

The Identification of a Sample of Unmodified Faunal Remains from the Angel Site

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The ultimate purpose of this study is to determine the relative numbers and types of fauna utilized by the aboriginal inhabitants of the Angel Site. After the proper identification of the faunal remains, the food habits of the occupants and the relative economic importance of each species can be determined. The climate and flora at the time of occupation are indicated by the type of faunal remains present and past ranges of various species could be revealed in making a comparison with present day fauna and flora.

The materials used for this study consisted of three packing cases of unmodified (unworked) faunal remains from the Angel Site in southern Indiana. The bone material excavated from the site had been washed, catalogued, and sacked according to Division, Subdivision, Block, and the vertical level in which it was found. Remains from more than one Subdivision were identified and an areal distribution comparison is therefore possible. Material from four one hundred foot squares: Subdivisions W10D, W11B, X11C, and X11D was used in the study.

The identification of the remains from the site was accomplished by making a comparison of the unknown material to the known material in the Indiana University Ethno-zoology Laboratory collection. In the confirmation of particularly difficult specimens, I was assisted by Mr. Wm. Richard Adams, who has collected and prepared the known material in the collection.

The skeletal remains from each Subdivision were first identified by biological Class. Remains which were too fragmentary and had no distinguishing markings for proper identification were not included in the count. Remains which were in an identifiable condition but could not be positively identified because of lack of comparative material were classified as unidentified.

The Class Mammalia was further broken down to the order of respective species since over 90% of the remains were those of mammals. The absolute and relative values of the frequency counts were then put into tabular form. Both an areal distribution count and a total count of the combined Subdivisions were presented.

By utilizing certain readily identifiable bones, a frequency count was made on the *Odocoileus virginianus* remains in order to determine the approximate number of individuals of this species which were represented in the total sample. The frequency study was taken on individual Subdivisions and on the total occurrence of each representative bone. By applying this method, a minimum number of individuals of the species can be determined.

The frequencies of the unmodified faunal remains per Subdivision are presented by Class in Table 1. 1,937 bones (90.5%) of the total material identified were of the Class Mammalia. Subdivision W10D showed the lowest relative frequency of mammalian material (84.6%), while Subdivisions X11C and X11D showed the highest relative frequency (100%) in this Class. The extremely high relative frequencies in the two

TABLE 1
Absolute and Relative Frequencies of Unmodified Faunal Remains
(Non-human) Per Subdivision by Class

	W10D	W11B	X11C	X11D	Total
Birds	76	83	0	0	159
Fish	11	17	0	0	28
Reptiles	12	2	0	0	14
Mammals	542	952	409	34	1937
Unidentified	0	2	0	0	2
Total	641	1056	409	34	2140

	W10D	W11B	X11C	X11D	Total
Birds	11.9%	7.9%	0.0%	0.0%	7.4%
Fish	1.7%	1.6%	0.0%	0.0%	1.3%
Reptiles	1.8%	0.2%	0.0%	0.0%	0.7%
Mammals	84.6%	90.3%	100.0%	100.0%	90.5%
Unidentified	0.0%	0.2%	0.0%	0.0%	0.1%
Total	100.0%	100.2%	100.0%	100.0%	100.0%

latter Subdivisions are most probably due to an inadequate sample of representative material. Wm. R. Adams (M.A. Thesis, 1949) found a relative frequency of only 51.7% mammalian material in a sample of 729 specimens from Subdivision X11C (his lowest relative frequency). A larger proportion of reptile (turtle) material was present in Subdivision W10D (1.8%) than in W11B (0.2%).

Tables 2 and 3 present the breakdowns of the Class Mammalia into absolute and relative frequencies. All four Subdivisions are represented

TABLE 2
Absolute Frequency Count of Mammalian Faunal Remains Per
Subdivision and of Total of Four Subdivisions

Species	Subdivision				
	W10D	W11B	X11C	X11D	Total
1. <i>Canis familiaris</i> —Domestic Dog	6	13	0	0	19
2. <i>Canis latrans</i> —Coyote	1	1	0	0	2
3. <i>Castor canadensis</i> —Carolina Beaver	0	16	0	0	16
4. <i>Cervus canadensis</i> —American Wapiti	1	6	0	0	7
5. <i>Didelphis virginiana</i> —Opossum	3	16	0	0	19
6. <i>Euarctos americanus</i> —Black Bear	2	2	0	0	4
7. <i>Felis cougar</i> —Adirondack Cougar	1	0	0	0	1
8. <i>Lynx rufus</i> —Bay lynx	3	0	0	0	3
9. <i>Marmota monax</i> —Southern Woodchuck	2	2	0	0	4
10. <i>Mephitis mephitis</i> —Striped Skunk	0	1	0	0	1
11. <i>Odocoileus virginianus</i> —Virginia Deer	483	778	409	34	1704
12. <i>Ondatra zibethica</i> —Muskrat	0	2	0	0	2
13. <i>Procyon lotor</i> —Raccoon	10	62	0	0	72
14. <i>Sciurus carolinensis</i> —Gray Squirrel	5	29	0	0	34
15. <i>Sciurus niger</i> —Fox Squirrel	23	23	0	0	46
16. <i>Sylvilagus floridanus</i> —Cottontail Rabbit	2	1	0	0	3
Total	542	952	409	34	1937

TABLE 3
Relative Frequencies of Mammalian Faunal Remains Per
Subdivision and of Total of Four Subdivisions

Species	Subdivisions				Total
	W10D	W11B	X11C	X11D	
1. <i>Canis familiaris</i> —Domestic Dog	1.1%	1.4%	0.0%	0.0%	1.0%
2. <i>Canis latrans</i> —Coyote	0.2%	0.1%	0.0%	0.0%	0.1%
3. <i>Castor canadensis</i> —Carolina Beaver	0.0%	1.7%	0.0%	0.0%	0.8%
4. <i>Cervus canadensis</i> —American Wapiti	0.2%	0.6%	0.0%	0.0%	0.4%
5. <i>Didelphis virginiana</i> —Opossum	0.6%	1.7%	0.0%	0.0%	1.0%
6. <i>Euarctos americanus</i> —Black Bear	0.4%	0.2%	0.0%	0.0%	0.2%
7. <i>Felis cougar</i> —Adirondack Cougar	0.2%	0.0%	0.0%	0.0%	0.1%
8. <i>Lynx rufus</i> —Bay Lynx	0.6%	0.0%	0.0%	0.0%	0.2%
9. <i>Marmota monax</i> —Southern Woodchuck	0.4%	0.2%	0.0%	0.0%	0.2%
10. <i>Mephitis mephitis</i> —Striped Skunk	0.0%	0.1%	0.0%	0.0%	0.1%
11. <i>Odocoileus virginianus</i> —Virginia Deer	89.1%	81.7%	100.0%	100.0%	87.9%
12. <i>Ondatra zibethica</i> —Muskrat	0.0%	0.2%	0.0%	0.0%	0.1%
13. <i>Procyon lotor</i> —Raccoon	1.8%	6.5%	0.0%	0.0%	3.7%
14. <i>Sciurus carolinensis</i> —Gray Squirrel	0.9%	3.0%	0.0%	0.0%	1.8%
15. <i>Sciurus niger</i> —Fox Squirrel	4.2%	2.5%	0.0%	0.0%	2.4%
16. <i>Sylvilagus floridanus</i> —Cottontail Rabbit	0.4%	0.1%	0.0%	0.0%	0.2%
Total	100.1%	100.0%	100.0%	100.0%	100.2%

by high frequencies of *Odocoileus virginianus* remains (81.7—100%). Here again, however, the 100% frequencies in Subdivisions X11C and X11D are due to inadequacy of sample size. All the *Castor canadensis* remains were found in Subdivision W11B. The comparatively high frequency of *Didelphis virginiana*, *Procyon lotor*, and *Sciurus carolinensis* in W11B as compared with W10D may also be of some significance as well as the higher frequency of *Sciurus niger* in Subdivision W10D.

Table 4 shows a frequency count of the *Odocoileus virginianus* remains per type per Subdivision. It is from this table that the Type and Subdivision minimums have been determined. From the table it is quite evident that the Type total minimum is ninety-two individuals since

TABLE 4
Frequency Count of *Odocoileus virginianus* Remains
Per Type and Subdivision

Type of Remains	Subdivision				Type Minima
	W10D	W11B	X11C	X11D	
Right Proximal Humerus	4	4	3	0	11
Right Distal Humerus	28	41	22	1	92
Left Proximal Humerus	5	3	6	0	14
Left Distal Humerus	23	24	20	1	68
Right Proximal Femur	9	9	4	0	22
Right Distal Femur	7	10	7	0	24
Left Proximal Femur	5	3	4	1	13
Left Distal Femur	14	5	10	2	31
Minima per Subdivision	28	41	22	2	
Minimum per Total of Subdivisions					93
Minimum Determined by Most Frequent Type					92

ninety-two right distal humeri were present. The minimum number of individuals as calculated by the minimums per Subdivision totals ninety-three. This total, however, is made on the assumption that each individual is represented in one and only one Subdivision and therefore may be inaccurate.

Although the aboriginal inhabitants of Angel Site were primarily dependent upon agriculture for subsistence, a relatively high utilization of mammalian fauna in their economy is indicated. In addition to the mammalian fauna, the inhabitants made some use of the readily available birds, reptiles, and fish. A complete study of the diet should, of course, also include a statement to what extent molluscs were utilized. A preference for, or perhaps the greater availability of larger game is indicated by the high proportion of *Odocoileus virginianus* remains.

Although the difference in frequency of beaver and reptile remains in Subdivisions W10B and W11B may seem to be indicative, a specialization of hunters (or fishermen) is not significantly indicated by the sample. A larger, more representative sample should reveal more evidence to be considered. According to the sample studied here, there is no indication that areal differences in frequencies have any statistical significance.

Literature Cited

- ADAMS, WM. RICHARD (1949). *Faunal Remains from the Angel Site*. M.A. Thesis. Indiana University. (unpublished).