Adventures of Captain Bonneville by Washington Irving, Paris, 1837. Appendix. Extract from Cox's Columbia River inserted by English Editor, entitled The Flatheads and the Blackfeet, from Adventures on the Columbia River by Ross Cox, 2 volumes, London, 1831. (Cox on Columbia 1813-1819).

(383) A large band of the Flathead warriors were encamped about the fort. They had recently returned from the buffalo country, and had revenged their defeat of the preceding year, by a signal victory over their enemies the Blackfeet, several of whose warriors, with their women, they had taken prisoners. M'Millan's tobacco and stock of trading goods had been entirely expended previous to my arrival and the Indians were much in want of ammunition, etc. My appearance, or I should rather say, the goods I brought with me, was therefore a source of great joy to both parties. The natives smoked the much-loved weed for several days successively. Our hunters killed a few mountain sheep, and I brought up a bag of flour, a bag of rice, plenty of tea and coffee, some arrow-root, and fifteen gallons of prime rum. We spent a comparatively happy Christmas, and, by the side of a blazing fire in a warm room, forgot the sufferings we had endured in our dreary progress through the woods. There was, however, in the midst of our festivities, a great drawback from the pleasure we should have otherwise enjoyed. I allude to the unfortunate Blackfeet who had been captured by the Flatheads.

(384) Having been informed that they were about putting one of their prisoners to death, I went to their camp to witness the spectacle. The man was tied to a tree; after which they heated an old barrel of a gun until it became red hot, with which they burned him on the legs, thighs, neck, cheeks, and belly. They then commenced cutting the flesh from about the nails, which they pulled out, and next separated the fingers from the hand joint by joint. During the performance of these cruelties the wretched captive never winced, and instead of suing for mercy, he added fresh stimulants to their barbarous ingenuity by the most irritating reproaches, part of which our interpreter translates as follows:- "My heart is strong. -You do not hurt me.-You can't hurt me.-You are fools.-You do not know how to torture.-Try again.-I don't feel any pain yet. We torture your relations a great deal better, because we make them cry out aloud like little children.-You are not brave: you have small hearts, and you are always afraid to fight." Then addressing one in particular, he said, "It was by my arrow you lost your eye," upon which the Flathead darted at him, and with a knife in a moment scooped out one of his eyes; at the same time cutting the bridge of his nose nearly in two. This did not stop him: with the remaining eye he looked sternly at another, and said, "I killed your brother, and I scalped your old fool of a father." The warrior to whom this was addressed instantly sprung at him and separated the scalp from his head. He was then about plunging a knife in his heart, until he was told by the chief to desist. The raw skull, bloody socket, and mutilated nose, now presented a horrific appearance, but by no means changed his tone of defiance.- "It was I," said he to the chief, "that made your wife a prisoner last fall;- we put out her eyes;- we tore out her tongue;- we treated her like a dog. Forty of our young warriors --"

The chieftan became incensed the moment his wife's name was mentioned: he seized his gun, and, before the last sentence was ended, a ball from it passed through the brave fellow's heart, and terminated his frightful sufferings. Shocking, however, as this dreadful exhibition was, it was far exceeded by the atrocious cruelties practiced on the female prisoners, in which I am sorry to say the Flathead women assisted with more savage fury than the men. I only witnessed part of what one wretched young woman suffered, a detail of which would be too revolting for publicity. We remonstrated against the exercise of such horrible cruelties. They replied

The History of the Sioux War and Massacres of 1862 and 1863 by Isaac V.D. Heard, New York, 1865. (Heard was Recorder of the Military Commission which tired 400 of Little Crow's bad for their part in the Massacre. Of these 18 were sentenced to prison, 303 were sentenced to hang, and of these 38 were hanged at Mankato, February 26, 1863. President Lincoln commuted the death sentences of 265 Indians, and refused to commute the remaining 38.

(70) A farmer and his two sons were engaged in stacking wheat. Twelve Indians approached unseen to a fence, and from behind it shot the three. Then they entered the farmer's house and killed two of his young children in the presence of their mother, who was ill with consumption, and dragged the mother and a daughter aged thirteen years miles away to their camp. There, in the presence of her dying mother, they stripped off her clothes, fastened her upon her back to the ground, and one by one violated her person until death came to her relief.

Smithsonian Institution, Bureau of American Ethnology, Bulletin 115, United States Government Printing Office, Washington, 1937. Journal of Rudolph Friederich Kurz. Translated by Myrtis Jarrell, Edited by J.N.B. Hewitt.

(166) (Fort Union, October 5, 1851.) It was there (at Belle Vue) also that I heard the story of fifty Comanche having abused a white prisoner in like manner (to the Pawnee woman raped by thirty Omahas) and then left her in such a wretched condition that she was found again by her people maimed and insane. Indian women do not so easily lose their reason, at least from such causes, because, I think, they are less afraid and defy pain.

My Army Life on the Plains and the Fort Phil. Kearney Massacre, by Frances C. Carrington. Philadelphia, 1910. (Fort Phil. Kearney, Wyoming, December 31, 1866: Orders issued by Colonel Carrington, commanding officer of the Post, December, 1866, regarding the disposition of the women and children of the garrison in the event the Sioux stormed the Post.)

(153) Before leaving the fort on this mission of rescue (to recover the dead of Lt. Fetterman's command), unknown to us at the time, the Colonel had opened the magazine and cut the Boorman fuses of the spherical case-shot, such as were usually used against Indians prowling in the woods or thickets near by, and so adjusted the ammunition in store by the opening of boxes that by the application of a single match all could be destroyed. His secret instructions, still preserved, were these:

"If, in my absence, Indians in overwhelming numbers attack, put the women and children in the magazine with supplies of water, bread, crackers and other supplies that seem best, and, in the event of

(154) a last desperate struggle, destroy all together, rather than have any captured alive."

(385)by saying the Blackfeet treated their relations in the same manner; that it was the course adopted by all red warriors; and that they could not think of giving up the gratification of their revenge to the foolish and womanish feelings of white men. Shortly after this we observed a young female led forth, apparently not more than fourteen or fifteen years of age, surrounded by some old women who were conducting her to one end of the village, whither they were followed by a number of young men. Having learned the infamous intentions of her conquerors, and feeling interested for the unfortunate victim, we renewed our remonstrances; but received nearly the same answer as before. Finding them still inflexible, and wishing to adopt every means in our power consistent with safety, in the cause of humanity, we ordered our interpreter to acquaint them, that, highly as we valued their friendship, and much as we esteemed their furs, we would quit their country for ever unless they discontinued their unmanly and disgraceful cruelties to their prisoners. This had the desired effect, and the miserable captive was led back to her sorrowing group of friends. Our interference was nearly rendered ineffectual by the furious reproaches of the infernal old priestesses who had been conducting her to the sacrifice. They told the young warriors they were cowards, fools, and had not the hearts of fleas; and called upon them in the names of their mothers, sisters, and wives, to follow the steps of their forefathers, and have their revenge on the dogs of Blackfeet. They began to waver; but we affected not to understand what the old women had been saying. We told them that this act of self-denial on their part was peculiarly grateful to the white men; and that by it they would secure our permanent residence among them, and in return for their furs be always furnished with guns and ammunition sufficient to repel the attacks of their old enemies, and preserve their relations from being made prisoners. This decided the doubtful; and the chief promised faithfully that no more tortures should be inflicted on the prisoners, which I believe was rigidly adhered to, at least for that winter.

The Flatheads were formerly much more numerous than they were at this period, but owing to the constant hostilities between them and the Blackfeet Indians, their numbers had been greatly diminished. While pride, policy, ambition, self preservation, or the love of aggrandisement, often deluges the civilized world with Christian blood; the only cause assigned by the natives of whom I write, for their perpetual warfare, is their love of buffalo.

(386) There are extensive plains to the eastward of the mountains frequented in the summer and autumnal months by numerous herds of buffaloes. Hither the rival tribes repair to hunt those animals, that they may procure as much of their meat as will supply them until the succeeding season. In these excursions they often meet, and the most sanguinary conflicts follow.

The Blackfeet lay claim to all that part of the country immediately at the foot of the mountains, which is most frequented by the buffalo, and allege that the Flatheads, by resorting thither to hunt, are intruders whom they are bound to oppose on all occasions. The latter, on the contrary, assert, that their forefathers had always claimed and exercised the right of hunting on these "debateable lands;" and that while one of their warriors remained alive the right should not be relinquished. The consequences of these continual wars are dreadful, particularly to the Flatheads, who, being the weaker in numbers, were generally the greater sufferers. Independently of their inferiority in this respect, their enemy had another great advantage in the use of fire-arms, which they obtained from the Company's trading posts established in the department of Forts des Prairies. To these the Flatheads had nothing to oppose but

arrows and their own undaunted bravery. Every year previous to our crossing the mountains witnessed the gradual diminution of their numbers; and total annihilation would shortly have been the consequence, but for our arrival with a plentiful supply of "villanous saltpetre." They were overjoyed at having an opportunity of purchasing arms and ammunition, and quickly stocked themselves with a sufficient quantity of both.

From this moment affairs took a decided change in their favour; and in their subsequent contests the numbers killed, wounded, and prisoners, were more equal. The Blackfeet became enraged at this, and declared to our people at Forts des Prairies, that all white men who might happen to fall into their hands, to the westward of the mountains, would be treated by them as enemies, in consequence of their furnishing the Flatheads with weapons, which were used with such deadly effect against their nation. This threat, as will appear hereafter, was strictly put in execution. The lands of the Flatheads are well stocked with deer, mountain sheep, bears, wild fowl, and fish, and when we endeavoured to induce them to give up such dangerous expeditions, and confine themselves to the produce of their own country, they replied, that their fathers had always hunted on the buffalo grounds; that they were accustomed (287) to do the same thing from their infancy; and they would not now abandon a practice which had existed for several generations among their people.

With the exception of the cruel treatment of their prisoners (which, as it is general among all savages, must not be imputed to them as a peculiar vice), the Flatheads have fewer failings than any of the tribes I ever met with. They are honest in their dealings, brave in the field, quiet and amenable to their chiefs, fond of cleanliness, and decided enemies to falsehood of every description. The women are excellent wives and mothers, and their character for fidelity is so well established, that we never heard an instance of one of them proving unfaithful to her husband. They are also free from the vice of backbiting, so common among the lower tribes; and laziness is a stranger among them. Both sexes are comparatively very fair, and their complexions are a shade lighter than the palest new copper after being freshly rubbed. They are remarkably well made, rather slender, and never corpulent. The dress of the men consists solely of long leggings, called mittasses by the Canadians, which reach from the ancles to the hips, and are fastened by strings to a leather belt round the waist, and a shirt of dressed deer-skin, with loose hanging sleeves, which falls down to their knees. The outside seams of the leggings and shirt sleeves have fringes of leather. The women are covered by a loose robe of the same material reaching from the neck to the feet, and ornamented with fringes, beads, hawk's bells, and timbles. The dresses of both are regularly cleaned with pipe-clay, which abounds in parts of the country; and every individual has two or three changes. They have no permanent covering for the head, but in wet or stormy weather shelter it by part of a buffalo robe, which completely answers all the purposes of a surtout. The principal chief of the tribe is hereditary, but from their constant wars, they have adopted the wise and salutary custom of electing, as their leader in battle, that warrior in whom the greatest portion of wisdom, strength, and bravery are combined. The election takes place every year; and it sometimes occurs that the general in one campaign becomes a private in the next. This "war chief," as they term him, has no authority whatever when at home, and is as equally amenable as any of the tribe to the hereditary chief; but when the warriors set out on their hunting excursions to the buffalo plains, he assumes the supreme command, which he exercises with despotic sway until their return. He carries a long whip with a thick handle decorated with scalps

(388) and feathers, and generally appoints two active warriors as aides-de-camp.

On their advance towards the enemy he always takes the lead; and on their return he brings up the rear. Great regularity is preserved during the march; and I have been informed by Mr. M'Donald, who accompanied some of these war parties to the field of action, that if any of the tribe fell out of the ranks, or committed any other breach of discipline, he instantly received a flagellation from the whip of the chieftain. He always acted with the most perfect impartiality, and would punish one of his subalterns for disobedience of orders with equal severity as any other offender. Custom, however, joined to a sense of public duty, had reconciled them to these arbitrary acts of power, which they never complained of or attempted to resent. After the conclusion of the campaign, on their arrival on their own lands, his authority ceases; when the peace chief calls all the tribe together, and they proceed to a new election. There is no canvassing, caballing, or intriguing; and should the last leader be superseded, he retires from office with apparent indifference, and without betraying any symptoms of discontent. The fighting chief at this period (1813-1814) had been five times re-elected. He was about thirty-five years of age, and had killed twenty of the Blackfeet in various battles, the scalps of whom were suspended in triumphal pride, from a pole at the door of his lodge. His wife had been captured by the enemy the year before (1813), and her loss made a deep impression on him. He was highly respected by all the warriors for his superior wisdom and bravery; a consciousness of which, joined to the length of time he had been accustomed to command, imparted to his manners a degree of dignity which we never remarked in any other Indian. He would not take a second wife, and when the recollection of the one he had lost came across his mind, he retired into the deepest solitude of the woods to indulge his sorrow, where some of the tribe informed us they often found him calling on her spirit to appear, and invoking vengeance on her conquerors. When these bursts of grief subsided, his countenance assumed a tinge of stern melancholy, strongly indicating the mingled emotions of sorrow and unmitigated hatred of the Blackfeet. We invited him sometimes to the fort, upon which occasions we sympathized with him on his loss, but at the same time acquainted him with the manner in which civilized nations made war. We told him that warriors only were made prisoners, who were never tortured or killed, and that no brave white man would (389) ever injure a female of a defenceless man; that if such a custom had prevailed among them, he would now by the exchange of prisoners be able to recover his wife, who was by their barbarous system lost to him for ever, and if it were impossible to bring about a peace with their enemies, the frightful horrors of war might at least be considerably softened by adopting the practice of the Europeans. We added that he had now a glorious opportunity of commencing the career of magnanimity by sending home uninjured the captives he had made during the last campaign; that our friends on the other side of the mountains would exert their influence with the Blackfeet to induce them to follow his example, and that ultimately it might be the means of uniting the two rival nations in the bonds of peace. He was at first opposed to making any advances; but on farther pressing he consented to make the trial, provided the hereditary chief and the tribe started no objections. On quitting us he made use of the following words: "My white friends, you do not know the savage nature of the Blackfeet; they hope to exterminate our tribe; they are a great deal more numerous than we are, and were it not for our bravery, their object would have been long ago achieved. We shall now, according to your wishes, send back the prisoners, but remember, I tell you, that they will laugh

at the interference of your relations beyond the mountains, and never spare a man, woman, or child, that they can take of our nation. Your exertions to save blood show you are good people. If they follow our example, we shall kill no more prisoners; but I tell you, they will laugh at you and call you fools."

We were much pleased at having carried our point so far; while he, true to his word, assembled the elders and warriors, to whom he represented the subject of our discourse, and after a long speech, advised them to make the trial, which would please their white friends, and show their readiness to avoid unnecessary cruelty. Such an unexpected proposition gave rise to an animated debate, which continued for some time; but being supported by a man for whom they entertained so much respect, it was finally carried, and it was determined to send home the Blackfeet on the breaking up of the winter. We undertook to furnish them with horses and provisions for their journey, or to pay the Flatheads a fair price for so doing. This was agreed to, and about the middle of March (1814) the prisoners took their departure tolerably well mounted, and with dried meat enough to bring them to their friends. Mr. M'Millan, who had passed three years in their country, and was acquainted with their (390) language, informed them of the exertions we had used to save their lives, and prevent further repetitions of torture: and requested them particularly to mention the circumstance to their countrymen, in order that they might adopt a similar proceeding. We also wrote letters by them to the gentlemen in charge of the different establishments at Forts des Prairies, detailing our success, and impressing on them the necessity of their attempting to induce the Blackfeet in their vicinity to follow the example set them by the Flatheads. The lands of this tribe present a pleasing diversity of woods and plains, valleys and mountains, lakes and rivers. Besides the animals already mentioned, there are abundance of beavers, otters, martens, wolves, lynxes, etc.

The wolves of this district are very large and daring; and were in great numbers in the immediate vicinity of the fort, to which they often approached closely, for the purpose of carrying away the offals. We had a fine dog of mixed breed, whose sire was a native of Newfoundland, and whose dam was a wolf, which had been caught young, and domesticated by Mr. La Rocque, at Lac la Ronge, on the English river. He had many rencounters with his maternal tribe, in which he was generally worsted. On observing a wolf near the fort, he darted at it with great courage; if it was a male, he fought hard; but if a female, he either allowed it to retreat harmless, or commenced fondling it. He sometimes was absent for a week or ten days; and on his return, his body and neck appeared gashed with wounds inflicted by the tusks of his male rivals in their amorous encounters in the woods. He was a noble animal, but always appeared more ready to attack a wolf than a lynx.

Our stock of sugar and molasses having failed, we were obliged to have recourse to the extract of birch to supply the deficiency. This was obtained by perforating the trunks of the birch trees in different places. Small slips of bark were then introduced into each perforation, and underneath kettles were placed to receive the juice. This was afterwards boiled down to the consistency of molasses, and was used with our tea as a substitute for sugar: it is a bitter sweet, and answered its purpose tolerably well.

The Flatheads are a healthy tribe, and subject to few diseases. Common fractures, caused by an occasional pitch off a horse, or a fall down a declivity in the ardour of hunting, are cured by tight bandages and pieces of wood like staves placed longitudinally around the part, to which they are secured by leathern thongs. For contusions they generally bleed, either in the temples, arms,

(391) wrists, or ankles, with pieces of sharp flint, or heads of arrows: they however preferred being bled with the lancet, and frequently brought us patients, who were much pleased with that mode of operation. Very little snow fell after Christmas (1812 or 1813), but the cold was intense, with a clear atmosphere. I experienced some acute rheumatic attacks in the shoulders and knees, from which I suffered much annoyance. An old Indian proposed to relieve me, provided I consented to follow the mode of cure practiced by him in similar cases on the young warriors of the tribe. On inquiring the menthod he intended to pursue, he replied that it merely consisted in getting up early every morning for some weeks, and plunging into the river, and to leave the rest to him. This was a most chilling proposition, for the river was firmly frozen, and an opening to be made in the ice preparatory to each immersion.

I asked him, "Would it not answer equally well to have the water brought to my bed room?" But he shook his head, and replied, he was surprised that a young white chief, who ought to be wise, should ask so foolish a question. On reflecting, however, the rheumatism was a stranger among Indians, while numbers of our people were martyrs to it, and, above all, that I was upwards of three thousand miles from any professional assistance, I determined to adopt the disagreeable expedient, and commenced operations the following morning. The Indian first broke a hole in the ice sufficiently large to admit us both, upon which he made a signal that all was ready. Enveloped in a large buffalo robe, I proceeded to the spot, and throwing off my covering, we both jumped into the frigid orifice together. He immediately commenced rubbing my shoulders, back, and loins, my hair in the mean time became ornamented with icicles; and while the lower joints were undergoing their friction, my face, neck, and shoulders were incased in a thin covering of ice. On getting released I rolled a blanket about me, and ran back to the bedroom, in which I had previously ordered a good fire, and in a few minutes I experienced a warm glow all over my body. Chilling and disagreeable as these matinal ablutions were, yet, as I found them so beneficial, I continued them for twenty-five days, at the expiration of which my physician was pleased to say that no more were necessary, and that I had done my duty like a wise man. I was never after troubled with a rheumatic pain! One of our old Canadians, who had been labouring many years under a chronic rheumatism, asked the Indian if he could cure him in the same manner: the latter replied it was
(392) impossible, but that he would try another process. He accordingly constructed the skeleton of a hut about four and a half feet high, and three broad, in shape like a beehive, which he covered with deer-skins. He then heated some stones in an adjoining fire, and having placed the patient inside in a state of nudity, the hot stones were thrown in, and water poured on them: the entrance was then quickly closed, and the man kept in for some time until he begged to be released, alleging that he was nearly suffocated. On coming out he was in a state of profuse perspiration. The Indian ordered him to be immediately enveloped in blankets and conveyed to bed. This operation was repeated several times, and although it did not effect a radical cure, the violence of the pains was so far abated, as to permit the patient to follow his ordinary business, and to enjoy his sleep in comparative ease.

The Flatheads believe in the existence of a good and evil spirit, and consequently in a future state of rewards and punishments. They hold, that after death the good Indian goes to a country in which there will be perpetual summer; that he will meet his wife and children, that the rivers will abound with fish, and the plains with the much-loved buffalo;

and that he will spend his time in hunting and fishing, free from the terrors of war, or the apprehensions of cold or famine. The bad man, they believe, will go to a place covered with eternal snow; that he will always be shivering with cold, and will see fires at a distance which he cannot enjoy, water which he cannot procure to quench his thirst, and buffalo and deer which he cannot kill to appease his hunger. An impenetrable wood, full of wolves, panthers, and serpents, separates these "shrinking slaves of winter" from their fortunate brethren in the "meadows of ease." Their punishment is not however eternal, and, according to the different shades of their crimes, they are sooner or later emancipated, and permitted to join their friends in the Elysian fields.

Their code of morality, although short, is comprehensive. They say that honesty, bravery, love of truth, attention to parents, obedience to their chiefs, and affection for their wives and children, are the principal virtues which entitle them to the place of happiness, while the opposite vices condemn them to that of misery. They have a curious tradition with respect to beavers. They firmly believe that these animals are a fallen race of Indians, who, in consequence of their wickedness, vexed the Good Spirit, and were condemned by him to their present shape, but that in due time they will be restored to their humanity. They allege that the beavers
(393) have the powers of speech, and that they have heard them talk with each other, and seen them sitting in council on an offending member.

The lovers of natural history are already acquainted with the surprising sagacity of these wonderful animals; with their dexterity in cutting down trees, their skill in constructing their houses, and their foresight in collecting and storing provisions sufficient to last them during the winter months: but few are aware, I should imagine, of a remarkable custom among them, which, more than any other, confirms the Indians in believing them a fallen race. Towards the latter end of autumn a certain number, varying from twenty to thirty, assemble for the purpose of building their winter habitations. They immediately commence cutting down trees, and nothing can be more wonderful than the skill and patience which they manifest in this laborious undertaking; to see them anxiously looking up, watching the leaning of the tree when the trunk in nearly severed, and, when its creaking announces its approaching fall, to observe them scampering off in all directions to avoid being crushed.

When the tree is prostrate they quickly strip it of its branches; after which, with their dental chisels, they divide the trunk into several pieces of equal lengths, which they roll to the rivulet across which they intend to erect their house. Two or three old ones generally superintend the others, and it is no unusual sight to see them beating those who exhibit any symptoms of laziness. Should, however, any fellow be incorrigible, and persist in refusing to work, he is driven unanimously by the whole tribe to seek shelter and provisions elsewhere. These outlaws are therefore obliged to pass a miserable winter, half starved in a burro on the banks of some stream, where they are easily trapped. The Indians call them "lazy beavers," and their fur is not half so valuable as that of the other animals, whose persevering industry and prevoyance secure them provisions and a comfortable shelter during the severity of winter.

I could not discover why the Blackfeet and Flatheads received their respective designations, for the feet of the former are no more inclined to sable than any other part of the body, while the heads of the latter possess their fair proportion of rotundity. Indeed it is only below the falls and rapids that real flatheads appear, and at the mouth of the Columbia that they flourish most supernaturally.

Adapted from Map at pp. 106-107, of The Honourable Company, A History of The Hudson's Bay Company by Douglas MacKay, New York, 1938.

The Aboriginal Population of America North of Mexico by James Mooney, Smithsonian Miscellaneous Collections, Volume 80, Number 7, Washington, February 6, 1928. (Work completed by Dr. John R. Swanton, after the death of James Mooney in 1931.)

Page.	Year.	Tribes.	Number.
(13)	1780.	The Northern Plains Indians, who hunted bison, including the Arikari, Pawnee, Hidatsa and the Mandan, who also cultivated maize, numbered ------	100,800
(16)	1780.	The Flathead, Kutenai, Pend d'Oreille and the Nez Perce Indians who hunted bison east of the Rocky mountains numbered ----------	6,800
(13)	1780.	The Southern Plains Indians, who hunted bison, including the Navajo and Apache, who also cultivated maize, numbered ----------	41,000
(30)	1845.	The Shoshoni, Bannack and Sheepeater Indians, who hunted bison east of the Rocky mountains, numbered ----------	5,500
		Total number of Indians hunting bison on Plains ----	154,100

Total Indian Population:

1780-1845.	Indians.	1938.	Indians.
United States.	849,000	United States.	*366,000
Canada.	231,000	Canada.	*101,000
Alaska.	73,000	Alaska.	* 28,000
Total:	1,143,000	Total:	*395,000

(*These figures include mixed bloods)

Areas and 1930-1931 populations: Sources.
The Concise Encyclopedia, Edited by A.H. McDannald, New York, 1937, and Uncle Sam's Almanac, Compiled by Frederic J. Haskin, 1941. Figures from Haskin are marked (*).

Country.	Area.	Population.
United States.	3,026,789 sq. mi.	122,775,046(1930
Canada.	3,510,008 sq. mi.	10,376,786(1931
Alaska.	* 586,400 sq. mi.	* 59,278(1930

Bison Hunting Plains Area.

Country.	Square miles.	Acres.
Louisiana Purchase:	* 827,987	539,911,680
Texas Purchase:	* 389,166	249,066,240
Alberta Province (Canada):	255,285	163,382,400
Saskatchewan Province (Canada)	251,700	161,088,000
Total: (640 acres to sq. mi.)	1,724,138	1,103,448,320

1780-1845. Density of population, bison hunting tribes on the Plains:

Years.	Indians.	Square miles.	Acres.	Square miles per Indian.	Acres per Indian.
1780-1845.	154,100.	1,724,138.	1,103,448,320.	11.188	7,160.59.

Density of Indian population, 1780-1845, United States, Canada and Alaska, compared with density of total populations of United States, Canada and Alaska in 1930-1931. (1) Square miles per person. (2) Acres per person.

Country.	(1)1780-1845.	(2)1780-1845.	(1)1930-1931.	(2)1930-1931.
United States.	3.50	2,240.	0.024	15.360
Canada.	15.88	10,163.20	0.33	211.20
Alaska.	8.03	5,139.20	9.89	6,329.60

(Indians included with whites, 1930-1931)

Density of Indian population, 1780-1845, United States, Canada and Alaska, compared with density of total populations of United States, Canada and Alaska in 1930-1931. (1) Square miles per person. (2) Acres per person.

Countries.	(1)1780-1845.	(2)1780-1845.	(1)1930-1931.	(2)1930-1931.
United States, Canada, and Alaska combined.	6.23	3,987.20	0.053	33.92

Indian populations, comparative density:

Section or area.	Square miles per Indian.	Acres per Indian.
Canada, including bison hunters.	15.88	10,163.20
United States and Canada, bison hunters only.	11.188	7,160.59
Alaska, only.	8.03	5,139.20
United States, Canada, and Alaska combined.	6.23	3,987.20
United States, Canada and Alaska, excluding bison hunters.	5.45	3,488.00
United States, only, including bison hunters.	3.50	2,240.00

It was not possible to segregate and exclude the bison hunting Indians in the United States and Canada, as these Indians went back and forth across what is now the United States and Canadian border. But it is apparent from the foregoing that the most sparsely settled country north of Mexico, as to Indian population, was northern Canada, and the great buffalo grounds, or great plains, came next in order for sparseness of Indian population, with Alaska, and its fishing population of Indians holding third place. The country north of Mexico which was most thickly populated by Indians was that part of the United States laying outside of the great plains, and inhabited by Indians who made their living by (a) gathering seeds, roots, insects and berries, known as the gatherers; (b) in fishing and gathering shell fish; (c) in growing maize and other vegetable foods; (d) in hunting wild game which was smaller than the bison, and in hunting and snaring birds; and in various combinations of the foregoing activities.

Quantity of food consumed, and its money value.

8 Montana Historical Society, 202, cited here, opposite p. 23, "The A.H. Quivy Manuscript on the Crow," says "That when living on meat alone, they eat a large amount, perhaps an average of six or seven pounds per day for an individual."
David Thompson's Narrative, cited here opposite to pages 23 and 24 gives the following information about the rationing of his men: That five pounds of Moose meat is held to be equal to seven pounds of any other meat, including that of the bison; the meat must be in good condition, that the daily allowance of a man is eight pounds of fish, which is held equal to five pounds of meat; that his French Canadians ate eight pounds of fresh meat a day; that even his gluttonous French Canadians who eat eight pounds of fresh meat a day, are satisfied with one and a half pounds of pemmican a day.
Narrative of the Second Arctic Expedition, footnote on preparation of pemmican for Richardson expedition, given opposite p. 24, states: That beef loses more than three fourths of its original weight in drying; that by drying 35,651 pounds of fresh beef were reduced to about 8,000 pounds.
Keating's Narrative, given in Captain Bonneville, 1837 Edition, quoted here opposite p. 6, states that buffalo cows, according to estimate, generally yield from 250 to 300 pounds of good meat.
The Journal of Alexander Henry, here quoted opposite p. 6, states: That it is common to see a buffalo bull whose weight exceeds 1,500 pounds, but a buffalo cow is seldom over 700 or 800 pounds gross; a fat buffalo cow killed in autumn weighs from 600 to 700 pounds, and a lean buffalo cow seldom weighs over 300 pounds, that he weighed 150 buffalo cows killed from September 1st to February 1st, and found they averaged 400 pounds each, buffalo bulls during the same space of time averaged 550 pounds each, two year old buffalo heifers, in autumn, average 300 pounds, and one year old buffalo calves, in autumn, average 110 pounds, that these weights are exclusive of the offals, that the total eatable meat of one buffalo bull, as received in the store-house, weighed 800 pounds, one thigh alone of this animal weighing 85 pounds.
David Thompson's Narrative, quoted opposite p. 6, these notes, states: That the avarage weight of the thigh of a Red Deer is 38 pounds, and the whole of the meat 160 to 170 pounds, that the average weight of the meat of an antelope is 59 pounds when the animal is fleshy, and 65 pounds when the animal is fat.
General Scott's Memoirs, here quoted opposite p. 6, states that a dressed antelope would weigh anywhere from 50 to 75 pounds.
Memoirs of General W.T. Sherman written by himself, New York, 1878, vol. I p. 19. (California, 1846-1848): "Cattle cost eight dollars fifty cents for the best, and this made beef net about two cents a pound, but at that time nobody bought beef by the pound, but by the carcass."
Eighty-One Years in the West by George A. Bruffey, Butte, Montana, 1935, p. 40 (Montana, 1864-1865): "Many loads of game, deer, elk, and antelope were coming in. Deer sold for one dollar each, antelope the same, and elk varied according to the size and quality of the animal." At about this time, according to Granville Stuart (8 Montana Historical Society, 132) beef was selling in Florence Idaho (1862) at 35 cents a pound.
Congressional Record, Vol. 2, Pt. 3, 43d Cong. 1st Sess. House. Mar. 10, 1874, p. 3106: "Mr. McCormick. --- I have here a letter from General Hazen from which I will read a single extract. He says: --- 'The buffalo for food has an intrinsic value, about equal to an average Texas beef, or say twenty dollars.'"

14th Annual Report of the Bureau of American Ethnology, 1892-93, Part I, Washington, 1896. The Coronado Expedition of 1540-1542 by George Parker Winship. Relacion Postrera de Sivola. (1541).

(570) The maintenance or sustenance of these Indians comes entirely from the cows, because they neither sow nor reap corn. With the skins they make their houses, with the skins they clothe and shoe themselves, of the skins they make rope, and also of the wool; from the sinews they make thread, with which they sew their clothes and also their houses, from the bones they make awls, the dung serves them for wood, because there is nothing else in that country; the stomachs serve them for pitchers and vessels from which they drink, they live on the flesh; they sometimes eat it half roasted and warmed over the dung, at other times raw; seizing it with their fingers, they pull it out with one hand and with a flint knife in the other they cut off mouthfuls, and thus swallow it half chewed; they eat the fat raw, without warming it; they drink the blood just as it leaves the cows, and at other times after it has run out, cold and raw, they have no other means of livlihood. These people have dogs like beasts of burden, and make saddles for them like our pack saddles, and they fasten them with their leather things, and these make their backs sore on the withers like pack animals. When they go hunting, they load these with their necessities, and when they move - for these Indians are not settled in one place, since they travel wherever the cows move, to support themselves - these dogs carry their houses, and they have the sticks of their houses dragging along tied on to the (571) pack-saddles, besides the load which they carry on top, and the load may be, according to the dog, from 35 to 50 pounds. It is 30 leagues, or even more, from Cibola to these plains where they went. The plains stretch away beyond, nobody knows how far.

The Indian Sign Language by W.P. Clark, U.S. Army, Philadelphia, 1885.

(84) (Buffalo Calf. 1879-1880) (Uses made of bison by plains Indians) Of the skinsthey make robes, lodges, lariats, ropes, trunks or par-fleche sacks, saddles, saddle-covers, shields, frames for war-bonnets, gloves, moccasins, leggings, shirts, hats, gun-covers, whips, quivers, knife-scabbards, cradles, saddle-bags, saddle-blankets, decorations for saddles, beds, bridles, boots, a kind of sled for hauling meat over the snow, and from the thick part of the skin of the neck a glue is made by boiling and skimming. Ropes and lariats are made from the scalp-lock, or long tuft on the forehead, and pillows from the hair. From the horns, spoons, cups, dishes, powder-horns, arrow-heads, bows, by splitting the longer horns, and the tips are fastened to slender poles which are used in certain games (85) From the fascia (thin tendinous covering which supports the muscles, and by the interpreters called sinew), found under the shoulder-blades, the abdominal fascia, the two strips on each side over the hump, and the strip on each side of the back, they make thread, bow-strings, rope for softening robes by rubbing, fasten feather-guides to arrows, and stiffen and make bows more elastic by placing on back. From the thick ligament of the upper portion of nape of neck is made a pipe. An instrument used to straighten arrows is fashioned from the centre bone of the hump by cutting a hole in it, and from some of the smaller bones arrow-heads are made, and an instrument for "flushing," or scraping the meat from hides. From shoulder-blades, axes, knives, arrow-points, instruments for dressing robes and smoothing down porcupine work. The trachea is used as a sack for paints, etc. The rough papillae of the tongue for hair-brushes. The brain, liver, and fat for tanning skins. Instruments for shaping bows and small dog-sleds from ribs. From the paunch, water-pipes or sacks, in which meat and blood are sometimes cooked by boiling with heated stones, the latter being dropped into the sacks. From the thigh-bones, traps

(Continued: Facing p. 188.)

Quantity of food consumed and its money value, continued.

Report of the National Museum, Washington, 1887. The Extermination of the American Bison by William T. Hornaday:
(435) "At a low estimate these (bison) could easily have been made to yield various products worth $5 each (bison), as follows: Robe, $2.50; tongue, 25 cents; meat of hind-quarters, $2; bones, horns, and hoofs, 25 cents; total, $5."
(446) "The amount of fresh buffalo meat cured and marketed was really very insignificant. So long as it was to be had at all it was so very abundant that it was worth only from 2 to 3 cents per pound in the market, and many reasons combined to render the trade in fresh buffalo meat anything but profitable."
(447) "The price of pemmican in Winnipeg was
(448) once as low as 2d.(4 cents) per pound, but in 1883 a very small quantity which was bought in sold at 16 cents per pound."
(449) "In the Northwest Territories dried (buffalo) meat, which formerly sold at 2d. (4 cents) per pound, was worth in 1878 10d. (20 cents) per pound."

Amount of bison robes required for shelter, bedding and clothing, and their value in money.

Maximilian, Prince of Wied, quoted opposite p. 16, these notes, says the tents of the Sioux at Fort Pierre in 1833 were generally composed of 14 robes, each robe worth two dollars.
3 Montana Historical Society, footnote, p. 358, quoted opposite p. 16 herein, gives a statement by Lieutenant Bradley to the effect that the ordinary lodge has from 8 to 12, and sometimes 20 skins, 15 to 20 poles, and the lodge poles 15 to 25 feet in length.
Denig on the Assiniboin, 1854-1855, quoted opposite p. 16 herein, states that the lodges take from 6 to 33 skins each, and uses poles from 12 to 30 feet long, depending on the size of the lodge; the average size lodge is of 13 skins, and will hold a family of 8, their baggage, and 2 or 3 guests besides; a lodge of 16 skins will hold a family of 10, and a lodge of 6 skins will accomodate 3 people.
Blackfoot, et al. Indians v. United States, No. E 437, United States Court of Claims, Depositions on behalf of Plaintiffs, June-July, 1936.
(28) Mrs. Horse Capture, a Gros ventre (Atsina) Indian, of Hays, Montana, is 76 years old; she says:
(29) she used 9 buffalo hides to make a lodge, and about 3 buffalo hides to line a lodge, and made a new lodge every summer, using old lodge skins for lodge linings and to make moccasins; that it took four buffalo robes to make one bed.
(31) Mrs. Lame Bull, 83 years old, and a Gros Ventre (Atsina) Indian says: She used 16 buffalo hides to make a lodge and 3 to make one lining, and for bedding, two buffalo robes for covers and three buffalo robes for "under," that she had a new lodge every year.
(63) Mountain Chief, a Blackfoot (Piegan) Indian, 78 years of age says:
(66) That it took an average of 14 buffalo hides to make a lodge, but the number of hides to a lodge were from 8 to 15, that these lodges were good from two to three years, that they used two robes for bedding, and worn out robes as a pillow and to cover the feet.
(71) Eagle Head, a Blackfoot (Piegan) Indian, 93 years of age, says:
(73) That it required 16, 15 or 14 buffalo hides to make a lodge, that these lodges lasted about two summers and one winter.

(Continued from: Facing p. 128.)
similar to our deadfalls. From the tail, knife-scabbards, handles to war-clubs, and medicine-rattles. The udder, dried, becomes stiff and hard, and is used for dishes, tobacco-bags, medicine-rattles, etc. The pericardium for sacks. The gall is sometimes used as a drink, and produces intoxication; there is also sometimes found in the gall a hard yellow substance, and this is highly valued as a paint for the face. The amniotic fluid, in which the foetus floats, is used by them to quench thirst when water cannot be obtained, and is also generally used to cook or boil the foetus in, the latter being specially prized as a dainty and delicate morsel of food. The marrow is eaten both raw and cooked, being roasted in the larger bones by laying them on the coals. The teeth are used for necklaces, and are also put in medicine-rattles. They consider the contents of the paunch and excellent remedy for skin diseases, and in case of frost-bite, if the afflicted member is thrust into the paunch of a freshly-killed buffalo, relief obtains with-out evil after-effects. A very little buffalo fat is sometimes mixed with the tobacco and red-willow bark for smoking. The liver is often eaten raw, and while still warm with animal heat, the gall-juice being sprinkled over it as a sauce. The kidneys are eaten both raw and cooked. The meat, fat, and most of the intestines are staple articles of food, and are kept for months by being simply dried in the sun; the hump is considered particularly fine for drying. The contents of the paunch furnish food for ponies, and the liquid in same, cleared by the gall, is prized for drinking, is cool and tasteless; i.e., devoid of any unpleasant taste. The "buffalo-chips" are used for fuel, and before the days of flint and steel and matches, were particularly good when dry for making (86) a fire by the friction of wood. These "chips," pounded fine and kept dry, are used to keep the small children warm, they being partially buried in the powdered material. The value of these chips can scarcely be appreciated by those who have not suffered for the want of fuel on our treeless prairies. The tanned buffaloskin without the hair furnishes the best material for tepees.

New Light on the Early History of the Greater Northwest, The Manuscript Journals of Alexander Henry and David Thompson, 1799-1814, Edited by Elliott Coues, New York, 1897. Vol. I, The Red River of the North. Henry. (357) (Hidatsa Village, July 31, 1806) I am told that in winter, when they kill a buffalo, they generally cover it with snow, without even opening it, and leave it for several days, until the flesh acquires a horrid smell, they then cut it up and use it. On the other hand, when obliged to eat fresh meat, they are mere brutes, allowing it but a few moments to get thoroughly warm, when they devour it like so many ravenous wolves, with the blood streaming down each side of their mouths. The gristle of the nose, the liver, kidneys, paunch, testicles, and fat they devour entirely raw, without even washing the dung from the paunch. (397) (With Mandan and Hidatsa, en route from Cheyenne Camp to Mandan Village, July 26, 1806) Here I observed the filthy manners of these people in feasting on the raw entrails of buffalo. The paunch, liver, kidneys, fat, testicles, gristle, marrow-bones, and several other pieces, they hand about and devour like famished wolves, whilst blood and dung stream down from their mouths; it was disgusting to see them.

Amount of bison robes required for shelter, bedding and clothing, and their value in money.

(91) Thomas Burd, Senior, is a mixed blood Blackfoot (Piegan) Indian, and says he was 15 years of age in 1855, which would make him 86 years of age in 1926. He testifies:
(94) That it took from 8 to 16 buffalo hides to make a lodge, and it took about 6 buffalo hides for the inner lining of the lodge.
(111) Red Plume, a Blackfoot (Piegan) Indian was living 73 years [illegible],
(113) was living in 1855 (73 years ago, his testimony being given in 1926), says:
(113) That it took from 6 or 7 to 16 skins to make a lodge;
(114) that prior to 1855 they built new lodges every summer, but after they quit hunting in the common hunting ground it took longer to get skins for new lodges, so they made new ones every two years.
(118) Wood Chief Woman, a Blackfoot (Piegan) woman says she was a pretty good sized girl in 1855, that is 73 years ago; she says:
(118) that it took from 4 to 16 hides to make a lodge, that an old woman got only a 4 skin lodge, that most of the people made new lodges every year, but the poorer people had to make their lodges last for two years.
The Indian Sign Language by Clark, quoted here, opposite p. 16, says that from 14 to 26 poles were used in a lodge or tipi, and one or two for the wing poles outside, these latter adjusting the wings at the smoke hole of the lodge, for the purpose of allowing the escape of the smoke, that the length of these lodge poles varied from 16 to 30 feet.
The American Fur Trade by Chittenden, footnote quoting Dr. Hayden, quoted here opposite p. 109, states: That each man, woman and child required from one to three robes a year for clothing.
History of the American Fur Trade in the Far West by Hiram Martin Chittenden, U.S.A., New York, 1902, at p. 7, gives the figures compiled in 1832 by Indian Agent John Dougherty, embracing the years 1815 to 1830 upon the fur trade, and the prices of furs. The value of buffalo robes for that period is stated to be $3 for each robe.
46th Annual Report, Bureau of American Ethnology, Tribes of the Upper Missouri, The Assiniboin, by Edwin T. Denig, (1854-1855).
(585)"--- esttimating the cost of each (dress) in buffalo robes at $3 each, their value in this country."
Report of the United States National Museum, Washington, 1887, The Extermination of the American Bison by William T. Hornaday.
(445)"On the northern range, from 1881 to 1883, the prices paid (for buffalo robes) were much higher, ranging from $3.50 to $4."

Summary:

Quivy Manuscript, p. 137, these notes; Crow eats per day	6 lbs. bison.
Quivy Manuscript, p. 137, these notes: Crow eats per day	7 lbs. bison.
Thompson Narrative, p. 137, these notes, daily ration	5 lbs. moose.
Thompson Narrative, p. 137, these notes, 5 lbs. moose eq.	7 lbs. otherMeat
Thompson Narrative, p. 137, these notes, daily ration	5 lbs. meat.
Thompson Narrative, p. 137, these notes, Canadian eatRat.	8 lbs. meat.
Thompson Narrative, p. 137, these notes, 8 lbs. meat eq.	1½ lbs. pemmican.
Sherman's Memoirs, p. 137, these notes, Californis, 1848,	8¢ lb. beef.
Hornaday, p. 138, these notes,	2¢ lb. bison.
Hornaday, p. 138, these notes,	3¢ lb. bison.
Hornaday, p. 138, these notes,	4¢ lb. pemmican.
Hornaday, p. 138, these notes, dried meat,	4¢ lb. bison.

Summary:

Bruffey, p. 138, these notes, in Montana, 1864-1865:

Deer sold at	$1.00 each.
Antelope sold at	$1.00 each.
Thompson, p. 137, these notes, Red Deer, 160 lbs. meat	eq. .006¢ per lb.
Thompson, p. 137, these notes, Red Deer, 170 lbs. meat	eq. .005¢ per lb.
Scott, p. 137, these notes, antelope, 50 lbs. meat	eq. .02¢ per lb.
Scott, p. 137, these notes, antelope, 75 lbs. meat	eq. .0133¢ per lb.
Thompson, p. 137, these notes, antelope, 59 lbs. meat,	eq. .0169¢ per lb.
Thompson, p. 137, these notes, antelope, 65 lbs. meat,	eq. .0153¢ per lb.

Value of bison robes:

Maximilian, p. 138, these notes, values skins, 1833, @	$3. each.
Dougherty, (Chittenden), p. 139, these notes, (1815-30)	$3. each skin.
Denig, p. 139, these notes, 1854-55, values skins @	$3. each.
Hornaday, p. 139, these notes, 1881-83, values skins @	$3.50 each to $4.00 each.

Conclusions: Minimum cost of living of adult plains bison hunting Indian.

Food: A reasonable amount for subsistence is 5 lbs. bison meat per day.
A reasonable value for this meat is 2¢ per lb.
The reasonable value of subsistence is 10¢ per day or $36.50 per ann

Clothing: Hayden (139, these notes) 3 robes a year for clothing.
Reasonable value, each robe, is $3. Clothing $9. per annum.

Shelter: Denig (138, these notes) says 6 skin lodge will hold 2 persons.
Three skins for shelter, @ $3., is $9. for shelter.
Inner lining lodge, 1 person, his share, and for extra moccasins, 1 buffalo robe, $3.

Transportation: The Piegan obtained his horses by theft, natural breeding or by gift. He bought no horses. Transportation, no value

Labor: The reward for labor in procuring food and shelter was continued existence in the land of the living. No money value for labor.

Weapons, utensils, tools, equipment, travois, etc.: Materials for these were not purchased but obtained by labor, and these things were fabricated by more labor. No money value.

Food:	$36.50	per annum.
Clothing:	$ 9.00	per annum.
Shelter:	$12.00	per annum.
Total:	$57.50	Capitalized at 4 per centum: $1,437.50, invested capital each Indian.

Each plains Indian (p. 136, these notes) averaged 7,160.59 acres. $1,437.50, invested capital, each Indian into acreage, gives a land value, with buffalo on the land, of 20 cents per acre.

Each plains Indian required for mimimum living per year 7 bison, for meat and hides. $57.50 divided by 7, gives a value of $8.21 to each bison.

Hornaday, p. 138, these notes, gives bison value of $5. excluding meat. Keating, p. 137, these notes, estimates 350 lbs. meat to each bison, and this at 2¢ per lb. adds a value of $5. more to Hornaday's estimate, and brings the value of each bison up to $10.00. Therefore, $8.21 is a reasonable minimum estimate for value of one bison.

Report of the United States National Museum; 1887, Washington, 1889. The Extermination of the American Bison by William T. Hornaday. VI. The Food of the Bison.

(427) (Buffalo, grama, or mesquite grass) On bottom lands, where moisture is abundant, this grass develops much more luxuriantly, growing in a close mass, and often to a height of a foot or more, if not grazed down, when it is cut for hay, and sometimes yields 1½ tons to the acre. In Montana and the north it is generally known as "buffalo grass," a name to which it would seem to be fully entitled, notwithstanding the fact that this name is also applied, and quite generally, to another species, the next to be noticed. (Southern buffalo grass).

Minutes of the Meeting of the Arapaho Business Council Held in the Office of the Superintendent, at 2:00 P.M. Friday, January 31, 1941. (Reply of Mr. Frank J. Smith, Manager of the Padlock Ranch to the inquiry of Mr. Orlando Antelope, Member of the Arapaho Business Council, Fort Washakie, Wyoming, Wind River Indian Agency.)

(20) Antelope: Stating a rough estimate on that range, just what number of cattle does it figure out we could run per acre.
Mr. Smith: It varys. On the Sears side, we could run less than on the other side. Mr. Rawie could give you those figures. Some portions it would take 30 acres per cow, and on other portions 40 acres per cow. This is for the year, but we will have feed to supplement the range. The Forestry Department can give you some good information on this.

Memoirs of General W.T. Sherman, written by himself, 2 volumes, New York, 1875. Volume II.

(389) To be strong, healthy, and capable of the largest measure of physical effort, the soldier needs about three pounds gross of food per day, and the horse or mule about twenty pounds.

Buffalo Days, by Colonel Homer W. Wheeler, U.S.A., Retired, Late of the 5th Cavalry, U.S. Army, (1876-1885), Indianapolis, 1923, 1925.

(233) The government's allowance of grain for a horse is twelve pounds daily and for a mule, nine.

46th Annual Report of the Bureau of American Ethnology, 1928-1929, Washington, D.C., 1930. Tribes of the Upper Missouri, The Assiniboin by Edwin T. Denig. Report, 1854-1855, to Isaac I. Stevens, Governor of Washington Territory. Edited by J.N.B. Hewitt. (Denig had charge of Fort Union on the Upper Missouri River.)

(460) It does not appear from our actual observation of 31 years, and pretty correct information of as many more of still an earlier date, that the principal animals have suffered diminution in the district of which we treat, viz, from the Sioux country to the Blackfoot, inclusive. How numerous they were in former years we do not know, but understand from old Indians that more buffalo have been seen in late years than were noticed 50 or 60 years since. It may be that the range of these animals is becoming more limited from the pressure of emigration westward. Yet this range is very extensive, reaching from the Platte to the Saskatchewan and from Red River to the Rocky Mountains, through all which immense district buffalo are

(461) found in great numbers. Out of this question appears to us to arise another, viz, Is not the decrease of the Indians from diseases communicated to them through white immigration and commerce, thereby reducing the number of hunters, equivalent to increasing the number of buffalo? And does not the remnant of the Indians at this time require fewer animals to feed, clothe, and provide all their necessaries, than the multitudes before commerce was established with them? We think this view merits consideration. If the buffaloes diminish, so do the Indians, and the diminution is not felt. The manner in which they hunted before firearms were introduced (by driving the buffaloes into pens) was infinitely more destructive than at present. Hundreds, perhaps thousands, were necessarily killed when a camp of a few Indians was stationed and when a small number would have sufficed. That commerce stimulates them to hunt is true, and a great many buffaloes are annually destroyed expressly for the hides. Yet this destruction is limited. An Indian's

family can only dress a certain number of hides during the hunting season. The hides in their raw state are of no value, and not traded, and can not be packed and carried when they move, which they are obliged to do in the spring, therefore no more are killed than the Indians can handle. Besides, there are but four or five months when the hair or fur of any animal is seasonable or merchantable and the rest of the year only enough are killed for meat, clothing, and lodges for their families. As far as we can be allowed to express an opinion, would say that the Indians by diseases brought about by commerce, and of late years by white immigration, will diminish and perhaps be destroyed as formidable bodies long before their game. The loss of the Indians from smallpox, cholera, measles, scarlet fever, venereal, fluxes, etc., within our own recollection can not be estimated at less than 15,000 to 20,000, without taking into consideration the consequent loss of propogation. Were the destruction less we think it would have the effect of increasing these animals so that many must die for want of proper grazing or be forced to seek other lands for food. This would reinstate us in our first position, that it is more probable the small number of Indians now in existence will disappear before their game, or at least will be so reduced as not to retard their increase. Immigration in settling the country would banish the buffalo from that part of it where these movements were going on, and force them to the alternative of scattering through the settlements and thus be destroyed, or, being confined and limited in their grazing, they would die for want of sufficient nourishment. They are a shy animal and will not remain where they are much troubled. Indian hunting has not this effect. The Indians do not occupy the proportionate space
(463) of a town of 100 houses to a county, and in some places not more to a State of the United States. Moreover, they herd with order, and in the winter, not being able to remain on the plains where there is no fuel, and very deep snow, are obliged to place their camps on the banks of streams and hunt merely the outskirts of these immense herds. The increase of buffaloes must be very great. Each cow has a calf yearly and the fourth year these also have calves. Now, supposing a band of 4,000 cows to increase for eight years without accident. The computation would be as follows:

	Say increase one-half cows	One-half bulls
4 times 4 equals 16 div. by 2 eq.	8	8
One-half increase	8	
Old stock	4	
	12 times 4 equals 48	
Old stock	12	
One-half bulls	8	
Total in 8 years	68,000	

Now supposing the whole number of buffalo cows in existance to be 3,000,000, which is certainly not an overestimate, then -

	One-half cows	One-half bulls
3 times 4 eq. 12 div. by 2 eq.	6	6
One-half increase in 4 years	6	
Old stock	3	
	9 times 4 eq. 36	
Stock	9	
Bulls	6	
Total in 8 years	51,000,000	

Making every calculation for their reduction in the many ways they are killed, or die by accident, and the consequent loss by propogation, yet being so numerous their ratio of increase is too great to diminish the whole number much by any of these means. The conclusion is that, in our opinion, both Indians and buffaloes, with all other game, would disappear in consequence of white immigration and occupation, though the Indians, being the smaller number, would be the first to vanish. Also that commerce, by stimulating the exertions of the hunters, can not increase their labor beyond what they now perform, and that, being limited, is too small to hasten the destruction or even diminution of any game as plentiful as the buffalo. The same argument does not apply to beaver, foxes, or even elk and deer. Should all the Indians be obliged to live on elk and deer only, and have no resources but the furs of the beaver and fox to get their supplies, a diminution of these animals would (463) soon be perceived and destruction follow, because their increase is not so great, neither were they ever so numerous. They are smaller, and as more would be required they would therefore soon disappear before the united hunts of all the Indians. But as they are not yet driven to hunt them they do not diminish, except the beaver, which has been, in this district, destroyed by large bodies of white trappers. Red foxes are not, we think, so numerous as formerly, though it may be they are not so much hunted. The trading posts or houses do not have the effect of diminishing or frightening away the buffalo any more than the Indian camps. Their locations are few and hundreds of miles apart, and their operations confined to within a few miles of their houses. Even while we are writing thousands of buffalo can be seen by looking out of the fort gates, which are quietly grazing on the opposite bluffs of the Missouri, and yet this post (Fort Union) has been established 27 years (1827). The only good hunting grounds for elk and deer are on the Yellowstone from 4 to 30 miles from the fort, beyond which though there are but few Indians they are not nearly so numerous. Beaver and foxes are caught every few days within one-half mile to 6 miles of the fort, not in numbers, certainly, neither are they very plentiful anywhere in this district. A trading post in a new country may have but few buffalo the first and second years and innumerable herds the third, or vice versa. There is no rule for this. The buffalo migrate and return. The other animals are scattered over an immense region of country, are difficult to kill, must be hunted separately, which is dangerous on account of enemies, consequently not followed, therefore they are not diminished. Thus no person can say to a certainty which are the first to disappear. Perhaps the entire destruction of game would lead to the Indians devoting their time to agricultural pursuits. It would force them to do that or starve, but judging from their present indisposition to work, and tribal organization, great distress would follow the sudden disappearance of their game and starvation thin their ranks before they would apply themsleves to hard labor.

Thirst and drowning in the winter:

Prehistoric Times as illustrated by Ancient Remains and the Manners and Customs of Modern Savages by The late Rt. Hon. Lord Avebury. Seventh Edition, New York, 1913.

(495) The Esquimaux. It may seem surprising that people who are surrounded by snow and ice should suffer from want of water, but the amount of heat required to melt snow is so great that a man without the means of obtaining fire might die of thirst in these Arctic regions as easily as in the sandy

(496) deserts of Africa. Any direct "resort to snow," says Kane, "for the purpose of allaying thirst, was followed by bloody lips and tongue; it burnt like caustic" (Arctic Explorations, vol. i. p. 190.). When the Esquimaux visited Captain Parry, they were always anxious for water, which they drank in such quantities "that it was impossible to furnish them with half as much as they desired" (L.c.,p.188.). In the extreme north, one of the principal duties of the women in the winter is to thaw snow over their lamps, feeding the wick with oil if it does not rise well of its own accord (Osborn's Arctic Journal, p. 17.), the natural heat of the room is not sufficient to melt snow, as the temperature of the huts is always kept, if possible, below the freezing-point. In South Greenland, however, the huts are built of turf, etc., and are very warm (Egede, l.c., p. 116). But we must remember that coolness, rather than heat, is required by the Esquimaux who live in snow dwellings, because if the temperature rises to thirty-two degrees, the continual dripping from the roof produces extreme inconvenience, and, in fact, the most unhealthy season is the spring, when the weather is too warm for snow huts and too cold for tents.

Manuscript of the late Major General Hugh L. Scott, U.S. Army, Manuscript Files, Bureau of American Ethnology, Smithsonian Institution, Washington, D.C. Subject: Buffalo.

Many (buffalo), however, were lost through natural causes, when the water holes and streams of the Missouri froze before the snow fell. The buffalo became crazy for want of water, crowded out on the ice of the Missouri and drowned by the hundred thousand. Alexander Henry, the younger, tells in 1806 of the breaking up of the ice in the Red River of the North, when a continuous stream of drowned buffalo floated down the river day and night for two weeks - another early account relates that one could travel down the Assiniboin River on both sides for 100 miles stepping from carcass to carcass of dead buffalo mired down along the river and scarcely ever putting ones foot to the ground. If then we add to these rivers, the Yellowstone, Tongue, Powder, the Platte, Arkansas, Cimaron, Salt Fork, the North and South Canadian, Washita, Red River of the South, with their tributaries, it is readily seen that the annual loss from natural causes alone must have been tremenducus. Yet the buffalo made head against all these causes until the white man came. The eraly explorers and fur traders left many accounts of the enormous numbers of buffalo they encountered, and I have seen myself at least 300,000 in one view from the top of a high hill overlooking a circle of 30 miles in diameter. Where are they now These numbers continued until the railroads penetrated their ranges and byproviding cheap transportation enabled the shipping of hides to market at a profitable rate, and the buffalo in that section soon disappeared, first in the South and then in the North. I was on the range north east of the Black Hills of Dakota when the end came in 1883. In January I had no difficulty in getting the necessary meat to feed my troop. There were at least 3,000 men then on the range killing buffalo for their hides and hauling these to the Northern Pacific Railway.

Drowning, and starvation and killing from prairie fires:

New Light on the Early History of the Greater Northwest, the Manuscript Journals of Alexander Henry and David Thompson, 1799-1814, Edited by Elliott Coues, In Three Volumes. Vol. I, The Red River of the North. New York, 1897.

(158) Monday, Dec. 1st. (1800) At sunset I saw a thick smoke rising at the foot of the mountain toward the Indian's camp, and soon after perceived the plains on fire. The weather was cloudy at dusk, and the wind blew strong from the N., causing the flame to make rapid progress, at ten o'clock it had extended as far as Salt river, presenting a dismal and lurid appearance. We could plainly distinguish the flames, which at intervals rose to an extraordinary height, as they passed through low spots of long grass or reeds. They then would cease their ravages for a few moments, soon afterward rise again with redoubled fury, and then die away to their usual height. The sight was awful, indeed, but as the wind was from us, and the fire was on the S. side of Park river, we had nothing to dread. If this fire spreads all over the country, we shall be hard up for provisions, as there will be no buffalo;

(159) nothing can stop its fury but snow or rain. This morning we had a light fall of snow, but it had no effect on the fire. Indians came in from the camp below, and even from the upper part of Two Rivers, to inquire into the cause of the conflagration. They supposed that the Sioux had destroyed this fort, and set fire to the grass, as is their custom when they return from war. I was uneasy for some time, fearing the Indians' camp at the hills was destroyed. But the Crees came in with a few skins, and informed us the fire had been lighted at their tents by accident. Charlo has lost his eldest daughter, who died a few days ago. He wants me to send him a small keg of rum, to drown his sorrows, which are very great. The Crees inform me they have seen a calf as white as snow in a herd of buffalo. White buffalo are very scarce. They are of inestimable value among the nations of the Missouri, but of none to the Crees and Assiniboines, except to trade with other nations. There are also some dirty gray, but these are very rare. I have frequent visits from the Red Lake Indians, who bring a few skins. On the 5th the fire was extinguished.

(187) Jan. 14th. (1801) At daybreak I was awakened by the bellowing of buffaloes. I got up, and was astonished when I climbed into the S.W. bastion. On my right the plains were black, and appeared as if in motion, S. to N. Opposite the fort the ice was covered; and on my left, to the utmost extent of the reach below us, the river was covered with buffalo moving northward. Out dogs were confined within the fort, which allowed the buffalo to pass within a few paces. I dressed and climbed oak (tree) for a better view. I had seen almost incredible numbers of buffalo in the fall, but nothing in comparison to what I now beheld. The ground was covered at every point of the compass, as far as the eye could reach, and every animal was in motion.

(174) (March) 30th. (1801) Rain broke up the ice, it drifted in large masses, making a great noise by crushing, tumbling, and tossing in every direction, driven by a strong current. Many trunks of trees and much mud are carried down on the ice. It continued to drift on the 31st, bearing great numbers of dead buffalo from above, which must have been drowned in attempting to cross while the ice was weak.

Wednesday, Apr. 1st. (1801) The river clear of ice, but drowned buffalo continue to drift by entire herds. Several are lodged on the banks near the fort. The women cut up some of the fattest for their own use, the

flesh appeared to be fresh and good. It is really astonishing what vast numbers have perished, they formed one continuous line in the current for two days and nights.* One of my men found a herd that had fallen through the ice in Park river and all been drowned; they were sticking in the ice, which had not yet moved in that part. The women had excellent sport in raising the back fat and tongues.

*(Footnote by Elliott Coues): This account is not exaggerated. John McDonnell's Journal of May 18th, 1795, when he was descending Qu'Appelle r., states: "Observing a good many carcasses of buffaloes in the river and along its banks. I was taken up the whole day with counting them, and, to my surprise, found I had numbered when we put up at night, 7,360, drowned and mired along the river and in it. It is true, in one or two places, I went on shore and walked from one carcass to the other, where they lay from three to five files deep" (Masson, I. 1889, p. 394). It is probable that the total number of buffalo killed by man in those days was insignificant in comparison with the destruction wrought by the warring of nature's elements against the poor brutes.

(175) 11th. (April, 1801) Fine warm weather. Buffalo are now mostly with calves of this spring.

18th. (April, 1801) Rain, drowned buffalo still drifting down the river, but not in such vast numbers as before, many have lodged on the banks and along the beach.

(176) 25th. (April, 1801) Drowned buffalo drift down river day and night.

(177) (April 29th, 1801) On chasing a herd at this season, the calves follow until they are fatigued, when they throw themselves down in high grass and lie still, hiding their heads, if possible. On coming to them they start to run, but seeing only the person and his horse, remain quiet and allow themselves to be taken. Having been a little handled, they follow like dogs. But if they are not discovered by the hunter they keep still until their mothers return in search of them, as I observed to-day - while cutting up a calf on a low piece of ground. I heard something running toward me, and on looking up saw a large cow coming over the little rising ground directly at me. I had only time to catch up my gun and fire, at which she turned about at full speed. My consternation was so great I did not take proper aim, and so only slightly wounded her; she looked very fierce, and I believe, had my gun been a few yards further off, she would have attacked me. 30th. (April, 1801) Chased a herd and killed two. They are now getting in very good flesh. Killed also two calves, whose thighs make excellent steaks. Drowned buffalo drift as usual. Indians making skin canoes and preparing to embark.

May 1st. (1801) The stench from the vast numbers of drowned buffalo along the river was intolerable. Gummed my canoes. 2d. (May, 1801) Two hunters arrived in a skin canoe from Grandes Fourches (Grand Forks) with 30 beaver and 7 bear skins. They tell me the number of buffalo lying along the beach and on the banks above passes all imagination, they form one continuous line, and emit a horrid stench. I am informed that every spring it is about the same.

(178) (May 4, 1801) Encamped at the Bois Perce (Pierced Wood) with my people, I was actually prevented from taking supper by the stench of drowned buffalo that lay on the banks in a state of putrefaction.

(338) Oct. 4th. (1803) Fire is raging at every point of the compass; thick clounds of smoke nearly deprive us of the sight of the sun, and at night the view from the top of my house is awful indeed. In every direction are flames, some leaping to a prodigious height as the fire rushes through willows and long grass, or low places covered with reeds and rushes. We apprehended no danger, as the fire had already passed near the fort.

(338) (Oct. 24th. 1803) On my return I killed five
(339) bulls. The plains are burned almost everywhere, only a few small spots have escaped the fury of the flames.
(332) 23d. (Dec. 1803) (Buffalo) Cows begin to appear, but the great scarcity of grass keeps them always on the walk in search of food.
(353) 27th. (Oct. 1804) Fire in the plains in every direction.
Nov. 1st. (1804) Fire running all over the country. X.Y. (the rival trading company) ladies busy stealing the gleanings of my potato field.
(353) Nov. 25th. (1804) Plains burned in every direction and blind buffalo seen every moment wandering about. The poor beasts have all
(354) the hair singed off, even the skin in many places is shriveled up and terribly burned, and their eyes are swollen and closed fast. It was really pitiful to see them staggering about, sometimes running afoul of a large stone, at other times tumbling down hill and falling into creeks not yet frozen over. In one spot we found a whole herd lying dead. The fire having passed only yesterday these animals were still good and fresh, and many of them exceedingly fat. Our road was on the summit of the Hair hills, where the open ground is uneven and intercepted by many small creeks running eastward. The country is stony and barren. At sunset we arrived at the Indian camp, having made an extraordinary day's ride, and seen an incredible number of dead and dying, blind, lame, singed, and roasted buffalo. The fire raged all night toward the S.W.
(341) (Mandan Village, Sunday, July 20, 1806) I observed opposite each village an immense pile of this wood, including some trees of amazing size. When they collect the drift-wood, great numbers of drowned buffalo, that have perished in attempting to cross above when the ice was getting bad, float down; those animals the natives are very careful to haul onshore, as they prefer such flesh to that killed in any other way.
(349) (Hidatsa Village, Monday, July 21, 1806) Early in the spring they return to sow their fields, while the men are employed getting drift-wood and drowned buffalo.
(435) (Red River, October 31, 1807) Buffalo in abundance, although the plains were lately burned.

Death by freezing rare:

New Light on the Early History of the Greater Northwest, etc., continued. Journal of Alexander Henry.

(171) (Red River, Sunday, February 28, 1801) An Indian brought in a calf of this year, which he found dead. It was well grown, and must have perished last night in the cold. This was thought extraordinary; they say it denotes an early spring.

Loss of bison calves from abandonment and predatory animals:

Report of the United States National Museum, 1887. Washington, 1889. The Extermination of the American Bison by William T. Hornaday.

(400) Colonel Dodge states that the very young calves of a herd have to depend upon the old bulls for protection, and seldom in vain. The mothers abandon their offspring on slight provocation, and even none at all sometimes, if we may judge from the condition of the little waif that fell into our hands. Had its mother remained with it, or even in its neighborhood, we should at least have seen her, but she was nowhere within a

radius of 5 miles at the time her calf was discovered. Nor did she return to look for it, as two of us proved by spending the night in the sage-brush at the very spot where the calf was taken. Colonel Dodge declares that "the cow seems to possess scarcely a trace of maternal instinct, and, when frightened, will abandon and run away from her calf without the slightest hesitation. --- When the calves are young they are always kept in the center of each small herd, while the bulls dispose themselves on the outside." (Plains of the Great West, pp. 134, 135.) Apparently the maternal instinct of the cow buffalo was easily mastered by fear. That it was often manifested, however, is proven from Audubon and Bachman:(Quadrupeds of North America, vol. II, pp. 38, 39 "Buffalo calves are drowned from being unable to ascend the steep banks of the rivers across which they have just swam, as the cows cannot help them, although they stand near the bank, and will not leave them to their fate unless something alarms them. On one occasion Mr. Kipp, of the American Fur Company, caught eleven calves, their dams standing near the top of the bank. Frequently, however, the cows leave the young to their fate, when most of them perish. In connection with this part of the subject, we may add that we were informed, when on the Upper Missouri River, that when the banks of that river were practicable for cows, and their calves could not follow them, they went down again, after having gained the top, and would remain by them until forced away by the cravings of hunger. When thus forced by the necessity of saving themselves to quit their young, they seldom, if ever, return to them. When a large herd of these animals are crossing a river, the calves or yearlings manage to get on the backs of the cows, and are thus conveyed safely over."

(433) While the buffalo cows manifested a fair degree of affection for their young, the adult bulls of the herd often displayed a sense of responsibility for the safety of the calves that was admirable, to say the least. Those who have had opportunities for watching large herds tell us that whenever wolves approached and endeavored to reach a calf the old bulls would immediately interpose and drive the enemy away. It was a well-defined habit for the bulls to form the outer circle of every small group or section of a great herd, with the calves in the center, well guarded from the wolves, which regarded them as their most choice prey. Colonel Dodge records a remarkable incident in illustration of the manner in which the bull buffaloes protected the calves of the herd (Plains of the Great West, p. 135.). "The duty of protecting the calves devolved almost entirely on the bulls. I have seen evidences of this many times, but the most remarkable instance I have ever heard of was related to me by an army surgeon, who was an eye-witness. He was one evening returning to camp after a day's hunt, when his attention was attracted by the curious action of a little knot of six or eight buffalo. Approaching sufficiently near to see clearly, he discovered that this little knot were all bulls, standing in a close circle, with their heads outwards, while in a concentric circle at some 12 or 15 paces distant sat, licking their chaps in impatient expectancy, at least a dozen large gray wolves (excepting man, the most dangerous enemy of the buffalo).

(434) "The doctor determined to watch the performance. After a few moments the knot broke up, and, still keeping in a compact mass, started on a trot for the main herd, some half a mile off. To his very great astonishment, the doctor now saw that the central and controlling figure

of this mass was a poor little calf so newly born as scarcely to be able to walk. After going 50 or 100 paces the calf laid down, the bulls disposed themselves in a circle as before, and the wolves, who had trotted along on each side of their retreating supper, sat down and licked their chaps again; and though the doctor did not see the finale, it being late and the camp distant, he had no doubt that the noble fathers did their whole duty by their offspring, and carried it safely to the herd."

Decrease of bison herds from unknown causes:

David Thompson's Narrative of his Explorations in Western America, 1784-1812, Edited by J.B. Tyrrell, Publications of the Champlain Society, XII, Toronto, 1916. (Chapter XXI, Smallpox Among the Indians.)

(333) All the Wolves and Dogs that fed on the bodies of those that died of the Small Pox lost their hair especially on the sides and belly, and even for six years after many Wolves were found in this condition and their furr useless. The Dogs were mostly killed. With the death of the Indians a circumstance took place which never has, and in all probability, never will be accounted for. I have already mentioned that before that dreadful disease appeared among the Indians they were numerous, and the Bison, Moose, Red, and other Deer more so in proportion and Provisions of Meat, both dried and fresh in abundance. Of this all the Traders and Indians were fully sensible, and it was noted by the Traders and Natives, that at the death of the latter, and there being thus reduced to a small number, the numerous herds of Bison and Deer also disappeared both in the Woods and in the Plains, and the Indians about Cumberland House declared the same of the Moose, and the Swans, Geese and Ducks with the Gulls no longer frequented the Lakes in the same number they used to do; and where they had abundance of eggs during the early part of the Summer, they had now to search about to find them. As I
(334) was not in the country at this time I can only give the assertion of the Traders and the Natives, who could have no interest in relating this sad state of the country. In the early part of September 1786 I entered these countries and from that time can speak from my own personal knowledge. In the following October, six men and myself, were fitted out with a small assortment of goods, to find the Peeagan Indians and winter with them: to induce them to hunt for furrs, and make dried Provisions; to get as many as possible to come to the houses to trade, and to trade the furrs of those who would not come. Each of us had a Horse, and some had two furnished by ourselves.
(335) For three and twenty days we marched over fine grounds looking for the Indians without seeing any other animals than a chance Bull Bison, from the killing of a few we procured our provisions. We found a Camp on the south side of the Bow River from its tender grass the favorite haunts of the Bison, yet this camp had only provision by daily hunting, and our frequent removals led us over a large tract of country, on which we rarely found the Bisons to be numerous, and various camps with whom we had intelligence were in the same state with the Camp we lived with. It is justly said, that as Mankind decrease, the Beasts of the earth increase, but in this calamity the natives saw all decrease but the Bears. And dried provisions of meat before so abundant that they could not be traded, were now sought as much as furrs. The enquiries of intelligent Traders into this state of the Animals from the Natives were to no purpose. They merely answered, that the Great Spirit having brought this calamity on

Albino Bison, References to and Notes on: Note Book III, Miscellaneous Notes on North American Indians, Page 154, facing Page 154, and facing Page 155.

Bison, Early References to and Descriptions of, Note Book III, supra, Pages 155 and 156, and facing Pages 155 and 156.

Bison, De Vaca and Coronado, and Myth of Discovery in Montezuma's "Zoo," Note Book III, supra, Pages 157 to 163, inclusive, and facing Pages 157 to 163, inclusive. Also Memorandum in back pocket of Note Book III.

Bison, Causes and effects of destruction of: Note Book V, pp. 338-364.

them, had also taken away the Animals in the same proportion as they were not wanted, and intimating the Bisons and Deer were made and preserved solely for their use; and of there were no Men there would be no Animals. The Bisons are vagrant, wandering from place to place over the great Plains, but the Moose and other Deer are supposed to keep within a range of ground, which they do not willingly leave, but all were much lessened in number. A few years after I passed over nearly the same grounds and found the Bisons far more numerous.

Destruction and depletion of range by grazing of bison:

Original Narratives of Early American History. Spanish Explorers in the Southern United States, 1538-1543. New York, 1907. The Narrative of Alvar Nunez Cabeca de Vaca (1538-1536), Edited by Frederick W. Hodge.

(44) The day on which we arrived was the sixth of November (1528). --- After the people had eaten, I ordered Lope de Oviedo, who had more strength and was stouter than any of the rest, to go to some trees that were near by, and climbing into one of them to look about and try to gain knowledge of the country. He did as I bade, and made out that we were on an island. He saw that the land was pawed up in the manner that ground is wont to be where cattle range, whence it appeared to him that this should be a country of Christians; and thus he reported to us.
(68) Cattle come as far as here. Three times have I seen them and eaten of their meat. I think they are about the size of those in Spain. They have small horns like the cows of Morocco; the hair is very long and flocky like the merino's. Some are tawny, others black. To my judgment the flesh is finer and fatter than that of this country. Of the skins of those not full grown the Indians make blankets, and of the larger they make shoes and bucklers. They come as far as the sea-coast of Florida, from a northerly direction, ranging through a tract of more than four hundred leagues, and throughout the whole region over which they run, the people who inhabit near, descend and live upon them, distributing a vast many hides into the interior country.

New Light on the Early History of the Greater Northwest, The Manuscript Journals of Alexander Henry and David Thompson, 1799-1814, Edited by Elliott Coues. New York, 1897. Vol. I. The Red River of the North. Henry.

(64) (Above Rat River, August 26, 1800) The ravages of buffaloes at this place are astonishing to a person unaccustomed to these meadows. The beach, once a soft black mud into which a man would sink knee-deep, is now made hard as pavement by the numerous herds coming to drink. The willows are entirely trampled and torn to pieces, even the bark of the smaller trees is rubbed off in many places. The grass on the first bank of the river is entirely worn away. Numerous paths, some of which are a foot deep in the hard turf, come from the plains to the brink of the river, and the vast quantity of dung gives this place the appearance of a cattle yard.
(193) (Red River, February 15, 1802) Buffalo have destroyed all the grass, and our horses are starving.
(375) (Journey from Mandan-Hidatsa Villages to Cheyenne Camp, July 24, 1806) There must have been an astonishing number of buffalo in these parts during the summer, and, indeed, at all seasons. The grass is entirely destroyed, and the numerous deep ruts, both old and fresh, almost touch each other, and run in every direction.