

### THE HOLLINGWORTH INDIAN VILLAGE SITE.

It has been so long since I found time to prepare matter for The Conservative in my line, that I shall not try to tell you, in order, the story of my summer's exploration, but shall describe the various Indian village sites according to geographical or ethnological groups.

A few weeks ago The Conservative published some very fine illustrations of the ruder types of flint implements found in the state. These will assist you in understanding the Hollingworth site, which is located two miles southwest of Holmesville on the west side of the Blue river and on high ground not far from its banks. The site is on the farm belonging to James Hollingworth, six miles southeast of Beatrice. We had the pleasure of meeting this genial gentleman; he stopped while passing by his large field of winter wheat to enquire the object of search; when informed of the importance attaching to the numerous rudely chipped blocks of flint found here, he seemed greatly interested and gave the freedom of his lands to further the aims of science.

The site covers about one hundred acres and is so thickly strewn with flint spalls that they must be an injury to the plow as it turns the soil. There is a strata of limestone cropping out at the very water edge of the Blue river, which contains flint nodules; the flint strewn so thickly over the field was doubtless obtained at the water edge, or, possibly from the bed of the stream; however, I did not examine the rocks in the river bed but found the strata in a quarry near Holmesville and traced its level. At Nehawka the flint nodules break out of the limestone easily but here they seem to be a part of the solid ledge and will not fracture off easily; the shape and size of the nodules are the same as at Nehawka; the two ledges are undoubtedly of the same geological formation, however, this is a question for geologists to settle.

The vicinity of the vast beds of flint found farther south was the home of the Indians which Coronado and contemporaneous writers described to us in 1542. The ledges of flint grow less and less as you come up the Blue river from the vicinity of Manhattan, until it is found at Holmesville, at a depth of ten to twelve feet below the level of the Blue river valley. Undoubtedly exploration will reveal the fact that Indian village sites containing this particular type of rudely chipped implements will be found more and more frequent as you go down the Blue river towards Manhattan. Slight traces of the same debris are found near Beatrice; a systematical search (which will be prosecuted by team next summer) may reveal many sites similar to the Hollingworth site.

This site contains what I have designated as "the Quivera" type of chipped flints, only. They are rougher and more rudely chipped than any found in this state before. They resemble in some ways the Nehawka specimens; they differ materially from them in more ways; they are so similar to the implements found in Kansas, south of Manhattan, that I must class the village as belonging to the same people. I can not use space to describe the conditions as I found them during my week's visit to the Kansas field in company with Hon. J. V. Brower of St. Paul, Minn., but

you shall have a complete account of that trip later.

There is no pottery to be found on this site; shells are quite numerous but badly wasted away. In the Conservative of Nov. 14, 1901, plate III, number 20, you will find illustrated a knife very similar to knives found here. Many of the implements found in the brief half day of my visit to the Hollingworth site, were broken.

Could one make a systematical search, covering every foot of ground, after a fresh plowing, followed by a hard, dashing rain, he would be able to carry away a thousand perfect specimens in a week. In a brief walk over the site one may determine the class to which it belongs and the implements likely to be found, but the matters for careful, comparative study are met later. These nomadic tribes met other wandering bands with whom they trafficked and fought, with whom they associated and, I suspect, inter-married; if you should visit all the houses, one after another, in a certain precinct, during the absence of the owners, and, from study of the implements and utensils found, classify the owners as to nationality, you would find many errors in your list, if your trip was a cursory one; but if you examined carefully every article in each house, and, side by side, compared it with every known article, implement or utensil used by each nation, you would make few errors if your work was exhaustively completed. I can tell you only what types I have found here, at this time; I can give you an opinion as to the people, but it is in no way final; new developments may change it all.

I found blades here which correspond very well with numbers 14, 16 and 18 of the Conservative illustrations. A few specimens of scraper, much ruder, but of the same type as 19 were found. The variety differing from the specimens illustrated in The Conservative, may be found illustrated in Mr. Brower's memoir "Harahey" and there described by him. They are found in the "Quivera field" in Kansas. Here we see some of the effects of association; the people of this site had implements like the people once living in Kansas and like the people who once lived on the Weeping Water in this state; this village site is between the two and forms a link in the chain of evidence proving that the people of both sites associated with the people of the Hollingworth site, and that the Weeping Water people and the Kansas river people were contemporaneous. If this ground can be successfully maintained, we are much nearer a solution for some of the vex questions in Nebraska archaeology.

The people of the Hollingworth site resembled the people of Kansas (Wichitas) more than the people of the Weeping Water. There is an individuality in the chipped flints of any people, which is hard to describe and which can hardly be sensed in one or two pieces, but is very pronounced when a mass of implements is brought together, along with cores and spalls; this individuality sways my judgment more than any point of similarity. It is shown by the general manner of taking off a chip, a general direction of fracture, general size of implements and similarity of breakage which shows the implements broken to have been subjected to the same tests in use or stroke in making. All these points must be taken into ac-

count in classifying a village site. These people were at least closely related to the Wichitas and may have been a band belonging to Coronado's Quivera.

One very numerous specimen found is the chipped celt, which has never been found in this state before. This celt is shaped like a pear leaf and is so thick that a cross section, through the middle from end to end, would form a circle. I found a very fine tomahawk resembling the "Quivera tomahawk" of Kansas. The typical hoe of the Wichata people is very numerous.

The Union Pacific station agent at Holmesville is very much interested in archaeology; it is through the kind assistance of this gentleman, Mr. A. O. Hollingworth, that we are able to tell you so much about this site.

We hope to hear from people in the southeastern part of the state who may know of similar sites, and thus we will be armed with data for a good month's work along the Blue in the early spring.

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### SCIENTIFIC MISCELLANY.

The tidal bore of the Severn has been photographed for a linematograph, and a most impressive phenomenon has been thus reproduced on a screen.

The solid matter deposited by a London fog has been found by Sir W. Thistleton-Dyer to reach six tons in a week on a single square mile. Injurious hydrocarbons were included, as well as soot.

The blood pressure in lunatics has been measured by two French physiologists. They find a distinct connection between the blood pressure and mental troubles, and that there is also a change in the blood pressure corresponding to different states of mind in the same patient.

That the north magnetic pole revolves about the geographical pole along the seventieth parallel of latitude is the theory of a French physicist, who maintains that his theory explains the observed variations. As a cause he suggests a lagging of the earth's center, which must be liquid or viscous, behind the crust in the revolution toward the east.

The fall of red dust that covered most of Europe a few months ago is proving unexpectedly useful. Meteorologists had proposed coloring parts of glaciers so that their movements might be more apparent, and the dust storm has supplied the desired colored stratum and made it practicable to observe the movement and fracture of the glacial surface on a scale much grander than could have been attained by artificial means.

As the five great scientific discoveries of the nineteenth century, Sir William Preece mentions—the principle of evolution; the atomic structure of matter; the existence of the ether and the undulatory theory of light; the principles of electro-magnetic induction and electrolysis; and the principle of the conservation of energy. At the beginning of the twentieth century the trend of research is to prove that the basis of all matter is