people. Krieger concluded that there were different culture levels among the Arawaks themselves, depending somewhat upon where they lived. Not all families flattened the skulls of their infants, just as all American families do not have their children baptized.

But if the Ciboney had existed anywhere, he concluded, it must have been in the sparsely populated high country. So he went by muleback into the lovely Constanza Valley. Here he found the statuettes of the same Arawak gods and the same pottery designs. Then came the dangerous descent of the Tiroo. Along this river the aboriginal people, unable to bury their dead, had placed the bodies and artifacts under overhanging ledges. Clambering up the steep slopes from time to time Krieger investigated many of these rock tombs and found them all characteristically Arawak, although the mountain people probably did not possess the same degree of culture as the coast dwellers. He continued until it was no longer possible to find footing on the steep slopes to go around the rapids.

## Country Uninhabited.

This mountainous country, he reports, is completely uninhabited, although there are fertile valleys which could be used as farmsteads. The mountain slopes he found rich with coal and copper. After this he was unable to get out of the Constanza Valley for three weeks because of the revolution, the natives refusing to guide him.

The search for the remnants of a Phoenician civilization was inspired by a recent scientific publication of Dr. Narciso Alberti, Spanish archeologist, who thought he had found in the rock walls concrete evidence of the ancient legend that marines of this seagoing people had been blown across the Atlantic before the Christian era. Photographs of the walls seemed to bear out this claim.

Closer examination, however, showed that they either were of Spanish workmanship or purely the product of nature without the intervention of human hands. No artifacts were found which would indicate a Phoenician origin.

"The San Domingan cave dwellers," Krieger said, "have even been described as pre-human creatures, not even able to speak. After this expedition I have about come to the conclusion that they never existed."

"There were, of course, different levels of Arawak culture and not all the Indians followed the same customs. One strange fact seems to be that they had reached the zenith of their culture and that this had started

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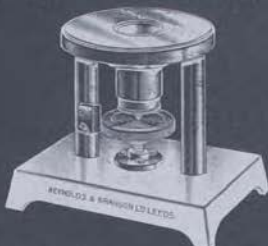
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Interesting Ideas of the

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