All the animals are either red or white. The Bear is red, for instance. That's why one must tell him, "I am red," if one meets him.[7] Everything red is red people; everything white is white people.

The term vĭ'mĭgaR [cross-cousin] is not used by itself for the moieties. One does say, "coyote cross-cousin," or "buzzard cross-cousin." But one does not address this way, or with the word "cross-cousin," a member of the opposite moiety. The terms are terms of respect which one uses if he speaks about the other moiety; they refer primarily to Coyote and Buzzard, and then to their people, who are the two moieties.

Vanyiko's explanation of the use of the term "cross-cousin" for the moieties went back to the Creation myths. After the Flood, the Creator, Elder Brother, and Coyote have a discussion about which of them emerged from the Flood first, and should thus be considered senior. Coyote's claims are dismissed, but the two other protagonists tell him: "All right, you'll be our cross-cousin!"

The moieties—or the gentes—did not have anything to do with ceremonies or dances: they were all mixed up. In war they were all mixed up. A moiety or gens did not own any stories that the other moiety or gentes could not tell. There was no office for which people of a certain moiety or gens had to be chosen. It just happened that the last chiefs were all from the Buzzard people, as the office happened to get into the Azul family, who are Buzzard people. There was never a rule that people of one moiety had to be buried by people of another moiety.[8]

Olson's study of clans and moieties gives under "Concepts adhering to moieties" the following entry for the Pima and Papago: "Red side linked with earth, white side with underworld."[9] To my knowledge, the only pertinent item in the literature is Russell's reference to the migration legend: "The Red People are said to have been in possession of the country when Elder Brother brought the White People from the nether world and conquered them. . . ."[10] The legend, however, speaks of the five Pima gentes all emerging together. At any rate, the association seems very vague and tenuous, and is so in Pima thinking; so that it is hardly justifiable to speak of a "concept" associated with the moieties on the basis of this evidence.

GEORGE HERZOG

YALE UNIVERSITY
NEW HAVEN, CONN.

AN ADDED NOTE ON THE SCOTTSBLUFF QUARRY

The recent progress in the study of the Folsom complex (see, for example, Roberts, Howard, Antevs, and others) has contributed much new information on the subject.[1] It is in the light of this additional knowledge, and in the endeavor to keep

[7] See Russell, p. 262.

[8] The statements in this paragraph were all in answer to my questions.

[9] Ronald L. Olson, Clan and Moiety in Native America (University of California Publications in American Archaeology and Ethnology, Vol. 33, No. 4, 1933), p. 402.

[10] See Russell, p. 197.

[1] Besides Dr. Roberts' more recent unpublished material, and the as yet unpublished geological studies of the Lindenmeier site made by Dr Kirk Bryan.

the record as free from inaccurate details as possible, that we wish to offer a few short comments on our previous paper in the AMERICAN ANTHROPOLOGIST.[2]

It has become evident from excavation at Fort Collins, Colorado, that true Yuma blades are almost entirely lacking at this site.[3] In addition, definite occupation levels revealing Yuma artifacts and "Folsom-like" points[4] completely lacking grooves have since been discovered in old deposits in western Nebraska. Flint from the latter sites, deeply buried under what appears to be a Pleistocene lake bed, is similar in composition to that from the Scottsbluff bison quarry (whose flint was not of a very common texture for that neighborhood) and would seem to add supporting evidence that the latter quarry is not a fluke of redeposition.

One of the points from the new site is to be featured by E. H. Barbour and C. Bertrand Schultz in a paper now going to press.[5] It is similar to what Renaud has classified as Yuma type 2b. This finely worked, but ungrooved "Folsom"[6] blade suggests that what the writers assumed, in their report on the Scottsbluff quarry, to be merely an atypical and unfinished Folsom blade (lacking the groove) is actually an ungrooved *stage* of Folsom type development, accompanied by typical Yuma points. Since Dr Roberts has found, so far, but one true Yuma blade at the Fort Collins site, it would seem that, though undoubtedly related, the grooved Folsom blades *do* bear some time sequential relation to the Yuma type. In other words, if they are related, as they seem to be, our assumption of more or less exact contemporaneity for Yuma-Folsom artifacts[7] should be changed to a statement of only partial contemporaneity. As to which may precede the other the tendency among archaeologists the last few months has been to assume that the Yuma type is a later—even late—innovation within the Folsom complex. However, the new Nebraska finds, which suggest extreme antiquity, may reverse the sequence again in favor of a more ancient dating for the Yuma types, as Renaud has long suggested. All that the writers wish to suggest at the present moment is that there seems not to be an *exact* contemporaneity, and that these "Folsom-like" artifacts without grooves[8] seem

[2] C. Bertrand Schultz and Loren Eiseley, Paleontological Evidence for the Antiquity of the Scottsbluff Bison Quarry and its Associated Artifacts (American Anthropologist, Vol. 37, pp. 306–18, 1935).

[3] "The tip of a true Yuma" (Dr F. H. H. Roberts, Jr., *in litteris*).

[4] See footnote 6 below. Under Dr Renaud's system of classification these would all be Yuma types.

[5] Paleontological and Geological Evidence Relating To Yuma-Folsom Artifacts in Nebraska (Bulletin, Nebraska State Museum, No. 45, in press).

[6] We use quotation marks with this term because this type is regarded by Renaud as a classifiable Yuma blade. Certain of these more Folsom-like points are by others not yet admitted as true Yuma artifacts, and hence the utmost care is necessary to avoid confusion in terminology.

[7] Schultz and Eiseley, *op. cit.*

[8] They fall approximately into Renaud's Yuma types 2a and 2b, but would be what Howard has designated Folsom-like except that they lack even a trace of a groove. It is, however, possible, judging from points in collections in the vicinity, that when the new sites are fully excavated, true Folsom-like points as defined by Howard in "Evidence of Early Man in

definitely associated with true Yuma blades. But the new and extensive sites to be excavated in the coming season promise to throw much light on the problem. Further remarks at this time would be pure conjecture.

The bison problem is another upon which we should like to offer comment. It has been suggested by Mr J. D. Figgins[9] that there is a mixture of *Bison oliverhayi* with *Bison bison* at the Scottsbluff site, as well as an accompanying "modern" artifact.[10] Leaving aside all mention of the highly improbable nature of such a coincidence and the tendency to minimize certain points which we made in regard to skeletal articulation, we should like to point out:

First, that the so-called "modern" point has never been definitely shown to be a product of any associated recent site, and that, in addition, it bears certain characteristics which we have previously commented on, which take it out of the class of true notched points.[11]

Second, that the bison material (of which Figgins had access to only two specimens)[12] does not justify his claim that both *B. oliverhayi* and *B. bison* are mingled in the quarry. It is to be remembered that we provisionally referred these bison to *occidentalis* Lucas. Time has justified us in this caution. Later studies carried on through the generosity of Dr Barnum Brown and the American Museum of Natural History, who allowed the Nebraska State Museum access to the original Folsom bison, have shown that the male skull featured in our previous article resembles the Folsom skulls.[13]

Most of the skulls from the Scottsbluff Bison Quarry were those of females, along with several from immature individuals. These female skulls also resemble those of the same sex from Folsom. All of this will be sufficiently discussed in the forthcoming paper by Dr Barbour and Mr Schultz. Our purpose here is merely to indicate that the more recent and intensive studies of the Scottsbluff bison quarry justify the reclassification of these animals as *Bison antiquus taylori*. It is a well established point of paleontology that the promiscuous naming of different species out of a single quarry, particularly from one possessing an obvious age-range in individuals, is a highly dubious procedure.[14] In such forms as the American bisons, where identifica-

North America" (Museum Journal, Vol. 24, 1935, Philadelphia), p. 112, may yet appear. The reader must realize that we still possess too few specimens to generalize with surety.

[9] J. D. Figgins, Folsom and Yuma Artifacts, Part II (Proceedings, Colorado Museum of Natural History, Vol. 14, No. 2, 1935), p. 7.

[10] Found, incidentally, six feet back from the face of the bank.

[11] Tanged points made their first known appearance in the late Mousterian of Europe. This is not said with any idea of comparison, but it is sufficient to indicate that, in itself, a tang is no guarantee of modernity!

[12] One of which he designated as *B. oliverhayi*.

[13] Dr E. H. Barbour and Mr C. Bertrand Schultz have gone into this in great detail, with tables of comparative measurements, in their forthcoming paper. The appellation *antiquus* is a change in nomenclature, not a reassignment of species, to adjust to the established priority of *antiquus* over *occidentalis* as a specific name for the southern bisons of this type.

[14] W. D. Matthew, Critical Observations on the Phylogeny of the Rhinoceroses (University of California Publication, Bulletin, Department of Geological Sciences, Vol. 20, No. 1,

tion is strongly dependent upon the securing of adult male specimens,[15] the writers do not feel that identifications can be multiplied on such a basis as that suggested by Figgins.

In summary, the writers would merely say that the extensive new site from beneath a possible Pleistocene lake bed, already examined by competent authorities, and a preliminary report of which has been given at the meeting of the American Paleontological Society in New York recently, should go far to justify their assertions of the antiquity of the Scottsbluff quarry. They believe also that some sort of sequential relationship between Yuma and Folsom types now seems definite, but which is the earlier, and the part played by the Folsom-like forms, is still a subject for investigation. In addition, we take exception to calling one point "modern" simply because it is not typical of what has come to be considered as Yuma. This seems highly questionable in view of the unknown nature of a vast complex recognized from only one large excavated campsite to date. As for the geology of the Scottsbluff site, its undisturbed nature is attested to by Dr Paul MacClintock of Princeton, who examined the site during the past summer.[16]

Mr Figgins, it is true, makes some point of our reference to chunks of Tertiary sandstones and clays as "supplying adequate proof of redeposition."[17] If this were true these fragments should be indiscriminately deposited from top to bottom; a point which is sufficiently disposed of in our previous paper, as is easily seen by referring to the photograph (fig. 1) therein. Since Mr Figgins was not of the party that excavated the site and has had access only to the specimens to which we have referred, we find it difficult to discover on what basis he so confidently implies that all the articulated material in the quarry is to be attributed to the inclusion of modern bison "inextricably associated with the extinct *oliverhayi*." It is our opinion that this sort of hair-splitting over individual variation could be invoked over any bison quarry which happened to contain numbers of individuals of both sexes and all ages.

The writers are quite willing to rest their case on the forthcoming developments to which they have referred, and merely urge a careful and fair approach on the part of the reader through what must often seem a mass of conflicting detail. A whole new situation in American archaeology can hardly be clarified, nor its ramifications seen, in a few months' time.

C. BERTRAND SCHULTZ
LOREN C. EISELEY

NEBRASKA STATE MUSEUM
LINCOLN, NEBRASKA

p. 6, 1931); Range and Limitations of Species as Seen in Fossil Mammal Faunas (Bulletin, Geological Society of America, Vol. 41, pp. 271–74, 1930).

[15] Tooth structure has so far proved of questionable value in the identification of the bisons of the late Pleistocene.

[16] Paul MacClintock, Report in the 1935 Year Book of the Carnegie Institution of Washington, D. C. (in press). See also A. L. Lugn, The Pleistocene Geology of Nebraska (Bulletin, Nebraska Geological Survey, No. 10, 1935), p. 188.

[17] J. D. Figgins, Folsom and Yuma Artifacts (Proceedings of the Colorado Museum of Natural History, Vol. 13, p. 3, 1934).