Reviews

REINDEER AND CARIBOO HUNTERS: AN ARCHAEOLOGICAL STUDY. By ARTHUR E. SPIESS. New York: Academic Press, 1979. 336 pp. $25.00.

Arthur Spiess presents an environmentalist's approach to reindeer and caribou hunters. He elaborates on interaction of culture and environment using ecology, history, ethnology and archaeology both from library and personal sources. His world-wide survey of the literature gives a broad if not comprehensive base to his interpretations while his own research attests to his personal commitment to his study.

Since the book is a specialized study on caribou/reindeer, I was hoping that Spiess would clarify once and for all caribou/reindeer size terminology. He does fairly well. However, his use of the term "herd" for the caribou/reindeer "populations" of the world — Canada's barrenlands, Labrador/Ungava, Alaska and Siberia (Chapter 2) is confusing. His equating herd with population (e.g., in the Kaminuriak range — p. 40) is not wise and something in which I also erred in my 1975 publication. The Canadian Wildlife Service's use of the term "population" as the maximum breeding unit appears more definitive. The use of the term "sub-herd" instead of band might help minimize confusion with human bands in hunting societies. Herds are larger units within the population and are equatable at times with aggregate (e.g. post-calving aggregation of 1000-5000 animals, (Parker, 1972:30).

It is unfortunate that Spiess is weak in some of his interpretations of reindeer behavior, as the habits of the prey play such an important part in habits of their hunters. Spiess' deduction that caribou are "stupid" (p. 138) compared with other deer is an unproven, oft-repeated statement probably deriving from caribou's collective consciousness and curiosity. Much of caribou behavior is related to dominance achievement, calf survival, seeking of better forage and safety in numbers. For its adaptation to the seasonally diverse environments of the barrenlands *and* forest, it is unique. There is no substantiation for the statement (pp. 31, 32) that caribou migrate long distances if forced to do so by widely separated seasonal forage areas. Long distance migrations more likely relate to calving ground location and its importance to calf survival. Repeated annual migrations to the same distant calving ground through regions where the forage is not necessarily better, support this interpretation. Most caribou calving grounds are high, dry, rocky, and windy areas of the open tundra and as Spiess says (pp. 41, 235) they offer some shelter from the wind for calves. Perhaps more importantly, the calving grounds provide an element of dryness and relative freedom from the three major predators of of caribou — man (usually too remote), insects (not yet mature this far north), and wolves (usually the bitches are pupping farther south). He does not clearly state that caribou rut along the treeline and within the forest but says (p. 235) "they prefer open country for their rut".

Spiess has oversimplified my discrete band - discrete herd hypothesis (Gordon 1975) to a one band — one herd theory (p. 175). About 94% of the Kaminuriak caribou population is observed to remain with their group (i.e. discreteness) even though this population shares wintering ground with the Beverly population (Parker, 1972). This sociological and genetic discreteness undoubtedly facilitates the conservatively maintained migration routes observed historically (and inferred prehistorically). Sheer distances between caribou populations' migration routes tends to prohibit efficient preying upon more than one caribou population by one human band (except in the wintering area) at one time. The dependence of a group primarily on one population tends to help maintain cultural separation between human groups preying on different caribou populations. That different groups prey upon the same caribou population is not incompatible with the discrete band - discrete herd hypothesis. The Victoria Inuit, for example, hunted the Bathurst caribou population (Kelsall 1968:125, 220) while the Yellowknife Chipewyan hunted the same population later in the year. In some cases, e.g., winter range, when both caribou and humans disperse, human bands as well as caribou herds overlap territory. Ethnographic data support "the association of regional bands with herds, migratory routes, and foraging ranges. . ." (Smith 1978:71, 1975:416-421, 450). Smith (1978:69) also feels "there is evidence, however, that the basic strategy described here has persisted from aboriginal times."

When one is analyzing the relationships of interacting multiple characteristics using the scientific method, one method is to keep certain characteristics constant while others are varied. Another approach is to study the simplest types of relationships, i.e., where the characteristics vary conservatively. Such a situation exists in the barrenlands of Canada, but may not exist in many other parts of the world that Spiess alludes to. Characteristics such as barrenland terrain, climate, forage and plant communities have varied more gradually than in most other places and have changed little since deglaciation. Thus their influence

upon caribou and man has likely not varied appreciably.

Spiess feels you cannot assign archaeologically observed limited attribute differences between migration corridors as resulting from separation of human bands through discrete caribou populations. He believes that attribute differences are due to the sheer size of the barrenlands. However, physical and environmental differences across the barrens vary little, and adjacent caribou ranges exhibit striking differences in Arctic Small Tool Tradition tool attributes while some attributes in distant and unconnected ranges are similar.

It is interesting coincidence that archaeological survey in the Northwest Territories has brought to light many sites (about 600) along the historic Beverly migration corridor while in areas between caribou migration routes extremely few sites have been found. Corridor sites include seven sites with three to seven levels (all radiocarbon dated) and most have all four barrenland traditions present: Northern Plano Agate Basin (from deglaciation to 4500 B.C.), Shield Archaic (4500 - 1700 B.C.), Arctic Small Tool Pre-Dorset (1500 - 700 B.C.) and Taltheilei (600 B.C. to historic period Chipewyan). Boundaries between ranges, based upon human occupation, have changed little. Indead, caribou continue to migrate through the archaeological sites and their arrival can be predicted within a few days.

Spiess gives an interesting review of communal hunting, including labour requirements for game drives. Not mentioned in his book and only briefly covered in the literature (Gordon 1975) is the interception ridge. Caribou are usually taken at water crossings, in snares and in corrals. North of the treeline, bare ridges are utilized as follows: inukshuit (stone piles), brush piles or even simple shallow rock alignments (a few inches high) serve to channel caribou along a ridge to a series of hunting blinds made from upturned sandstone slabs. Often these slabs are pockmarked and have quartzite chips at their base. Experiments by my crew have shown that caribou are easily attracted by the ringing of quartzite cobbles on sandstone slabs or the clicking sound of striking pebbles together which simulates ankle sounds in walking. Visual attractants include stone piles, rock alignments and blinds. The normally curious caribou will approach within arrow or spear thrust.

On p. 138, Spiess mentions Burch's article (1972) on the Chipewyan wherein he stated that they were unable to follow the Kaminuriak population. At the Canadian Archaeological Association annual meeting in Ottawa in 1977, Burch refuted his earlier article and mentioned that the Chipewyan indeed followed the Kaminuriak population some 400 km (one-way), later adding that they followed the Beverly population some 450 km (one-way).

Spiess has made a good point on the impossibility of reindeer herding with reliance only on foot mobility. He (p. 137) maintains that "reindeer domestication existed as a hunting aid before it became a self-sustainable livelihood." His survey of the literature has, however missed a number of opinions on time of domestication. He (p. 136) states that "intensive close-herding reindeer husbandry has been practiced in the Old World in limited areas of northern Scandinavia, Northwest Asia and Siberia for the past 400-500 years . . . its development was fostered by overhunting of wild reindeer within the past 300-400 years." Ingold (1974) concurs, suggesting fairly recent development for reindeer domestication. He (Ingold 1974) mentions that "among the Lapps, reindeer pastoralism was a relatively recent response to increased pressure on wild deer stocks." Zeuner (1963:126), however, feels that "the now well-known kurgans of Pazaryk (Altai) have provided indirect evidence for the riding of reindeer in the first millenium B.C. (and) herding must have started much earlier." The Altai horse with its antlered mask "regarded as a very superior sort of riding reindeer" (Zeuner, op. cit.) may have been misinterpreted. However, Gromova (1930 — referred to in Semenov-Tyan-Shanskii 1948:2) mentions "the earliest historical reference to domesticated reindeer in Europe (Norway) appeared in the ninth century." Spiess might have discussed the early French article of Saint-Périer (1920) and the very recent article by Bahn (1976), even if he may not agree with the ideas of Paleolithic reindeer domestication.

Spiess (p. 248) claims "it is a generalization that in the ethnographically known interior North American arctic and sub-arctic adaptations, macroband gathering only occurred during the cold seasons in some groups practicing large-scale caribou-drive adaptations." This overstatement implies large hunts prior to or during the cold season. Spiess (p. 221) seems to exclude the Montagnais as communal hunters due to their microband (about 20) size in winter. He also does not consider large aggregates of subarctic populations at seasons other than winter. In fact, large groups occurred at all seasons in different parts of the North American continent. Klo-Kut, a massive Kutchin camp, was heavily occupied in the spring (Morlan 1973: 441). Along the treeline to the north, late

summer and early autumn caribou fences for communal hunting are found in Old Crow Flats, Yukon Territory. In the barrenlands of Canada, the largest and deepest stratified sites were occupied in the summer (July) when the main Beverly migration south had just begun. Using the 600 sites in the Beverly migration corridor, we found that sites become smaller progressively towards the south — just as the population also fractionates. Site and caribou distribution spread fanlike towards the winter range. To use Hearne's statement that large groups of Chipewyan utilized winter corrals (Spiess, p. 248) as symbolic only of winter macrobands is unfair to Hearne. Very likely these corrals and fences were erected in the late fall prior to the rut and maintained as long as the animals caught were utilized.

Spiess emphasizes the study of French reindeer during the Aurignacian period of the Upper Paleolithic as embodied in the site of the Abri Pataud. Thus, issues bearing on reindeer speciation need clarification. For example, while discussing Burch's acceptance of two of Bouchud's multiple species of French reindeer (p. 137), he does not note François Delpech's interpretations, although he quotes her thesis in the bibliography. Delpech, using thousands of reindeer bones, suggests that most of Bouchud's multiple species really represent variations in nutrition due to climate and forage. She also suggests reduction of Bouchud's species to two.

A number of conclusions about utilization of reindeer at Abri Pataud are made from scanty evidence. Spiess (p. 185) mentions "there is no evidence of large-scale drives or slaughters". Logically, any large-scale drives and slaughters would have occurred outside the abri and large quantities of bone may have been strewn along the river banks rather than taken to the shelter. Studies there have not been undertaken. Also, he states (p. 185) that "demographic study suggests that the reindeer were killed in age-sex proportions statistically indistinguishable from the fall rutting population of the Nelchina (Alaska) herd. . .". However, according to Bos (1975), Nelchina autumn age-sex proportions differ. Furthermore, natural and harvested proportions would, in my opinion, seldom overlap. Nor have archaeological studies been undertaken in the area below the Abri Pataud next to the Vézère River where the highway and railway tracks are situated.

Spiess (p. 247) is premature in stating that "we would not expect macroband-sized human groups dependent on caribou drives in the early Upper Paleolithic of southwest France." The occupants of the Abri Pataud and other shelters in the Vézère and Dordogne valleys may have communally hunted at least once per year, but it will take a large scale synthesis involving many sites before this is proven or disproven. Spiess has overgeneralized his information drawn from his suggested winter occupation of only one site.

Spiess uses dental eruption and annuli (growth rings on the root), plus foetal bone, to evoke time of death of the reindeer and hence season of human occupation. He utilizes bone to infer minimum number of individuals killed and from this he infers man-days of site occupation. Calculation of the age of reindeer is based on a mid-May calving time (pp. 75, 187), although most cariboo of North America calve largely in June, with a peak for the barrenland herds during the second week (Parker 1972:28). To choose the calving and rutting period (*ca.* Oct. 15), of 15,000 year-old reindeer is a tricky but necessary exercise if one is to manipulate site seasonal data. However, several weeks difference is not going to suggest radically different seasonal occupations. In a similar vein, his double conversion from foetal longbone size to foetal hindfoot length to approximate date of death, magnifies his assumptions, but will not alter his inferred winter occupation of the Abri Pataud. He assumes: (1) that foetuses can be aged to within a month using longbones — that hindfoot length is a good determinant of foetal age; (2) that calving and rutting periods are known; and (3) that his 17 foetal longbones are from reindeer (p. 187). If species isn't self-evident, how can he safely convert to hindfoot length? He bases his conversion on Kelsall's (1957) data utilizing only 4 foetuses, suggesting that since cattle foetal growth approximates a straight line, that reindeer do also. However, the data used to support his correlation between hindfoot and diaphyseal lengths do not come from foetuses. Spiess has adequately supported the winter occupation of the Abri Pataud. That he delved into approximating the age of foetal bone to the day appears to me to be circuitous and unnecessary.

In addition to estimating site seasonality using foetal bones, Spiess (p. 191) also used dental cementum annuli. Numerically, he was quite unsuccessful in the technique (11 of 171 teeth). However, his 11 specimens consistently pointed to a winter occupation, as did his foetal bone, antler shedding and tooth eruption sequence. We have had different aging (but not seasonal) results in our estimation of caribou/reindeer age using cementum deposition in premolars of the Kaminuriak population. This sample of teeth taken by the Canadian Wildlife Service from sexed and aged slaughtered caribou were sectioned, polished

and studied under polarized and non-polarized transmitted light (latter to remove unwanted structures). We found that premolars begin cementum deposition and form one restline (dark band) *prior* to eruption. In our estimation, Spiess' animal (p. 169, 3rd paragraph) had seen its fourth rather than fifth winter.

Spiess used lithic inventories (pp. 222-223) and bone counts (Table 6.15) to establish man-days of occupation of the Abri Pataud. It is unfortunate that he compared Abri Pataud ungulate valley hunters' lithic inventories with those of Dorset sea mammal hunters. He cites as reason the dearth of published data on northern hunter-gatherers, but I suspect that the major reason for the dearth of information is that archaeologists are justifiably reluctant to utilize the concept of man-days because it is fraught with problems. An example of this is Spiess' Table 6-15, based on an average consumption of 3¼ kg. of meat per man/day for all levels.

Some omissions in Spiess' work are surprising. He mentions on p. 183, paragraph 6, the importance of "activity areas on living floors", yet ignores the most important article on this subject in France, if not in the world, — that of the study of Pincevent (near Paris) by André Leroi-Gourhan and M. Brezillon (1972). Randall White (personal communication 1979) drew my attention to Bouchud's (1977:147) finding of reindeer summer occupation within the Abri Pataud (opposite to Spiess' conclusion) and winter occupation just outside. Spiess' stressing of winter occupation of the Abri Pataud resulted in understressing late autumn occupation although he has mentioned it. Levels 2 and 3 had salmon bones and reindeer crania, the latter possibly yielding brains for hide-tanning as Spiess suggests. Salmon fishing and hide-tanning would strengthen the evidence for later summer occupation while teeth annuli and koetal long bones could support even an early spring occupation as foetal bones did at Klo-Kut, a major Athapaskan Kutchin caribou water-crossing in the northern Yukon Territory. Until we get some clarification of Bouchud's results inside and outside the Abri Pataud, we cannot answer the question of seasonality of the occupation.

Several small errors are obvious within the text. On p. 115 he mentions that the Chipewyan were pushed south in the barrenlands by the Caribou Eskimos. Actually, the Chipewyan retreated south due to heavy mortality from smallpox (see Hearne's journal), plus the attraction of better fur-bearing animals necessary to the fur trade. Nor should he apply the expression "canoe-based hunting" to the Chipewyan. While applicable to the Cree, the Chipewyan, as Hearne describes, used the canoe only to cross the rivers while on long foot treks.

Spiess, while taking a world-wide approach to reindeer and caribou hunters, does not give the impression of a universal knowledge of his topic. He has read much, but also missed a number of reports which would allow the reader to better evaluate current academic opinion. He also seems to lack some personal empathy with his topic, particularly with regard to caribou behaviour as it influences the hunters, and the shared environment of caribou and man. A condescension in his criticisms of many researchers detracts from the scholarly aspects of his work.

Throughout his book, Spiess presents some very clever insights regarding caribou/reindeer hunters and their environments. For example, the diversity of game at the Abri Pataud suggests the environment "was certainly not the boggy tundra or mossy forest-tundra of the modern arctic and sub-arctic (p. 254). In addition, his Appendix A covering the habits, preferred environments and hunting strategies of red deer, wild horse and ass, bison, auroch, boar, ibex and chamois within the Vézère valley is highly interesting — and probably testable in future. Appendix C covers caribou butchering techniques. While techniques have varied through the ages and many bones do not bear butchery marks, this appendix can act as a ready reference. Tables and figures are pertinent. In short, I find the book to be valuable and certainly worthwhile reading to northern and European Paleolithic archaeologists.

REFERENCES

BAHN, PAUL G. 1977. Seasonal Migration in South-west France During the Late Glacial Period. *Journal of Archaeological Science* Vol. 4. pp. 245-257.

BOS, G. N. 1975. A partial analysis of the current population status of the Nelchina caribou herd. Proceedings of the First International Reindeer and Caribou Symposium. 9-11 August, 1972, Fairbanks, AK. Biological papers of the University of Alaska. Special Report No. 1, September.

BOUCHUD, JEAN. 1977. Discussion in Chapter 3. *Approche Ecologique de l'Homme Fossile* (Henri Laville and Josette Renault — Miskovsky, directors). Université Pierre et Marie Curie, Paris.

GORDON, B.H.C. 1975. 1974 Thule Culture Investigation at Baker Lake, N.W.T.

Canadian Archaeological Association Annual Report, Bulletin No. 6.

———. 1977a. Temporal, pedological and archaeological separation of the Arctic Small Tool and Taltheilei traditions IN *Prehistory of the North American Subarctic: The Athabascan Question.* Proc. of the 9th Annual Chacmool Conf., University of Calgary.

———. 1977b. Chipewyan Prehistory (see above volume)

GROMOVA V.I. 1930. Mammal remains from a grave on Bolshoi Olenii Island. *Kol'skii sbornik.*

INGOLD, TIM. 1974. On Reindeer and Men. *MAN (n.s.)* 9:523-538.

KELSALL, J. 1957. Continued barren-ground caribou studies. *Canadian Wildlife Service, Wildlife Management Bulletin Series* 1:12.

LEROI-GOURHAN, A. and BREZILLON, M. 1972. Fouilles de Pincevent. Essai d'analyse ethnographique d'un habitat magdalénien. *VII^e supplément à Gallia Préhistoire.* Paris, C.N.R.S.

MORLAN, R.E. 1973. The Later Prehistory of the Middle Porcupine Drainage. *National Museum of Man, Mercury Series No. 11.* 583 pp.

PARKER, G.R. 1972. Distribution of barren-ground caribou harvest in north-central Canada from ear-tag returns. *Canadian Wildlife Service, Occasional Paper* No. 15. Ottawa.

SEMENOV-TYAN-SHANSKII, O. I. 1948. Wild reindeer in the Kola Peninsula. *Trudy Laplandskogo Gosudarstvennogo ZapoVednika.*

dE SAINT-PERIER, R. 1920. Les migrations des tribes magdaléniennes des Pyrénees. *Revue Anthropologique, 3(5-6).*

ZEUNER, F. E. 1963. A History of Domesticated Animals. Harper and Row.

(For other references in this book review, see Spiess' bibliography).

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EIGHT INUIT MYTHS/INUIT UNIPKAAQTUAT PINGASUNIARVINILIT. BY ALEX SPALDING. Ottawa: National Museums of Canada, 1979. (National Museum of Man Mercury Series, Canadian Ethnology Service Paper No. 59). 90 pages. Gratis.

Eight myths taken down in 1959 at Repulse Bay from Thomas Kusugaq, now deceased. They were taken down in the Aivilik dialect, except that some of the dialog is in the narrator's childhood dialect, Nassilik. They are given first in Inuktutin, with interlinear translations, followed by a smoothed-out English translation. The words of the interlinear translation are to some extent divided (by slashes) into their component morphemes and the translations are then (but again not completely) given for each segment. This is not an oversight on the part of Spalding. He tells us in the preface that he is not going to attempt a complete morphemic analysis. The author also deliberately refrained from giving translations for many of the regular paradigmatics — which is to be regretted.

No explanation of the orthography is given, other than the statement that he follows the accepted rule of the Inuit Cultural Commission that one spell the word as it sounds. One bit of spelling that may strike some readers as strange is the unexplained use of the ampersand sign; it apparently refers to the voiceless lateral. The use of *r* for fricatives is — regrettably in this reviewer's opinion — continued. The reason that this is to be regretted is that this has now almost become a 'standardized error'. Originally begun by German, French and Danish missionaries for whom the letter stood for some sort of palato-velar fricative/trill, it is now read by many English speakers as the "North American" *r*. Would it not be time for the introduction of a more realistic symbol? The author also continues to use the, to me, unacceptable digraph *ng* for ŋ. After all, most Eskimo dialects do have a phonemic distinction between *n* + *g* and ŋ. Some of Spalding's triple consonant clusters are, in fact, not triple consonants but diagraphs plus another consonant symbol.

Of the eight stories, the English translation for the longest occupies 2⅔ pages and the shortest 11 lines. The corresponding space required for the Inuktutin cum interlinear explication is 14 pages for the former and 1+ for the latter. The myths (stories) deal with Eskimo themes (man-animal transformation, the animal wife, origin of the sun and moon, supernatural powers, feats of strength, etc.) and they have an Eskimo quality about them. But they seem to be shortened and abbreviated. One wonders if they might have been stripped of some of the tedious details and simplified a bit for the white man's benefit, or if perhaps the narrator could recall accurately only part of some of the stories.

The last eight pages are devoted to a relatively extensive glossary, which, in this reviewer's opinion, is of generally good quality semantically. Misleading, though, is the very frequent use of 'he' for translations of the third person singular. Eskimo does not have grammatical sex gender. Also inappropriate, this reviewer thinks, is the stressing of English vulgarities in translations. "cunt" and "cock" (for *ussuuk* and *usuk*)