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CRADLES OF THE AMERICAN ABORIGINES.*

By OTIS T. MASON.

Many questions in anthropology depend for their answer upon a correct knowledge of the manner in which the child passes the first year of its life.

It is commonly believed that the shape of the head and, indeed, of the whole frame is modified by the cradle. From time to time the National Museum at Washington has come into possession of cradles and cradle-frames from the farthest north of their limit to the farthest south. A description of these with accurate drawings is herein given in order to throw further light upon the problem.

Deformation of the head, as is well known, is both designed and undesigned. Among the Chinuks and other tribes near the mouth of the Columbia River and northward, flattening of the head was intentionally practiced in a manner to be hereafter described.

Undesigned head-shaping is believed to have resulted among the Mound people as well as among our modern Indians, especially in the occipital region, from the contact of the soft and pliable head of the infant with the cradle-board or frame, even with the downy pillow.

In both Americas the majority of aboriginal children were confined in some sort of cradle from their birth until they were able to walk about. The cradle during this period serves many purposes:

- (1) It is a mere nest for the helpless infant.
- (2) It is a bed so constructed and manipulated as to enable the child to sleep either in a vertical or a horizontal position.
- (3) It is a vehicle in which the child is to be transported, chiefly on the mother's back by means of a strap over the forehead, but frequently dangling like a bundle at the saddle-bow. This function, of course, always modifies the structure of the cradle, and, indeed, may have determined its very existence among nomadic tribes.

* I wish to express my sincere thanks to Dr. J. H. Porter for the valuable notes and references which accompany this paper.

(4) It is indeed a cradle, to be hung upon the limbs to rock, answering literally to the nursery rhyme:

Rock a-bye baby upon the tree top,
When the wind blows the cradle will rock,
When the bough bends the cradle will fall,
Down will come baby, and cradle, and all.

(5) It is also a play-house and baby-jumper. On many, nearly all, specimens may be seen dangling objects to evoke the senses, foot-rests by means of which the little one may exercise its legs, besides other conveniences anticipatory of the child's needs.

(6) The last set of functions to which the frame is devoted are those relating to what we may call the graduation of infancy, when the papoose crawls out of its chrysalis little by little, and then abandons it altogether. The child is next seen standing partly on the mother's cincture and partly hanging to her neck or resting like a pig in a poke within the folds of her blanket.

An exhaustive treatment of this subject would include a careful study of the bed and especially of the pillow, in every instance, as well as of the frame. But collectors have been extremely careless in this regard. Very few cradles in the National Museum are accompanied with the beds and pillows. Were it not that here and there a traveler or a correspondent had made observations on the field, a hopeless lacuna would be in our way. Much remains to be done exactly at this point, and future investigators must turn their attention to this subject especially.

In this investigation much depends upon the age at which the child is placed in the cradle, the manner of bandaging and of suspending. Also there are a thousand old saws, superstitions, times and seasons, formularies, rites and customs hovering around the first year of every child's life in savagery that one should know, in order to comprehend many things attached to the cradle and its uses. Indeed, no one but an Indian mother could narrate the whole story in detail. Awaiting information from these sources, we shall describe as faithfully as possible the material now stored in the National Museum.

The method pursued in this description is that adopted in the series already begun in the report of 1884. The design is to apply the rules and methods of natural history to the inventions of mankind. We follow up the natural history of each human want or craving or occupation separately with a view to combining them into a comparative psychology as revealed in things.

Again, Bastian's study of "great areas" finds a beautiful illustration at this point in the fact that the cradle-board or frame is the child of geography and of meteorology. In the frozen North the Eskimo mother carries her infant in the hood of her parka whenever it is necessary to take it abroad. If she used a board or frame the child would perish with the cold. Indeed, the settled condition of the Eskimo does away with the necessity of such a device.

It is somewhat difficult to mark the southern limit of the cradle frame owing to the great elevations in Mexico and middle America. The National Museum does not possess a cradle frame of any tribe living south of the northern tier of Mexican States until we cross the equator. The most southern tribes of Mexico from which specimens have come, are the Pimas, Yumas, and Yaquis. It is not here denied, however, that tribes farther south use this device.

No attempt is here made to exhaust the study of child life in savagery. All who read this paper are doubtless familiar with the work of Dr. Ploss, entitled "Das Kind."*

The most exhaustive analysis of the subject will be found in the treatise of Dr. E. Pokrooski, of Moscow, published in the fourteenth volume of the Transactions of the Society of Friends of Natural Science, Anthropology, etc. The work is devoted especially to the different peoples of Russia. The table of contents is here appended because the volume is likely to be overlooked, and in order to show the ramifications of this interesting theme:

- Chapter I. Attention paid to the protection and development of the embryo, heredity, relations of the sexes, condition of woman, consanguine marriages, polygamy and polyandry, marriage in classical antiquity, care taken of pregnant women among ancient and modern peoples.
- Chapter II. Abortion and infanticide; motives: superstitions, fear of monsters, misery, etc.; legislation relative to abortion and infanticide.
- Chapter III. Parturition and the condition of the new born.
- Chapter IV. Care relative to the umbilical cord.
- Chapter V. Dwelling of the infant in the family of the parents.
- Chapter VI. Care of the skin.
- Chapter VII. Bathing of infants.
- Chapter VIII. Cold baths and baptism, in Europe, in Thibet, etc.
- Chapter IX. Dressing of infants among ancient peoples and modern savages.
- Chapter X. Dressing of Russian children.
- Chapter XI. Enameling (emmaillotement).
- Chapter XII. Kneading and rectification of the body of the infant.
- Chapter XIII. Artificial deformation of the skull, ancient macrocephals, deformation among modern peoples, especially in Russia, Caucasia, Poland, Lapland, etc.
- Chapter XIV. Influence of the infant's posture in its bed upon the deformation of the occiput, custom of bedding children among the Thracians, Macedonians, Germans, and Belgians of the sixteenth century, and among the modern Asiatics. The form of the occiput in Russians of the Kourgans, from the craniological collections of Moscow.
- Chapter XV. The cradle among different peoples.
- Chapter XVI. The cradles of the Russians.
- Chapter XVII. Cradles among other peoples of Russia, Tsiganis, Fins, Esths, Livonians, Laps, Poles, Jews, Lithuanians, Tcheremis, Bashkirs, Nogai, Sarts, Kirghiz, Kalmuks, Yakuts, Buriats, Tunguses, Soïotes, Woguls, Samoides, Goldoi, Koriaks, Kamchadales, Caucasians, etc.
- Chapter XVIII. Methods of putting children in their beds, of carrying them and transporting them, dependence on climate, mode of life; bearing them on the arm, back, neck, head, hip; in bags, paniers, chests, skins, etc.; customs of the Chinese, Negroes, Hottentots, American Indians, Kamchadales, Japanese, etc., in this regard.

* Dr. H. Ploss. *Das Kind in Brauch und Sitte der Völker*. Anthropologische Studien. Leipzig (1864), Grieben, 2 vols., 8vo.

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- Chapter XIX. Amusement of the child by the mother in Russia.
 Chapter XX. Accustoming the child to sit and to go on all fours.
 Chapter XXI. The upright position and walking.
 Chapter XXII. Importance of food.
 Chapter XXIII. Suckling among various peoples, ancient and modern.
 Chapter XXIV. Among the Russians.
 Chapter XXV. Among other peoples of Russia.
 Chapter XXVI. Ethnic mutilations of children: tattoo, depilation, piercing the nose, the ears, the lips, or the cheeks; filing and removing the teeth, castration, circumcision, and similar mutilations; corset, Chinese feet, high-heeled boots, etc.
 Chapter XXVII. Games, sports, and amusements of children.
 Chapter XXVIII. Treatment of the maladies of children among different peoples. Popular child medicine in Russia, Germany, England, Switzerland, Dalmatia, Kalmucks, Kirghiz, Caucasians, ancient Hindoos, Iranians, etc.
 Chapter XXIX. Care relative to the corporeal development of children and the means employed to toughen and fortify them; seclusion of children, asceticism, horsemanship, physical and warlike training of children among savages, etc.
 Chapter XXX. Rôle played by animals in the education of man—cows, goats, dogs, she wolves, apes, etc.
 Chapter XXXI. Physical education among the children of Russian peasants, and the results.
 Chapter XXXII. Conclusions.

ESKIMO CRADLES.*

The Hyperboreans or Eskimos skirt the Arctic coast in Greenland, Labrador, the islands north of Canada, at the mouth of the Mackenzie River, all around Alaska to Mount St. Elias. In all of these areas the mother has the hood of her skin robe or parka made very large, so as to carry therein her babe, which nestles around the mother's neck secure from the cold. (Figs. 1 and 2.) The home life of the Hyperboreans is more permanent in its character than that of the southern Indians. There is provision made in the huts of the Eskimo for any babies that may be present.

The Indians contiguous to the Eskimo in Alaska and northeastern Canada belong to the great Tinnéan or Athapascan stock. They are called Kutchin in Alaska, and in the basin of the Mackenzie River have names ending with *tena* or *dene*, or an equivalent vocable. In the language of the Hudson Bay fur traders they bear various titles, most of

* Lyon, Capt. G. F. (Private Journal, *i. e.* of Parry's Arctic Ex., London, 1824, 8vo), remarks that the Eskimo women of Savage Islands had large hoods for the purpose of carrying their young children stark naked against the back (p. 20). Of the Eskimo in general he says that they have "slightly bowed" legs (p. 318). Their features of the face are diversified in an extraordinary manner (p. 309). About a sixth part * * * had high Roman noses (p. 310). Everywhere the hood answers the purpose of a child's cradle (p. 315).

Rink, Dr. Henry (Danish Greenland, London, 1877, 12mo) asserts that the external curvature of the legs is general among Eskimo women of middle age, and that it is due to the cramped position in which they sit on the ledge in the hut (p. 154).

Heriot, G. (Travels through the Canadas, London, 1807, 4to) describes the "Eskimaux" women of Newfoundland as having "their capuchins * * * much larger

them terms of derision.* The classification of the Tinné of Alaska is given by Dall.



Fig. 1.

ESKIMO WOMAN OF POINT BARROW,
CARRYING CHILD.

(From photograph.)



Fig. 2.

ESKIMO WOMAN OF POINT BARROW,
CARRYING SLEEPING CHILD.

(From photograph.)

The Tinnéan tribes use some sort of device in which to lash their children during the first year. One should expect, however, to find these Indians also copying the Eskimo cradle hood.† Strachan Jones, towards their shoulders" than those of the men, "in order to cover their children when they wish to carry them on their backs" (p. 23).

Franklin, Capt. J. (Narrative of Second Expedition, London, 1828, 4to): The same kind of hood, for the same purpose as that among the Loucheux, was seen in use among the Eskimo women near the mouth of the Mackenzie, on the Arctic coast (p.

* Contributions to N. A. Ethnology, Bur. Ethnology, 1, 24; also The Native Tribes of Alaska, A. A. A. S., Ann Arbor, 1885.

† Cradles (Dixon's Voyage, p. 239): It might be imagined that the children of these savages would enjoy the free and unrestrained use of their limbs from their earliest infancy. This, however, is not altogether the case. Three pieces of bark are fastened together, so as to form a kind of chair. The infant, after being wrapped in furs, is put into this chair, and lashed so close that it can not alter its posture, even with struggling, and the chair is so contrived that when a mother wants to feed her child, or give it the breast, there is no occasion to release it from its shackles. Soft moss is used by the Indian nurse to keep her child clean; but little regard is paid to this article, and the poor infants are often terribly excoriated; nay, I have frequently seen boys of six or seven years old whose posteriors have borne evident marks of this neglect in their infancy.

Franklin, Capt. J. (Narrative of Second Expedition, London, 1828, 4to): The hood of the dress among the Lower Loucheux women is "made sufficiently wide to admit of their carrying a child on their back" (p. 28).

in his Notes on the Tinué or Chippewyan Indians, gives the figure of an infant sitting on a diminutive "bedstead," having a soft fur seat. The body of the child is bandaged to the high back of the seat. (Fig. 3.)



Fig. 3.

CHIPPEWYAN CHILD-FRAME.
(From Notes on the Tinué Indians.
By Strachan Jones.)

The same observation just made concerning the Eskimo is true of the Indians on the Upper Yukon. Dr. Dall informs me that their homes are permanent, and that there therefore is no need of the cradle-frame. The infant, if lashed at all, is fastened in a kind of coal-scuttle-shaped cradle, and at night sleeps in a hammock or on the banquette.

E. W. Nelson has sent to the Smithsonian Institution, among the many thousands of specimens collected throughout the entire western Eskimo area, the model of a trough-shaped cradle of birch bark, made from three pieces, forming, respectively, the bottom, the top and hood, and the awning. (Fig. 4.) The two pieces forming the bottom and the hood overlap an inch and a half, and are sewed together with a single basting of pine root, with stitches half an inch long. Around the bor-

118). In Dr. Richardson's narrative of his expedition eastward from the mouth of the Mackenzie, he speaks of coast Eskimo women who "draw their children out of their wide boots, where they are accustomed to carry them naked" (I, p. 226). Franklin, Parry, Back, Richardson, and the more modern explorers, speak of the flat nose of the Eskimo. As in Oceanica this may be the result of compression, since Sir John Ross (Voyage to Baffin's Bay, London, 1819, 4to) found "small straight" noses and "large aquiline" noses among the Arctic Highlanders of Prince Regent's Bay (pp. 126, 127).

Holmberg says of the Koniagas (Eskimos), that the posterior part of the head is "not arched, but flat." The description of their huts and sleeping places suggests that this may be the effect of hard pillows or head-rests on an incompletely ossified skull. (Bancroft, Nat. Races of Pacific States, vol. I, p. 72.)

Ledyard, who accompanied the expedition of Captain Cook to the North Pacific, noticed the bowed legs of the Aleuts, and attributed it to their position in the boats, in which they spend so much of their time. (Bancroft, Nat. Races of Pacific States, vol. I, p. 88.)

Hall, C. F. (Life with the Eskimo, London, 1864, 12mo): Fac-simile of an Eskimo wood-cut showing mother and child, with position of latter in hood (vol. I, p. 53). Plate of child in what he calls (p. 98, vol. I) "the baby pouch" (vol. I, p. 159). "The infant is carried naked in the mother's hood, yet in close contact with the parent's skin" (vol. I, p. 189). Compression of head (vol. II, p. 313). This is lateral, made by the hands, and by a skin cap. But no cap could exert lateral pressure, and the words "a little skin cap placed lightly over the compressed head, which is to be kept there one year" (vol. II, p. 313), may not convey this idea.

Hearne, Samuel, in the narrative of his journey from Prince of Wales Fort, in Hudson Bay, to the Northern Ocean (London, 1795), informs us that no cradles are in use among the northern Indian tribes between 59° and 68° north. He says that the majority of the children are bow-legged from the way in which they are carried.

Portlock, in his Voyage Round the World (London, 1789), makes observations on the general distortion of the legs among Indians of Prince William's Sound (p. 248).

Kerr, Robert (Collection of Voyages and Travels, London, 1824, 8vo vol. XVI): In Cook's description of the natives of Nootka Sound, the same distortion of legs, from position in canoe, is noticed as has been before referred to. (Vid. notes, *passim*, p.

der of the body and just under the margin, continuing around the border of the hood and awning, lies a rod of osier. A strip of birch bark laid on the upper and inner side of the margin serves as a stiffener. It is sewed down by an ingenious basting, with stitches an inch or more long, which pass down through the two thicknesses of birch bark, around the osier twig that lies just below the margin, and up again through the two thicknesses of birch bark by another opening, to commence the next stitch. The hood is formed by puckering the birch bark after the manner of a grocer's bag. The bordering osier is neatly sewed to the edge of the hood and awning by a coil of split spruce root. Rows of beads of many colors adorn the awning piece. In a country intolerable by reason of mosquitoes it is not strange that provision for sustaining some sort of netting should have been devised. Playthings of various kinds are also hung to this awning for the hands and eyes and ears of the infant occupant, and it is quite sure that this bow or hood saves the face of the child many hurtful blows from a fall.*

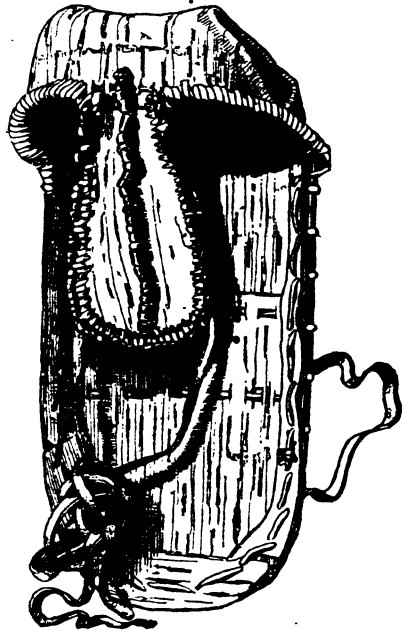


Fig. 4.

BIRCH-BARK CRADLE FROM YUKON RIVER,
ALASKA.

(Cat. No. 32965, U. S. N. M. Norton Sound. Collected
by E. W. Nelson.)

232.) (Voyages, etc.). Captain King states that he observed the custom of carrying children in the hood among the Chuckchees of the east coast (xvi, 364, note). On the other coast Captain Cook remarked of the dresses at Prince William's Sound that "some" only had hoods (xvi, 280).

* Long, J. (Voyages and Travels of an Indian Interpreter, London, 1791, 4to): He describes the cradle of the Chippewas, who range north to the Arctic Circle; describes also the position and mode of carrying the child, and its swathing; states that before the French occupation of Canada there were no swathings in use, failing material for them (pp. 60, 61). Before the French period the cradle was "a trough filled with dry rotten-wood dust," in which the baby, "covered with furs," was "kept until weaned" (p. 51). The head of the child in the Chippewa cradle is protected by a hoop (p. 60).

Back, Captain (Narrative of Arctic Land Expedition, Philadelphia, 1836, 8vo): On the shore of Great Slave Lake he saw infants "swaddled and unable to stir."

* Harmon's Journal. (The title page of this work is lost. Harmon's expedition was made in 1800, and, under the auspices of the Northwest Company, he traveled through the same country as Mackenzie.) Speaking of the Sauteux, Crees, Assiniboines, Rapid Indians, Blackfeet, Bloods, Sussees, Cautonies, Muskagoes, Chipeways, Beavers, Sicaunies, Tâ-cullias, Ate-nâs, and Nâte-ote-tains, he says that they all use the cradle-board (p. 316). Harmon thus describes the cradle-board of the Indians of British America: "All Indian children, when young, are laced in a kind of bag * * *

Ross, in describing the Eastern Tinnéh, says:* "Among the Eastern Tinnéh, immediately after birth, without washing, the infant is laid naked on a layer of moss in a bag made of leather, and lined with hare-skins. If it be summer the latter are dispensed with. This bag is then securely laced, restraining the limbs in natural positions, and leaving the child freedom to move the head only. In this phase of its existence it resembles strongly an Egyptian mummy." Cradles are never used; but this machine, called a "moss bag," is an excellent adjunct to the rearing of children up to a certain age, and has become almost if not universally adopted in the families of the Hudson Bay Company's employés. The natives retain the use of the bag to a late period, say until the child passes a year, during which time it is never taken out except to change the moss. To this practice, continued to such an age, I attribute the turned toes and rather crooked legs of many of these Indians. One is somewhat reminded by this process of the Eskimo sleeping-bag. In the National collection are several small bags of the same pattern, but the label does not authorize the conclusion that these small bags were used as cradles for infants.

Bordering the Eskimo in the Labrador Peninsula live the Naskopi or Scoffies, in latitude as far north as 53 degrees. Lucien Turner spent two years among them, and has collected much precious information. He tells us that when the Naskopi child is born it is not washed or allowed to

made of a piece of leather. * * * Some moss is laid in the bottom of this bag, the child is laid into it, and moss is inserted between its legs. The bag is then laced to the fore side of the child as high as its neck. This bag is laid upon a board, to which it is fastened by means of a strip of leather" (p. 316). Further details of arrangement, ornamentation, and nursing (pp. 316, 317).

Mackenzie, Sir A. (*Voyages from Montreal to the Frozen and Pacific Oceans*, London, 1801, 4to): Descriptive of the "swaddling-board" used by the Beaver Indians (p. 149).

N. B.—This board, about 2 feet long, covered with a bed of moss, to which it (the child) is fastened by bandages "was in use in a sub-arctic climate"! Equally opposed to Hearne's statement concerning the absence of cradles in these regions is Mackenzie's full description of a board cradle "in which the child, after it had been swathed, is placed on a bed of moss." Head compression practiced here, *i. e.*, near Northwest coast; tribe not named (p. 371). It is to be remarked that Mackenzie speaks of this last as a "*new kind of cradle*," the inference being that the Beaver "swaddling-board" was used by the Chippewa, Knisteneaux, Assiniboines, etc.

Fitz William (*Northwest Passage by Land*, p. 85) says that the cradle is "a board with two side flaps of cloth, which lace together up the center. The child is laid on its back on the board, packed with soft moss, and laced firmly down with its arms to its sides, and only the head at liberty. The cradle is slung on the back of the mother when traveling, or reared against a tree when resting in camp, the child being only occasionally released from bondage for a few moments. The little prisoners are remarkably good; no squalling disturbs an Indian camp."

Whymper (*Alaska*, p. 229): "The Tenan Kutchin (Tinneh) children are carried in small chairs made of birch bark." Richardson (*Journal* I, 384) makes the same statement. Bancroft (*Nat. Races, etc.* I, 131) says: "The women carry their infants in a sort of bark saddle, fastened to the back; they bandage their feet in order to make them small."

* Smithsonian Report, 1856, p. 302.

take the breast until three days have elapsed; it is considered to weaken the infant if permitted to take the breast before that time. The mother prepares sphagnum moss by beating it until it becomes quite soft and fluffy. A portion of this moss is placed about the child, and it is then wrapped in clothes or skins. The swaddling process begins at the feet and wraps the lower limbs close together; the trunk is also swathed as far as the neck, until the child resembles a cocoon. At earliest infancy the arms are wrapped next the body, but when several months old those limbs are free, except at night. The reason of this is to make them grow straight and afford the mother convenience in handling them when on a journey, or to prevent them from rolling about the tent and into the fire. The bandages are removed once a day and a clean quantity of moss supplied. Water is never given to the child to drink until it is old enough to help itself—an occasion of remark among the women—for it marks an event in the infant's life.

Figure 5 is from a sketch in the *Century Magazine*, taken at Cape Breton, and gives us an excellent example of the combinations which

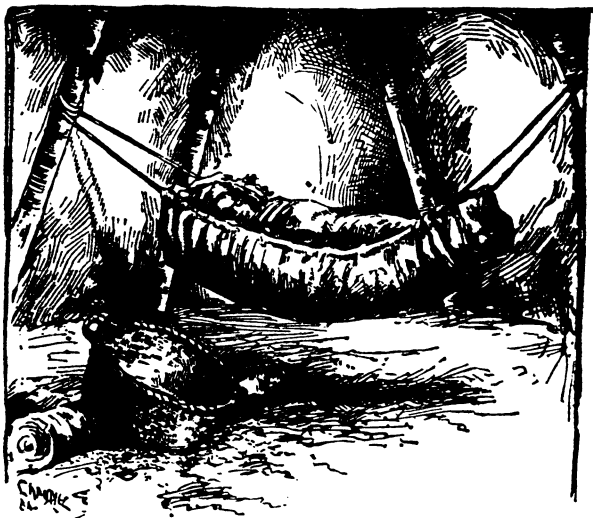


Fig. 5.

CHILD IN HAMMOCK. CAPE BRETON.

(From sketch in *Century Magazine*.)

civilization entails. The wigwam is to the manner born, the hammock reminds one of the far south, while the baby, ensconced in fur and blankets, without a pretense of lashing, points to Eskimo as well as white man's methods. Dr. Dall's remark about the Alaska Indian fashion of the hammock may be recalled here.

On the Pacific side of the Rocky Mountains appear in turn the Kolo shan, the Haidan, Hailtukan (Quackiool), Salishan, Wakashan, or Nutkan stock. All of these people are more or less the slaves in all

their arts to the splendid forests of pine and cedar which cover their lands. The Bellachoola or Bilkhula belong to the great Salishan stock. Their home is in the vicinity of Bentinck Arm. The cradle of this people is probably a fair sample of that used by the stocks north and south of the Bilkhulas (Fig. 6). It is a trough-shaped frame of cedar wood made in two pieces, as follows: The bottom and head-board are in one piece about one-half or three-quarters inch thick. The two sides and foot are also in one piece. The angles and the bends near the child's knees are effected by scarfing the wood almost through on the inside and boiling and bending it into shape. In this art these Indians are very expert, making great numbers of boxes for food and clothing, with



Fig. 6.

BELLA-COOLA TROUGH-CRADLE.

(Cat. No. 20556. U. S. N. M. Bella Bella, B. C. Collected by James G. Swan.)



Fig. 7.

DUGOUT CRADLE, WITH HEAD-FLATTENING APPARATUS.

(Cat. No. 2574 B, U. S. N. M. Chank Indians. Collected by George Catlin.)

joints invisible on the outside. The joints of this cradle are united by means of small withes of willow. The characteristic marks are a flat bottom; head-board, like a little grave-stone, painted in red and black with conventional symbol of a totem. Two streaks of red paint skirt the upper margin of the sides. The change in the angle of convergence of the sides near the child is effected by scarfing and bending. The bed consists of a mass of finely shredded cedar bark. This is overlaid with some kind of sheet of cloth or fur, and the lashing passes through

holes in flaps of raw-hide, in place of the series of eyelet loops occurring on cradles farther south.

In the commencement of this article two kinds of deformation were mentioned, the designed and the undesigned. The first-mentioned method is found in British Columbia, on its western border, and in our domain along the coast of Washington and Oregon. On the extreme north-west corner of Washington live the Makahs, a people associated with the Ahts on Vancouver Island, and belonging to the Nutkan or Wakashan stock. Living as they do in the great cedar region, their cradle would naturally be similar to those of the Indians living farther north.

It is a trough rudely hewed out of cedar wood. (Fig. 7.) A low bridge is left across the trough to strengthen it. Slats are put across to level of height of bridge. The bedding consists of mats of cedar bark. On the lower end of the cradle is a handle. Around the sides are fastened strings. The compress is fastened to head of cradle. It curves over and is tightened by means of cords to the sides of the cradle. It is woven of, and stuffed tightly with, cedar bark. These cradles are suspended by strings to pliant poles, swung by the mother with her hand or great toe.

Another cradle-trough in the National Museum, said to have come from Oregon Territory, is a block of cedar wood 30 inches long and 12 inches square, roughly hewn in shape of a boat, with bulging sides. At the foot, on the outside, is carved a handle, function not known. The bed is shredded cedar bark, and the covering a quilt of the same material, roughly held together by twined weaving; a long pad is hinged to the head-board, and so arranged as to be drawn down over the child's forehead and lashed to either side of the trough. There is evident connection between the boats of the Northwest and the cradles. An interesting feature about this form of cradle is the appliances for lashing the child:

(1) A series of holes along the side, just below the margin, parallel with the border most of the way, but sloping quite away from it at the head.

(2) A cord of coarse root laid along over these holes on the outside of the cradles.

(3) On either side the standard series of loops for the lacing-string is formed by passing a twine through the first hole, around the root cord on the outside, back through the same hole up to the middle of the cradle to form a loop, back through the next hole in the same manner.

(4) The lacing-string runs through these loops alternately from bottom to top. The ornamentation of this type of cradle is chiefly by means of parti-colored basketry and furs. The Chinuks were an advanced people in art, and many of their cradles were very prettily adorned. Mr. Catlin figured one in which the process of head-flattening is going forward.

In Mayne's "British Columbia and Vancouver's Island" we read that

the child lies at full length, and the sides of the cradle are sufficiently high to enable the mother to lace it in by a cord passed from side to side, a small block being put at one end as a pillow. When the mother is traveling she carries the cradle on her back in nearly an upright position, with the head appearing just above her shoulders. But if she is working she suspends the infant from the pliant branch of a tree, or, sticking the pole in the ground at a slight angle, hangs the cradle, sometimes upright, sometimes horizontally, on the end of it. They move pole and cradle so as to keep it near them, and every now and then give it a swing so that it rocks up and down. It is said that when children die they are put in some lake or pool, in their cradle, and left to float, the water being regarded as sacred ever after.

Swan, in his "Indians of Cape Flattery,"* says: "The practice of flattening the heads of infants, although not universal among the Makahs, is performed in a manner similar to that of the Chinuks and other tribes in the vicinity of the Columbia River. As soon as a child is born it is washed with warm urine, and then smeared with whale oil and placed in a cradle made of bark, woven basket fashion, or of wood, either cedar or alder, hollowed out for the purpose. Into the cradle a quantity of finely separated cedar bark of the softest texture is first thrown. At the foot is a board raised at an angle of about 25 degrees, which serves to keep the child's feet elevated, or when the cradle is raised to allow the child to nurse, to form a support for the body, or a sort of seat. This is also covered with bark (*he-sé-yu*). A pillow is formed of the same material, just high enough to keep the head in its natural position, with the spinal column neither elevated nor depressed. First the child is laid on its back, its legs properly extended, its arms put close to its sides, and a covering either of bark or cloth laid over it; and then, commencing at the feet, the whole body is firmly laced up, so that it has no chance to move in the least. When the body is well secured, a padding of *he-sé-yu* is placed on the child's forehead, over which is laid bark of a somewhat stiffer texture, and the head is firmly lashed down to the sides of the cradle; thus the infant remains, seldom taken out more than once a day while it is very young, and then only to wash it and dry its bedding. The male children have a small opening left in the covering, through which the penis protrudes, to enable them to void their urine. The same style of cradle appears to be used whether it is intended to compress the skull or not, and that deformity is accomplished by drawing the strings of the head-pad tightly and keeping up the pressure for a long time. Children are usually kept in these cradles till they are a year old, but as their growth advances they are not tied up quite so long as for the first few months. The mother, in washing her child, seldom takes the trouble to heat water; she simply fills her mouth with water, and when she thinks it warm enough spirts it on the child and rubs it with her hand."

*Smithsonian Cont. to Knowledge, No. 220, pp. 18-19.

Inhabiting the lower parts of the Columbia are a small tribe who correctly come under the name of Flat Heads, as they are almost the only people who strictly adhere to the custom of squeezing and flattening the head.

The process of flattening consists in placing the infant on a board, to which it is lashed by means of thongs to a position from which it can not escape, and the back of the head supported by a sort of pillow, made of moss or rabbit-skins, with an inclined piece (as seen in the drawing), resting on the forehead of the child, being every day drawn down a little tighter by means of a cord, which holds it in its place until it at length touches the nose, thus forming a straight line from the crown of the head to the end of the nose. This process is seemingly a very cruel one, though I doubt if it causes much pain, as it is done in earliest infancy, while the bones are soft and easily depressed into this distorted shape, by forcing the occipital up and the frontal down.



Fig. 8.

FLAT HEAD WOMAN AND CHILD.

(Showing the manner in which the heads of the children are flattened.)

The skull at the top in profile will show a breadth of not more than 1½ or 2 inches, when in front view it exhibits a great expansion on the sides, making it at the top nearly the width of one and a half natural heads.

By this remarkable operation the brain is singularly changed from its natural shape, but in all probability not in the least diminished or injured in its natural functions. This belief is drawn from the testimony of many credible witnesses who have closely scrutinized them and ascertained that those who have the head flattened are in no way inferior in intellectual powers to those whose heads are in their natural shape.

In the process of flattening the head there is another form of crib or cradle into which the child is placed, much in the form of a small canoe, dug out of a log of wood, with a cavity just large enough to admit the body of the child and the head also, giving it room to expand in width, while from the head of the cradle there is a sort of lever, with an elastic spring, that comes down on the forehead of the child and produces the same effect as the one I have described. The child is wrapped in rabbit-skins and placed in this little coffin-like cradle, from which it is not in some instances taken out for several weeks.

The bandages over and about the lower limbs are loose and repeatedly taken off in the same day, as the child may require cleansing. But the head and shoulders are kept strictly in the same position, and the breast

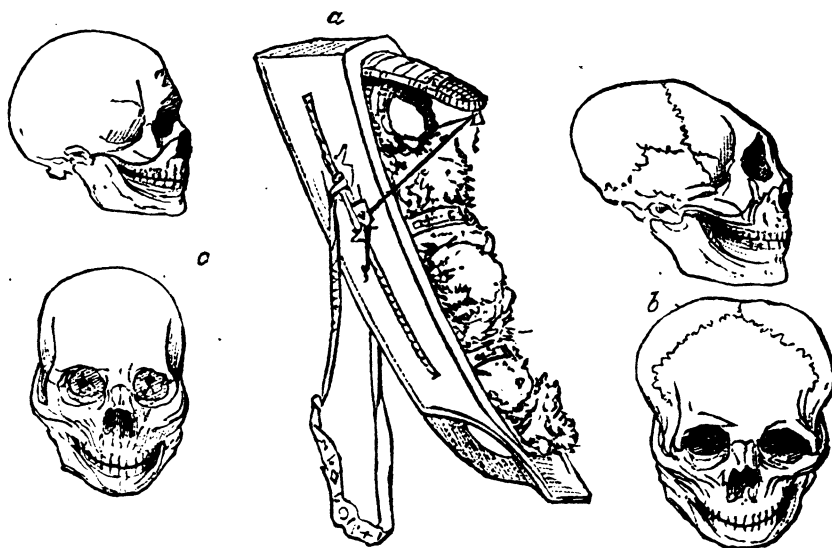


Fig. 8a.

THE CHINUK METHOD OF FLATTENING THE HEAD.

(Plate 210g, Vol. II, Catlin's Eight Years.)

given to the child by holding it up in the cradle, loosing the outer end of the lever that comes over the nose and raising it up or turning it aside so as to allow the child to come at the breast without moving its head. The length of time that the infants are carried in these cradles is three, five, or eight weeks, until the bones are so formed as to keep their shape.

This cradle has a strap that passes over the woman's forehead whilst the cradle rides upon her back, and if the child dies during its subjection to this rigid mode its cradle becomes its coffin, forming a little canoe, in which it lies floating on the water in some sacred pool. (Catlin, vol. II, p. 110.)

From the Oregon coast the Wilkes Expedition* brought a cradle which is shown in Fig. 9. The frame board is trowel or spade shape. The whole back and front are covered with buckskin. At a proper distance from the edges, the buckskin is sewed or lashed down, and the flaps form the inclosing wrappings of the child. A triangular "fly" covers the lower extremities. Compare this portion of the cradle with the Nez Percés (Sahaptian) cradle described further on. The hood is of rawhide, overlaid with a cover of beaded buckskin. It can readily be seen that this hood may be drawn to any tension across the forehead of the infant. The ornamentation and the head-band or carrying-strap are similar to the same parts in other cradles. Wilkes (Explor. Exped., IV, 388) says: "At Niculuita Mr. Drayton obtained a drawing of a child's head that had just been released from its bandages, in order to secure its flattened appearance. Both parents showed great delight at the success they had met with in effecting this distortion." (See Fig. 10.)



Fig. 9.

CRADLE OF OREGON INDIANS.

(Cat. No. 2575, U. S. N. M. Collected by Wilkes' Exploring Expedition.)

*Marchand (Voyages) reports that among the Thinkets, infants are "so excoriated by fermented filth, and so scarred by their cradle, that they carry the marks to the grave." (Bancroft, Nat. Races of Pacific States, vol. I, p. 112.)

Lord (Nat., vol. II, p. 232), Scouler (Lond. Geog. Soc. Jour., vol. XI, pp. 218, 220, 223), Schoolcraft (Arch., vol. II, p. 325) mention the custom of flattening the head in infancy among the Haidahs (Columbians). (Bancroft, Nat. Races, etc., I, 158.) In their platform houses they slept on "cedar mats" (p. 161).

Bancroft (Native Races of the Pacific States, N. Y., 1875, vol. I): "The custom of flattening the head is practiced by the Nootkas in common with the Sound and Chinook families, but is not universal" (p. 180. See, also, note, p. 58).

Bancroft (Native Races of the Pacific States, N. Y., 1875, vol. I, note, p. 177) quotes the accounts of Cook, Meares, Mofras, Macfie, Poole, Sutil y Mexicana, Mayne, and Scouler, to the effect that the Nootka Indians are bow-legged and intoed from boat work, and have deformed limbs from the effect of garters.

Swan, J. G. (Indians of Cape Flattery, Smithsonian Contributions, No. 220): Description of the process of head-flattening among the Indians of Vancouver Island (pp. 18, 19).

Heriot, G. (Travels through the Canadas, London, 1807, 4to): "In the latitude of fifty-two degrees, on the northwest coast of America, there exists a tribe whose heads are molded into a wedge-like form" (p. 303).

Bancroft (Native Races of the Pacific States, N. Y., 1875, vol. I): The custom of head-flattening, apparently of sea-board origin and growth, extends * * * across

Governor Stevens (Ind. Aff. Rep., 1854, p. 227) says: "The women at Walla Walla sit astride in a saddle made with a very high pommel and

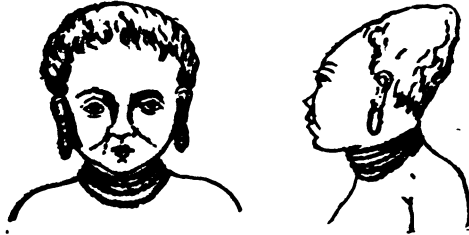


Fig. 10.

SHOWING THE EFFECT OF HEAD-FLATTENING.

(From drawing by Mr. Drayton, published in Wilkes' Exploring Expedition, IV, p. 368.)

cattle, and in traveling carry their infants either dangling by the cradle strap to the former or slung in a blanket over their shoulders." The

the Cascade barrier, and is practiced to a greater or less extent by all the tribes of the Sahaptian family." They merely depress slightly the forehead of infants, and this disappears at maturity" (p. 256).

Macfie, M. (Vancouver Island and British Columbia, London, 1865): Between lat. 53° 30' N. and lat. 46° N. the Indians of the northwest coast of America flatten the head, under the impression that the distortion is becoming (p. 441).

Macfie (*idem.*, p. 441) gives the following account of the process of head-flattening among the coast tribes: "The child, as soon as born, is placed in a cradle scooped out of a log of timber. This rude ark is flat at the bottom, and raised at the point where the neck of the child rests. A flat stone is fastened to the head of the infant in this posture by thin strips of twisted bark. In the situation indicated the child is kept till able to walk, and its forehead has been molded into the required shape." In the Quatsino district the skulls of the women have "a tapering or conical form" * * * produced by artificial means. Only the families of chiefs (tenass) and "gentlemen commoners" (tyhees) are permitted to modify the form of the head.

Bancroft (Native Races of the Pacific States, N. Y., 1875, vol. 1): The Sound Indians, among the Columbians, flatten the head, "but none carry the practice to such an extent as their neighbors on the south" (p. 210).

Bancroft (Native Races of the Pacific States, N. Y., 1875, vol. 1): Among the Chinooks the "legs are bowed and otherwise deformed by a constant squatting position in and out of their canoes" (p. 224). Head-flattening "seems to have originated * * * about the mouth of the Columbia," and the Chinooks carry the custom to an excess of deformity (p. 226).

Bancroft remarks that "the Chinook ideal of facial beauty is a straight line from the end of the nose to the crown of the head. The flattening of the skull is effected by binding the infant to its cradle immediately after birth, and keeping it there from three months to a year. The simplest form of cradle is a piece of board or plank, on which the child is laid upon its back with its head slightly raised by a block of wood. Another piece of wood, or bark, or leather is then placed over the forehead and tied to the plank with strings, which are tightened more and more each day until the skull is shaped to the required pattern. Space is left for lateral expansion, and, under ordinary circumstances, the child's head is not allowed to leave its position until the process is complete. The body and limbs are also bound to the cradle, but more loosely, by bandages, which are sometimes removed for cleansing purposes." (Native Races, etc., vol. 1, p. 227.)

same authority says that the Clallams, and in fact, all the Sound Indians, flatten the head (243).*

Mr. William Meinold, in sending to the National Museum the skull of a Flathead Indian from northwest Montana, writes as follows: "When the child is about one week old it is put on a board and tied hand and foot. A small bag of sand is tied over the forehead and remains in this position eight or ten days. It is then taken off for a short rest and afterwards fastened to the board again. This continues from six weeks to six months. The head then has its shape and grows in the right direction. The skull mentioned belonged to Redgrass, a chief, who died about forty years ago. His body was deposited on posts 6 feet high. In his canoe were found beads, and a General Harrison badge of 1841.†

* Meares, J. (*Voyages to the Northwest Coast of America*, London, 1791, 8vo), describes the compression of head into the form of a "sugar loaf" among Indians of Nootka Sound by bandages. Says the process flattens the nose (vol. II, p. 37).

Wilkes, Commander (U. S. Exploring Expedition, Philadelphia, 1845, 4to, vol. IV): Two plates illustrating head-flattening among the Indians of Niculuita (Wallawalla), observed by Mr. Drayton (p. 415). Flower quotes Kane's description of the process of head-compression in Vancouver (p. 13). He refers to evident distortion in the case of an order of Chinese mendicants, as indicated by plate 131, vol. II, Picart, *Histoire des Religions*. He quotes Townsend's account of head-flattening among the Wallamets (p. 14).

† Catlin, George. (*Illustrations of the Manners, etc., of the N. Amer. Indians*. London, 1876, 8vo, vol. I.) Head of Crow chief distorted into semi-lunar shape, with compression of forehead (p. 50). Vol. II. Head-flattening among Chinooks. Description of cradle and process (pp. 110, 111). Statement concerning the former prevalence of this custom among Choctaws and Chickasaws (p. 112). The evidence afforded by this and other works dealing with the details of life points to the fact that head distortion is less practiced now than formerly. It exists at present sporadically.

Cox, R. (*The Columbia River*. London, 1832, 3d ed. 8vo.) On the Lower Columbia all heads were distorted; and there was a perfect uniformity in their shape (vol. I, pp. 105, 106). Speaking of "Flatheads," says, their "heads have their fair proportion of rotundity" (I, pp. 219-222). Gathlamahs, Killymucks, Clatsops, Chinooks, Chilts, at mouth of Columbia, flatten the head. Cradle oblong, with pillow. Pad and slab on forehead held by cords. Time, a year. No pain (vol. I, page 276). Among this group of tribes the body and limbs among the men well shaped, but the women's legs are "quite bandy," owing to the tight ligatures they wear on the lower part of the legs (vol. I, p. 276).

Wood, J. G. (*Uncivilized Races of Men*. Hartford, 1871. 8vo.) Description of the process of head-flattening among the Columbia Indians (pp. 1319, 1320).

Lewis and Clark. (*Expedition to the Sources of the Missouri, etc.* Philadelphia, 1814. 8vo.) On the Kimoenim, an affluent of the Columbia, "the Sokulk women" had "their heads flattened in such a manner that the forehead is in a straight line from the nose to the crown of the head" (vol. II, p. 12). The women of the Pishquit-paws, on the Columbia, had "their heads flattened" (vol. II, p. 23). Among the Eneeshurs and Elcheloots "the heads of the males, as well as of the other sex," were flattened (vol. II, p. 45). The women of an unnamed tribe on the same river "universally have their heads flattened," and they saw "female children undergoing the operation" (vol. II, p. 57). Pressure of anklets and mode of sitting also distorted their legs (*id.*). "The Skilloots, both males and females, have the head flattened" (vol. II p. 64). The Wahkiacums "all have their heads flattened" (vol. II, p. 69). Head-flattening is general among the "Chinooks." Men's legs "small and crooked; women's tumefied

The Hupa Indians of northwestern California belong to the Tinnéan stock. They have been described in a paper entitled, "The Ray Collection in the U. S. National Museum."* The cradle-basket of the Hupas of northwestern California is a slipper-shaped, open-work basket of

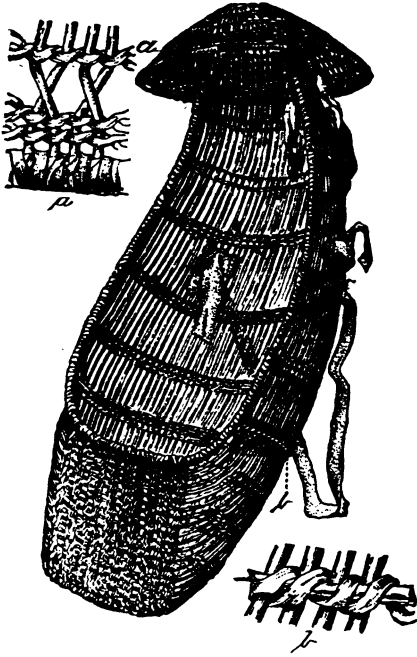


Fig. 11.

HUPA WICKER-CRADLE.

(Cat. No. 126519. U. S. N. M. Hupa Valley, California.
Collected by Lieut. P. H. Ray, U. S. A.)

osier warp, and twined weaving constitutes the body of the cradle. (Fig. 11.) It is woven as follows: Commencing at the upper end, the small ends of the twigs are held in place one-eighth of an inch apart by three rows of twined weaving, followed by a row in which an extra strengthening twig is whipped or sewed in place, as in the Makah basketry. At intervals of 2½ to 3 inches are three rows of twined basketry, every alternate series having one of the strengthening twigs, increasing in thickness downward. The twigs constituting the true bottom of the so-called slipper continue to the end of the square toe, and are fastened off, while those that form the sides are ingeniously bent to form the vamp of the slipper. This part of the frame is held together by rows of twined weaving (*boustrophedon*).

When two rows of this kind of

twining lie quite close it has the appearance of a four-ply plaiting, and has been taken for such by the superficial observer.

The binding around the opening of the cradle is formed of a bundle of twigs seized with a strip of bast or tough root.

The awning is made of open wicker and twined basketry, bound with

by pressure of bead anklets (vol. II, p. 115). The Cookoooose, on the Pacific coast, do not flatten the head (vol. II, p. 119). It is stated that "the Killamucks, Clatsops, Chinooks, and Cathlamahs * * * have thick ankles and crooked legs" due to "the universal practice of squatting, * * * and also to the tight bandages of beads and strings worn around the ankles by the women," whose limbs are "particularly ill-shaped and swollen." "The custom * * * of flattening the head by artificial pressure during infancy, prevails among all the nations we have seen west of the Rocky Mountains" (Snakes and Cookoooose they themselves except). "To the east of that barrier the fashion is * * * perfectly unknown." An error! "On the lower parts of the Columbia both sexes are universally flatheads; the custom diminishes in receding eastward, * * * till among the remoter tribes, near the mountains," the practice "is confined to a few females" (vol. II, pp. 130, 131).

* Smithsonian Report, 1896, i., pp. 205-239, pl. xxvi.

colored grass. This pretty, flat cone resembles the salmon-baskets figured and described in the Ray collection.*

There is in the National Museum a cradle for a new-born babe, from the McCloud River Indians of California, belonging to the basket-tray type. It is shaped very much like a large grain-scoop or the lower half of a moccasin inverted, and made of twigs in twined weaving. There are double rows of twining two inches or thereabouts apart, and nearly all of them are interlocked, which gives the appearance of a four-ply braid. The meshes form a diamond pattern by inclusion in the half turns of the twine quincuncially.

The general shoe-shape of the cradle is produced by commencing at the heel, which is here the bottom, and doubling the twigs by a continually sharper turn until along the bottom the rods simply lie parallel, that is, the rods that lie along the middle of the bottom terminate at the heel, while those that form the sides and upper end are continuous.

Around the edge and forming a brace across the upper end is a border made of a bundle of rods seized with tough bast or split root.† The twigs themselves project upwards an inch or two from this brace, and are not fastened off. (Figs. 11 and 12.)

The Modoc women make a very pretty baby-basket of fine willow-work, cylinder-shaped, with one-half of it cut away, except a few inches at the ends.‡ It is intended to be set up against the wall or carried on the back; hence the infant is lashed perpendicular in it, with his feet standing in one end and the other covering his head, like a small parasol. In one that I saw this canopy was supported by small standards, spirally wrapped with strips of gay-colored calico, with looped and scalloped hangings between. Let a mother black her whole face below the eyes, including the nose, shining black, thrust a goose quill 3 inches long through the septum of the nose, don her close-fitting skull cap and start to town with her baby-basket lashed to her back, and she feels the pride of maternity strong within her. The little fellow is wrapped all around like a mummy, with nothing visible but his head, and sometimes even that is bandaged back tight, so that he may sleep standing.

From the manner in which the tender skull is thus bandaged back it occasionally results that it grows backward and upward at an angle of about 45 degrees. Among the Klamath Lake Indians I have seen a man fifty years old, perhaps, whose forehead was all gone, the head sloping right

* Perouse, G. de la. (*Voyage Round the World*. London, 1799. 8vo. Vol. III.) Description by Dr. Rollin of the manner of swathing infants and of the cradles used by the California Indians (p. 209). Almost the same statement is made of the treatment of infants among the Tartars of the east coast, opposite Saghalien. Their cradles were of basket work, wood or birch bark (p. 237).

† Bancroft. (*Native Races of the Pacific States*. New York, 1873. Vol. I.) Among the central Californian tribes, "as soon as the child is born" it is washed "and then swaddled from head to foot in strips of soft skin and strapped to a board, which is carried on the mother's back" (p. 391).

‡ Powers, *Cont. N. A. Ethnol.*, III, p. 257.

back on a line with the nose, yet his faculties seemed nowise impaired. The conspicuous painstaking which the Modoc squaw spends on her baby-basket is an index of her maternal love. Indeed the Modoc are strongly attached to their offspring. On the other hand a California squaw often carelessly sets her baby in a deep conical basket, the same in which she carried her household effects, leaving him loose and liable to fall out. If she makes a baby-basket it is totally devoid of ornament, and one tribe, the Mi-woh, contemptuously call it the dog's nest. It is among Indians like these that we hear of infanticide.

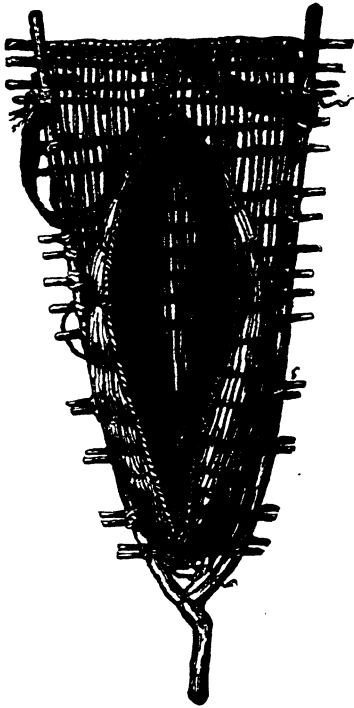


Fig. 12.

KLAMATH CRADLE OF WICKER AND RUSHES.
(Cat. No. 19698, U. S. N. M. Klamath Indians, Tule River,
California. Collected by Stephen Powers.)

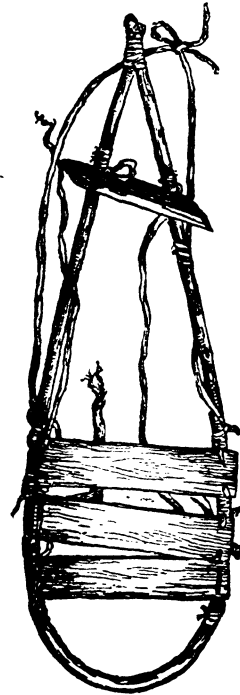


Fig. 13.

FRAME OF PITT RIVER CRADLE.
(Cat. No. 21411, Round Valley, California.
U. S. N. M. Collected by Stephen Powers.)

The cradle of the Pitt River Indians is a transition between the forked stick and the ox-bow type. A pole of wood, with bark removed, is bent in the middle, the two ends crossed and lashed together. Across this primitive frame are laid broad laths, perforated at the corners, and lashed to the poles with buckskin strings (Fig. 13). The foot-rest is a block of wood 7 by 4 by $\frac{3}{4}$ inches, perforated, and through it are passed the two ends of the pole. The convergence of the ends prevents the slipping down of this little platform. Comparing this cradle with one from the vicinity, called a cradle of a new-born pappoose, it will be seen that we have before us two extremes of a series, commencing with a mere tray for an absolutely helpless creature to a standing place for a child

just ready to learn to walk. Regarding the cradle in the light of a chrysalis, we discover not only the tiny creature within has passed through wonderful changes, but that the encapsulating cradle has passed from a horizontal to a vertical function. It was first a trough to be firmly lashed in; it ends with being a frame on which the juvenile Indian takes his stand prior to taking his flight into the realm of self-support. Compare this device with the practice of the Pimo and Yuma children of standing upon the mother's cincture and grasping her neck or shoulders. Another Pitt River example is a cradle net or bag, the warp of coarse twine of milkweed fiber laid close together and joined by twined weaving of finer twine, in double rows, an inch and a half apart. Some noteworthy features of this cradle are the following: The whole twining, from beginning to end, seems to be continuous, like plowing a series of double furrows. On the right edge the weaver simply turned and weaved back alongside of the former twine; at the left edge she laid her twine by the side of her warp for an inch and a half, and then turned in for another double row. Indeed, it seems as though the whole cradle were made of one pair of twines. The hood is made by puckering the ends of the warp together and tying them, as with a bag-string. The part over the forehead is formed of a separate set of warp strands. The sun-shade is a round, disk-like structure of twined weaving.

The Potter Valley cradle-trough is made of willow twigs laid closely together and held in place by an ingenious stitching, to be explained further on (Fig. 14).

The head of the cradle is a hoop of wood 1 foot in diameter, quite open. It is fastened to the wicker-work by a continuous coil of twine passing around it and between the willow rods consecutively, being caught over the curious braid that holds the twigs together. In the example described the lashing is cotton string, but in a more primitive form it would be sinew or grass cord. The ends of the twigs are cut off flush with the hoop. The sides and bottom of the cradle are scoop-shaped, with high perpendicular sides, the twigs forming it all terminating at the head hoop.

The rods of the cradle-frame are woven together by a series of braids about 2 inches apart. This braid is so constructed as to resemble two rows of coiled sewing on the inside and a close herring-bone on the outside, and is made as follows: Commence one edge and carry the twine along three osiers, bending to the left, bringing it back two and through to the front, forward two, crossing number one; through, back two, through to front, just over and over, forward three, back two, forward two, back two, ready to start again.

Long leather loops are attached to the bottom of the cradle where it joins the upright sides to receive the lacing-string which holds the baby in place.

The Tule and Tejon cradle-frame consists of three parts: the founda-

tion, which is a forked stick; the cross-bars, lashed beneath, and the slat of twigs upon which the bed is laid. Some parts of this frame demand minuter description. The fork is a common twig, not necessarily symmetrical, with short handle and prongs nearly 3 feet long, spreading about 16 inches at the distal end or top.

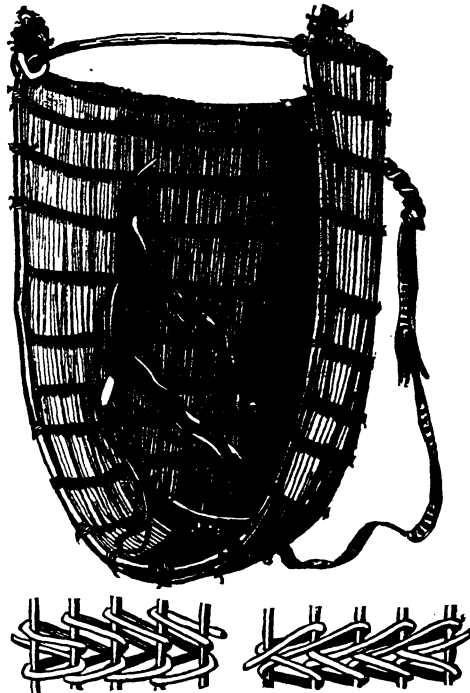


Fig. 14.

POMO CRADLE. THE CHILD SITS IN THE ROUNDED PORTION.

(Cat. No. 21398, U. S. N. M. Porter Valley, California. Collected by Stephen Powers.)

At the back of the fork are lashed seventeen rods of wood, projecting at their ends an inch or more beyond the fork. The lashing of the rods to the fork is by means of sinew skillfully crossed both in front and rear, that is, the seizing is partly parallel and partly cross-laced to give the strongest joint. These wooden rods seem to follow a rude plan of pairs, but the design is not apparent. Between the upper pair is a third rod, whose function is to hold in place the slats in front. The slat-work or slats on the front consist of a separate transverse rod, to which about forty twigs are attached by bending the large end of each one around the rod and then holding the series in place by a row or two of twined weaving with split twigs. To fasten this crib-work in place the rod is put behind the two ends of the forked stick, and the twigs laid in order on the front of the series of transverse rods so as to fill neatly the space between the forks. These twigs are held in place by lashing them here and there to the transverse rods and to the side

prongs. This lashing crosses the twigs diagonally in front and the rods behind vertically.

The Mohave cradle-frame is a prettily-made ladder or trellis, built up as follows (Fig. 15): A pole of hard wood about 7 feet long is bent

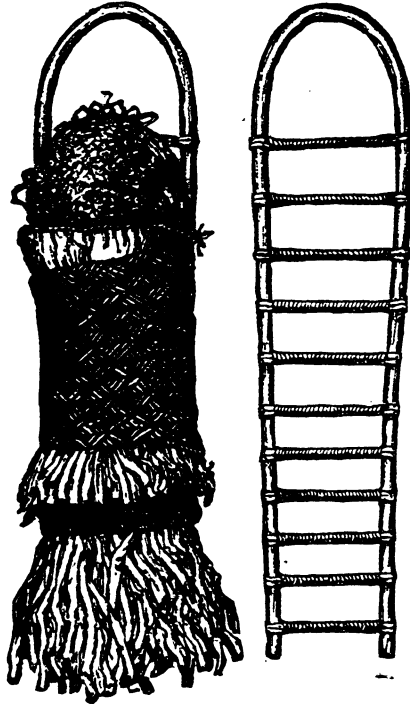


Fig. 15.

MOHAVE CRADLE, WITH BED OF SHREDDED BARK.

(Cat. No. 24146, U. S. N. M. Colorado River, Arizona. Collected by Edward Palmer.)

in the shape of an ox-bow, the sides 7 inches apart at top and 5½ inches at bottom, so that the cradle is a little narrower at the foot. Eleven cross-bars, like ladder-rounds, connect and strengthen the frame, commencing at the bottom and ending near the bow. These rounds consist each of three elements: a rod or spreader between the two sides; a strap-like binding of two or three split twigs clasping the sides and laid along on the spreader; a seizing of tough twigs holding fast the straps and spreader. The drawing of the reverse side clearly sets forth the manner of administering the light but strong cross-bracing. Upon this ladder is laid the cradle-bed of willow or mezquite bast, made as follows: Three bundles of stripped bast, each about an inch in diameter, are lashed at their middle with bast. They are then doubled together concentrically and spread out to form a bed. On this is laid a little loose, finely-shredded bast like a nest, and the bed is ready for the baby.

A dainty quilt or counterpane of bast is made from strips 30 inches long, doubled and braided at the top like a cincture. This braiding is

unique, and so very neatly done as to demand explanation. Two strips of bast are seized about their middle by a single twist of the two elements of twined weaving. Of course two halves will project above and two below the twist. Lay two more strips of bast in the second bight of the twist and draw down the first two upper ends, one to the right of and the other between the second pair of strips, seizing them in place by another half turn of the twines. Lay on a thin pair of bast strips and bring down the second pair of ends projecting upward, as at first. The weaving consists of four movements, namely: Laying in a pair of bast strips, grasping them with a half turn of the two twining wefts, bending down the two upward strips just preceding one between the other outside of the last two strips; and grasping them with a half turn of the twine. The lashing belts of this cradle are twelve to fifteen ply braids, made of red, green, white, and black woolen and cotton cords, braided after the manner of the peculiar type of ornamentation undesignedly originated by braiding with threads of different colors. On this belt of several colors the threads are so arranged as to produce a continuous series of similar triangles, filling the space between two parallel lines by having their bases above and below alternately. Now the gist of the ornamentation is the parallelism of the braiding threads, now to one side of the triangle, and in the next figure running in a direction exactly at right angles. One of the commonest ornaments on the pottery, rude stone, and carved wood is this distribution of lines in triangles.

Of the Pimos, neighbors of the Mohaves, Dr. Palmer says, that on long journeys they use the cradle-board; but as soon as a child is able to stand alone the Pimo mother allows it to mount upon the immense cincture of bark worn on her back and to grasp her around the neck.*

The floor of the Yaqui cradle is of the slatted type, 30 inches long. A dozen or more reeds, such as arrow-shafts are made of, are fastened in the same plane by a dowel-pin. The reeds are not bored for the pins, but simply notched in a primitive fashion. (Fig. 16.)

There is no cradle-trough, but a bed of willow or other bast, shredded, is laid on longitudinally. The pillow consists of a bundle of little splints laid on transversely, at either end of which is a pad of rags. There is no awning; the lashing in this instance is a long cotton rag, taking the place of a leather strap, passing round and round baby and frame, and fastened off in a martingale arrangement, crossing the feet and tied to the lower corners of the cradle. Upon this cradle-rack or frame is fastened the true cradle, which, in this instance, is a strip of coarse mat,

* Bourke, Capt. J. G.: Speaking of the Umene of the Rio Helay, in 1824, who must have been the Yumas of the Rio Gila, Pattie says: "They contrive to inflict upon their children an artificial deformity. They flatten their heads by pressing a board upon their tender scalps, which they bind fast by a ligature. This board is so large and tight that I have seen women when swimming in the river with their children, towing them after them with a string which they held in their mouth. The little things neither suffered nor complained, but floated behind their mothers like ducks." (Pattie's Narrative, Cincinnati, Ohio, 1833, p. 92.)

made of soft flags, a foot wide, joined by cross-rows of twined weaving 2 inches apart. This mat is bordered by a braid of flags, and the two ends are puckered or drawn to a point. The cradle belongs to the open, unhooded type, and is made by doubling the matting at the head and drawing it together to a point at the foot. The two edges next to the cradle-frame are joined and fastened to the frame, while the outer edge is allowed to flare open. In this little ark of flags or rushes the baby is placed.*

The children of the California peninsula stand and walk before they are a year old. When they are born they are cradled in the shell of a turtle or on the ground. As soon as the child is a few months old, the mother places it perfectly naked astraddle on her shoulders, its legs hanging down on both sides in front. In this guise the mother roves about all day, exposing her helpless charge to the hot rays of the sun and the chilly winds that sweep over the inhospitable country.†

Like her white sister, the Indian mother (to be) in Montana and her friends make preparations for the coming event by collecting cloths, and the board that the child is to pass so many hours of its first year of life on, which, if richly ornamented with beads, otter-skin, and fringes, with bells on them, is worth a good horse, which is generally what is given for the child's board or cradle. This is usually the case when the boy or girl is given and adopted by another mother. So an Indian child has generally two mothers, and of course two fathers, but the father has but little to do with the child till it is old enough to run around.

When the child is born it is taken in charge by its adopted mother, or by a hired woman. It is washed, dried, then greased, and powdered with red ocher, then nursed by some Indian woman or its mother, and wrapped up, with its arms down by its side, in a buffalo-calf skin or shawl or small blanket, and placed in its board or cradle, to be taken

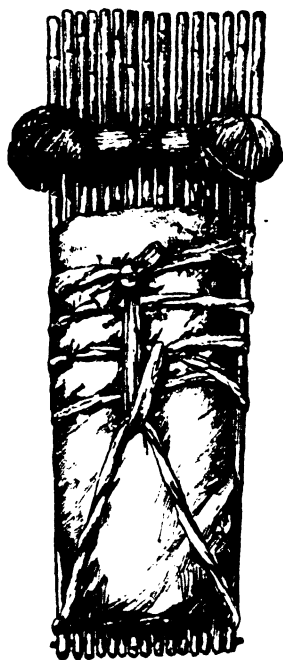


Fig. 16.

YACUI CRADLE, MADE OF CANES.
SOFT HORSES USED FOR PILLOWS.
(U. S. N. M. Sonora, Mexico. Collected by
Edward Palmer.)

* Acosta, Padre José de. (The Natural and Moral History of the Indies. Ed. Hakluyt Soc. London. 1850. 8vo.) Of the "Chichimecas"—savage mountaineers—he says: "The wives likewise went a hunting with their husbands, leaving their young children in a little panier of reeds, tied to the boughs of a tree." (Vol. II, p. 450.) Head-flattening. (Mexico.) "Las parteras hacen que las criaturas no tengan colorillos; y las madres las tienen echadas en cunas de tal suerte que no les crezca, porque se precian sin el." (Gómara, Mejico, p. 440.)

† Cradle of Turtle-shell, Low. Cal. Inds., 1773. Baegert, in Smithsonian Rep., 1863, p. 399.

around to its relations' lodges for inspection. Every evening it is taken from its confinement to be washed, painted, and dressed again, and greased. The first cloth over its posterior is laid with a coating of dry pulverized buffalo dung or chips, and this is used as a white woman uses a diaper.

As it grows older it is taken by its mother, placed up in the lodge or outside, while she goes about her work. If the child is restless it is nursed while on the board. After six to eight months of age the child is laid to sleep without the board, and it is generally discarded after a year old, though I have seen Indian boys and girls suckling at five and six years of age. An Indian child, like a white one, is pleased with toys, candy, etc., and their instincts are alike. They cry, laugh, are amused, frightened, and astonished, and as they are born and brought up so do they live.

The board upon which a child is laid is covered with a tanned elk-skin or deer skin, and beads worked on it. The place where the child reposes is loose, and is laced and tied up when the child is placed in it.*

The straps for carrying and suspending it are on the opposite side of the board, and in carrying, the strap is brought over the head and placed across the upper part of the breast and across the shoulders. This brings the board upon which the back of the child rests against the back of the mother. The board is one-quarter of an inch thick, from 2½ to 3 feet in length, and 1½ feet in bulge of board.

The Nez Percé Indians belong to the Sahaptian stock, and were once a noble people, dwelling on the Snake River and its affluents in Idaho. They have produced the historical character, Chief Joseph, but are now reduced to an enervated remnant dwelling on the Nez Percé Reservation. The basis of the cradle is a rough board, generally hewn out, 3 feet high, 15 inches wide at the top, and not more than an inch thick. It is shaped somewhat like a tailor's sleeveboard, but is more tapering (Fig. 17). This board is covered with buckskin, drawn perfectly tight upon the back and across the broad part of the front as far down as the hood, or about one-third the length. Below that the two edges of the buckskin form flaps, which meet nearly over the child. Along the edges of these flaps strings are looped, into which loops a lashing cord passes backward and forward to inclose the child tightly in its capsule. On the top of the back a fringe of buckskin strings is formed, either by slitting the buckskin covering itself or by a separate strip sewed on at this point. A little above the center is sewed the head-strap of buckskin, to enable the mother to transport her child or to suspend it when at rest. The hood of the cradle is based upon the flaps of buckskin, but these are entirely concealed by the covering of flannel or other substance. The most ornamented portion of the cradle is the

* Catlin, George. (Illustrations of the Manners, etc., of the N. American Indians. London. 1876. 8vo. Vol. I.) Head of Crow chief distorted into semi-lunar shape (p. 50).

part above the hood; a piece of flannel or buckskin is covered with bead-work, solid, or has figures wrought upon it in various patterns. To the hood are attached medicine-bags, bits of shell, haliotis perhaps, and the whole artistic genius of the mother is in play to adorn her offspring. After the child is lashed in the cradle, a triangular flap of buckskin, also adorned with bead-work, is tied over the child to the buckskin flaps on either side.

The Spokanes belong to the Salishan stock. They are described by Lewis and Clarke, by Governor Stevens (Rep. Ind. Aff., 1854), and by Winans. Living on the eastern border of the Salish area in Idaho and Washington Territory, their cradles are almost identical with those of the Nez Percés, just described.* Neither of the specimens contains a bed or a pillow, so that we are at a loss as to the effect of the cradle in occipital flattening. But we can be positive as to one thing, that in neither of these examples is there the least provision for intentionally deforming the forehead. The Salish are frequently called Flatheads, but from the example of cradle furnished it seems that they are the

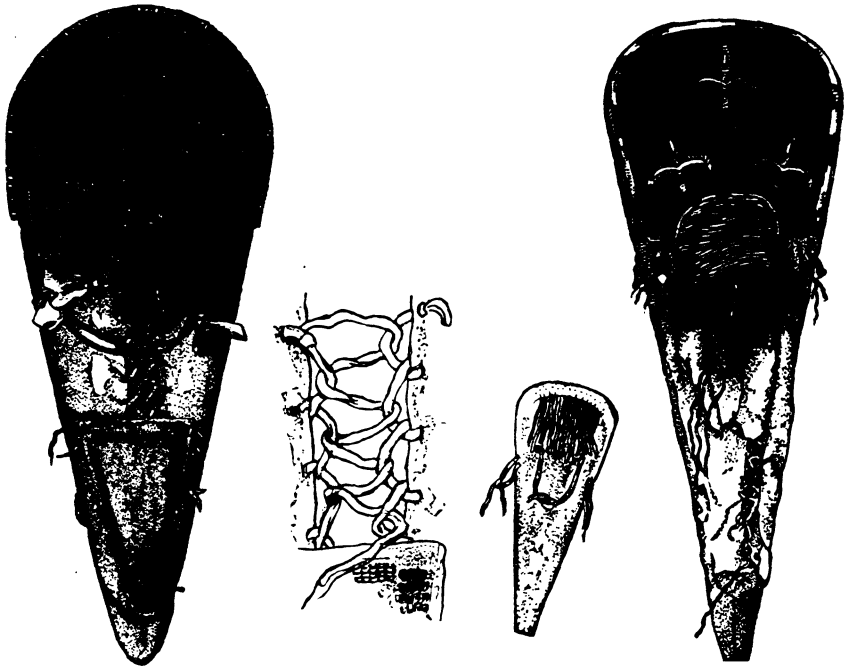


Fig. 17.

NEZ PERCÉ CRADLE-BOARD WITH BUCKSKIN SIDES.

(Cat. No. 23645, U. S. N. M., Nez Percé Agency, Idaho. Collected by J. B. Monteith.)

Fig. 18.

SAHAPTIAN CRADLE-BOARD.

(Cat. No. 129675, U. S. N. M., Spokane Indians, Washington. Collected by Mrs. A. C. McBean.)

only coast stock about the Columbia that does not practice intentional flattening. The Museum specimen from the Spokanes is an excellent example of aboriginal work. (Fig. 18.) Everything about it is complete.

* See Fig. 17.

On the back is a long ornamental fringe at top, and lower down both the head-strap and two extra straps at the margin to secure the cradle in other manipulations. The upper portion of the front is covered with bead-work, solid blue ground, with bird-shaped figures in amber and pink beads. On the right side of the hood hangs a long medicine bag of buckskin, adorned with light blue beads of large size. A newspaper correspondent from this region mentions a buckskin string upon these cradles in which a knot is tied for every moon of the child's life. There are little buckskin strings in the margin of this cradle near the hood, but no knots have been tied in either of the cradles here described.

In these two, as in many others mentioned in this paper, there is a charming combination of the old and the new. The slab, the buckskin, the medicine-bag, the fringe, the lashing are all pre-Columbian. The beads, the flannel, the cloth lining, etc., are evidently derived materially from the whites. There is no change of structure or function effected by any of these things. They simply replace other materials, such as quill-work, shell-work, native cloth, fur or buckskin, in use before the advent of the whites.

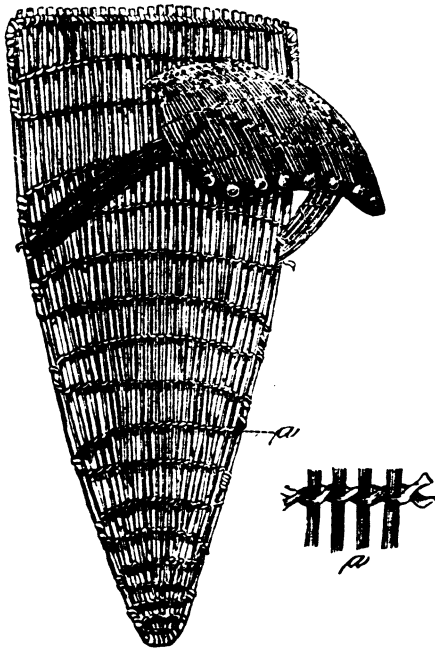


Fig. 19.

NEVADA UTE CRADLE-FRAME: OF RODS, WITH ADJUSTABLE AWNING.

(Cat. No. 76734, U. S. N. M. Specimen obtained from the Nevada exhibit at the New Orleans Exposition.)



Fig. 20.

NEVADA UTE CRADLE; FULL RIGGED.

(Cat. No. 19040, U. S. N. M. Pyramid Lake, Nevada. Collected by Stephen Powers.)

One of the widest-spread stocks of Indians formerly were the Shoshonians, reaching down the Great Interior Basin throughout its whole

extent, crossing the Rockies on the east under the name of Comanches, and in southern California extending quite to the Pacific Ocean. Spread over such a vast territory, the Shoshonian cradle was modified here and there by the nature of things, by the contact of dominant tribes, and by changed habits of life.

The Utes of Pyramid Lake, Nevada, make use of a flat wicker cradle-frame, kite-shaped or roughly triangular. The widening is effected by the intercalation of rods as they are wanted. At the top the rods are held in place by a cross-rod lashed to the ends of the parallel pieces. The twined weaving is characteristic of the Utes in all of their textiles. A pretty addition to the Ute cradle is the delicate awning of light wicker attached by its lower narrow border to the bed-frame and held at the proper angle by means of braces made of the same material (Figs. 19, 20).

Three specimens from this area are in the Museum, showing them as frame and as finished cradles. Indeed, we have only to cover the lattice with buckskin after the manner of those used by the Spokanes and the affair is complete.

In the eastern portion of Utah once dwelt various tribes of Ute Indians. In the National collection is a cradle from this region marked Uncompaghre Utes (Fig. 21). It is an old affair, showing scarcely a

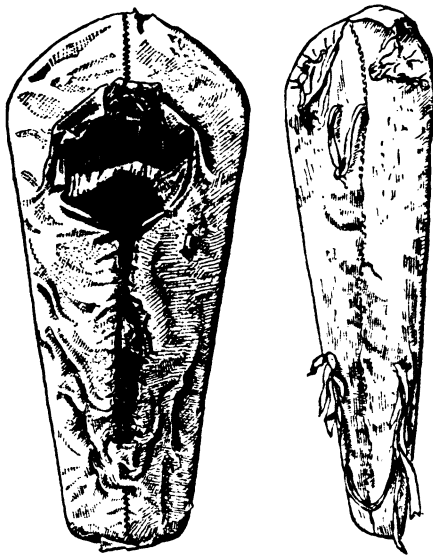


Fig. 21.

UNCOMPAGHRE UTE CRADLE: SHOWING FRONT AND BACK.

(Cat. No. 126343, U. S. N. M. Uncompaghre River, Colorado (?). Collected by Captain Beckwith, U. S. A.)

sign of white contact, excepting a bunch of blue rag over the hood. The cradle is built upon a thin board 4 feet high, 18 inches wide at top, and tapering to half that width at bottom. The covering is of buckskin, seamed on the back, and very clumsily put on. There are two

suspension straps, one near the top and the other very low down. On the front the buckskin has loose flaps to inclose the child. The hood or awning is a very curious affair, and if closely drawn down would certainly give to the Uncompaghre child the forehead of a Flathead. It is a kind of tiara, made of little twigs lashed to stronger rods. The lower margin over the child's forehead is bound with soft buckskin. The hard cradle-board allies it to the Northern type, where timber is larger, rather than to the pure Ute type, where a hurdle takes the place of the board.

The cradle-frame of the Southern Utes is so well shown in the three drawings presented as not to need very minute description (Figs. 22, 23, 24). The frame-work consists of three parts, the slats, the hoop,

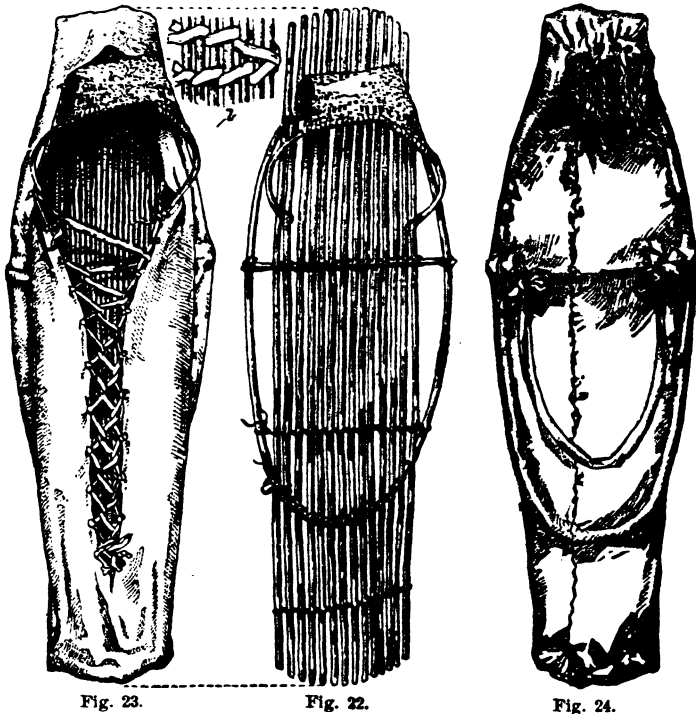


Fig. 23. Fig. 22. Fig. 24.
THREE VIEWS OF UTE CRADLE-FRAME, MADE OF RODS AND COVERED WITH
DRESSED BUCK-SKIN.

(Cat. No. 14646, U. S. N. M. Southern Utah. Collected by Major J. W. Powell.)

and the hood. A dozen twigs like arrow-shafts, 4 feet long, are held in place by here and there a twine of basketry; across the portion to which the ends of the head-band are to be attached a rod is lashed to hold the lattice firmly in place. A hoop of twig, elliptical in form, is lashed to the frame wherever it touches and to the ends of the cross-rod. To the upper border of the hoop is sewed an irregular quadrangular piece of twined basketry weaving. Its outer border is sewed to a rod, which is bent and fastened at its ends to the slats. This forms the

awning of the cradle. We are now ready for the cover, which is formed by a wide piece of the whitest buckskin, wrapped on as in making a bundle, sewed on the back and slit open in front. The upper portion is cut into the neatest possible fringe. A broad head-band of soft buckskin completes the outfit. A specimen from the same locality varies somewhat in detail.

This cradle has the ox-bow frame lathed along the back with twigs close together and held in place by a continuous seizing of sinew. Although a rude affair, this fact is evidently due to the lack of material in a desert country rather than to want of taste in the maker. The awning for the face is a band of wicker, 4 inches wide, attached by its ends to the side frame of the cradle. This band is of twined weaving, the weft running boustrophedon. Notice especially that each half turn of the twine takes in two warp twigs, and that when the weaver turned backward she did not inclose the same pairs of warp twigs, but twined them in quincuncially, creating a mass of elongated rhomboidal openings, exactly as the Aleutian Islanders weave their marvelously fine grass wallets, while the Ute weaving is a model of coarseness in an identical technique.

The head-band of buckskin is not tied immediately to the bowed frame, but is knotted to a loop made of a narrow string, wound three times around the frame and knotted.*

The elements of the Moki cradle-frame are the floor and the awning. As a foundation a stout stick is bent in shape of the ox-yoke bow. Rods of the size of a lead-pencil are attached to the curve of this bow and stretched parallel to the limbs of the bow. Twigs are closely woven on this warp by regular basketry weaving. The Moki are the only savages west of the Rocky Mountains who practice this real wicker weaving. The awning, as the drawing shows, is a band of the same kind of weaving on a warp of twigs in bunches of twos or threes, these last attached to blocks of wood at the ends of the fabric. The awning is bowed upward and the end blocks lashed to the upper portions of the limbs of the bow. A small aperture in the floor is for convenience in cleansing. The next figure shows how by using parti-colored and finer twigs, and by a different administration of the middle warp strands and the awning, pretty varieties of the same style of cradle may be effected (Figs. 25. 26).

The Zuñi cradle-board is worthy of our closest study (Fig. 27). It is founded on a rough piece of board, hewn out to an inch in thickness, 3 feet long, and about a foot wide. A pillow-rest of wood is fastened so as to steady the head. This is pegged or nailed down to the board.

* Powell, Maj. J.W. (Exploration of the Colorado River. Washington, 1875. 4to). In Grand Cañon the Indians "make a wicker board by plaiting willows, * * * sew a buckskin cloth to either edge, * * * filled in the middle, * * * to form a sack," and place the child, wrapped in fur, within this. There is a wicker shade at the head, and the cradle is slung on the mother's back by a strap passing over the forehead (p 127).

There is no buckskin covering, but a set of loops along the edges serve to accomplish the lashing. The most curious part of the apparatus is a series of four bows or half hoops of equal radius. These are woven to the side of the board, as indicated in the drawing. A string is tied to the top of the board and to each of the hoops at a certain distance, so that when the loose end of the string is pulled the hoops form a "buggy



Fig. 24.

MOKI CRADLE-FRAME OF COURSE WOODS, WITH AWNING.

COL. N. ALLEN, MEX. PROVINCE, ARIZONA. Collected by Mr. J. W. Powell.



Fig. 25.

MOKI CRADLE-FRAME OF FINE WOODS, RESEMBLING THE SACRED HEAL-TRAY. AWNING UNIQUE.

COL. N. ALLEN, U. S. M. B. PROVINCE, ARIZONA. Collected by Mr. J. W. Powell.

top" or adjustable hood to the cradle. In no other cradle is the problem more delicate. It depends almost entirely upon the bed to nullify the effects of this cradle. Without examining the heads of Zuñi Indians at all we ought to find the occiput pushed in, flattened, and asymmetrical. Should they prove otherwise, it is right to assume a bed able to counteract this influence.

The Apache Indians of Arizona and New Mexico* make a very elaborate cradle, the substantial part consisting of the frame and the board (Fig. 25, a & b). The frame is elliptical in form, the outline being formed by a pole of wood bent and the two ends spliced and lashed. Upon this ellipse are laid batts of white pine, planed. Over the child's

* *Burrocks, Native Races of the Pacific States*, New York, 1873, Vol. I. Among the Apaches of the Lower Colorado the great "w" is widely separated from the others, which seems probably from wading in marshy bottoms" (p. 429).

face is built the hood formed by bending two bows of supple wood to the required shape and overlaying them with transverse laths of pine laid close together and tied down. The upper edges of these laths are beveled, so as to give a pretty effect to the curved surface. The leather-work on the cradle consists of a gable of white buckskin to the hood, a binding of brown buckskin on to the bowed frame above the hood, variegated with narrow bands of white buckskin, and, finally, the true sides or capsule of the cradle, consisting of a strip of soft brown buckskin, say 10 inches wide, cut in a fringe along its lower border and edged with fringe of white buckskin along its upper outer edge. This strip is fastened to the cradle continuously, commencing at an upper margin of the awning, carried along this awning, fastened to its lower margin 4 inches above the junction of the awning and frame, passes on to the foot and around to the other side, as at first. Slits are made in the upper edge of the brown buckskin just below where the white

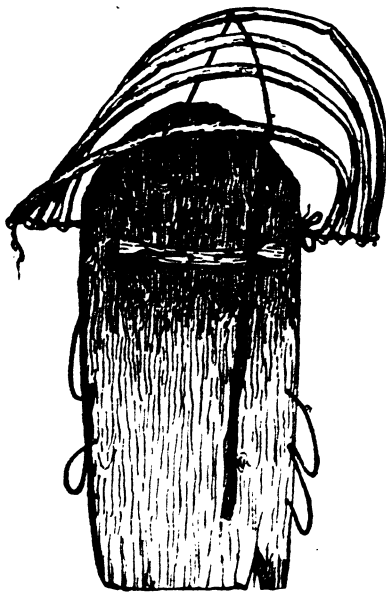


Fig. 27.

ZUNI CRADLE-FRAME.

(Cat. No. 69015, U. S. N. M. Zuni Pueblo, New Mexico.
Collected by Col. James Stevenson.

buckskin fringe is sewed or run on, and back and forward through these slits a broad soft band of buckskin passes to form the cradle lashing. To perfect the ornamentation of this beautiful object, tassels of buckskin in two colors, and strings of red, white, and blue beads are disposed with great care. Thanks to the generosity of friends living on the frontier, it is possible to reproduce from photographs the method of fastening the child in the cradle. (Fig. 29.) A bed of fur lies between the back of the infant and the floor of the cradle. The head is perfectly loose and free during waking moments. Indeed, there is always free play to the child's head in all cradles except on the Pacific coast around the Columbia River and Puget Sound. Another drawing (Fig. 30) exhibits the method of nursing the babe without removing it from the cradle. Finally, Fig. 31 shows an infant and a small child that have been subjected to the cradle-board.

The cradle-frame of the Navajos is made of two pieces of wood lashed together so as to make the upper end or head in shape like a boot-jack. To the sides of these boards long loops of buckskin are attached to aid in the lashing (Fig. 32). A new feature in western cradles appears in

the specimen figured. It is the foot-board, so common in all the Algonkin and Iroquois specimens. The pillow is to be noticed especially, consisting of soft furs and rags rolled up in soft buckskin and fastened to the board. The awning frame is a wide bow of thin, hard wood, over which falls a wide, long vail or flap of buckskin. This cradle was collected by Dr. E. W. Shufeldt, U. S. Army, who kindly made some investigations relative to the use and effect of the Navajo cradle.

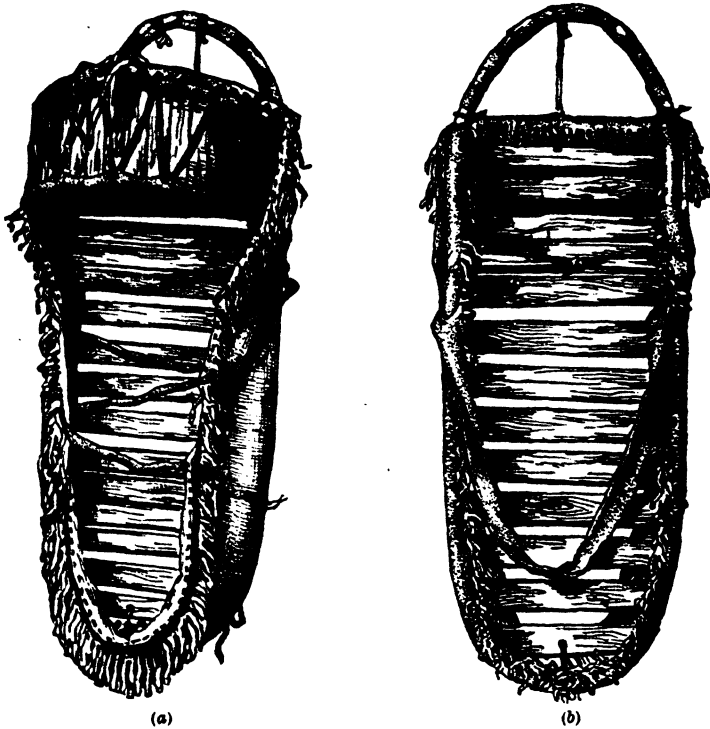


Fig. 28.

APACHE CRADLE. FRONT AND BACK VIEW.

(Cat. No. 21535. U. S. N. M. Arizona Territory. Collected by Dr. J. B. White, U. S. A.)

Of some two or three dozen children of all ages from the infant upwards that I have examined I have yet to find a case wherein the Navajo mother has not taken the special precaution to place a soft and ample pad in the cradle to protect the back of the child's head. Moreover, I have yet to see a case, except for a few days or more in the very youngest of babies, where the head is strapped at all. On the other hand, this part of the body is allowed all possible freedom. I am here enabled to present a picture, which shows exactly the method employed by these squaws in both carrying and strapping their babies in the cradle (Fig. 33.)

It will at once be observed that the head of the child is perfectly free, and that it has been supplied with a thick and soft pillow at the back

of it, whereas the body and limbs have been strapped up almost to the last degree. This child has light, thin hair, through which the general form of the skull could be easily examined, but after the most careful measurements I failed to detect any flattening of the occipital region of the head.

In examining the full blooded infants of different ages of this tribe of Indians I occasionally found one wherein I thought I could satisfactorily determine that the back of its head was unduly flattened, but it was by no means always the case.

Another thing must be remembered, and this is that these Navajo women do not always keep their infants thus strapped up in their cradles, and this fact goes to sustain the proposition that whatever pressure is brought to bear against the back of their heads, it is not a constant one. We often see here the little Navajo babies playing about for hours together at a time when they are scarcely able to walk. Among older children I have satisfied myself—as well as I could through their matted hair—that the hinder region of their heads was flattened, but it never seemed to equal that of the Navajo girl, which I have illustrated in the October number of the *Journal of Anatomy*.

There can be, I think, no question but that Prof. Sir William Turner is correct in regard to its being not only a distortion but due to pressure, though it would appear from the examinations which I have been able to make that at some time or other the strapping must have been very differently applied. To produce posterior flattening of the skull alone the pressure must be applied only upon that side, and to do this, in order to produce anything like the extraordinarily distorted skull that I have figured in my second paper on this subject, the child would have to have its head against a hard board for a long time and continually kept there. If it were strapped it must be quite obvious that a certain amount of frontal flattening would also be produced, but I have never discovered such a distortion in any of the Navajo skulls.

Now, so far as I have seen, they do not treat their children in this way, but, as I have said, always give them a soft pillow and leave the head free.

Perhaps in former times the strapping of their babies in these cradles was very different from the methods now employed among this tribe, and again, the question of heredity may possibly enter into the subject,



Fig. 29.
APACHE WOMAN CARRYING CHILD.
(From photograph.)

or more extended observations may prove that this flattening of the skull only occurs in a certain proportion of the representatives of this race, and not in every individual.



Fig. 30.

APACHE MOTHER NURSING CHILD.

(From photograph.)

Dr. R. W. Shufeldt, U. S. Army, sent to Prof. Sir William Turner, of Edinburgh, a Navajo skull, which is described in the *Journal of Anatomy and Physiology*, vol. XX, p. 430, as follows: The skull presented a well-marked parieto-occipital flattening, obviously due to artificial pressure, which had been applied so as to cause the suprasquamous part of the occipital bone and the posterior three-fourths of the parietal to slope upwards and forwards. The frontal region did not exhibit any flattening, so that in this individual, and it may be in his tribe of Indians, the pressure applied in infancy was apparently limited to the back of the head. Owing to this artificial distortion the longitudinal diameter of the head was diminished, and the cephalic index 94.6, computed from Dr. Shufeldt's measurements of the length and breadth, was therefore higher than it would have been in an undeformed skull. The cranium was hyperbrachycephalic.

The height of the skull was also very considerable and reached, as may be seen from the table, 115 millimeters; the vertical index was 89, so that the skull was hyperacrocephalic. In all probability the pressure during infancy, which shortened the skull in its antero-posterior direction, forced the vertex upwards and added to the height of the cranium, so that the high vertical index was occasioned both by diminished length and increased height. The skull was cryptozygous, for not only was the breadth in the parietal region great, but the stephanic diameter was 137 millimeters. The glabella was not very prominent, but the su-



Fig. 31.

APACHE MOTHER WITH CHILDREN.

(From photograph.)

praciliary ridges were thick and strong. The bridge of the nose was concave forward, so that the tip projected to the front. The basi-nasal diameter was 105 millimeters; the basi-alveolar 98 millimeters, the gnathic index was 93, and the skull was orthognathic. The nasal spine of the superior maxillæ was moderate. Where the side walls of the anterior nares joined the floor the margin of the opening was rounded. The transverse diameter of the orbit was 40 millimeters, the vertical diameter 36, the orbital index was 90, and the orbit was megaseme. The

nasal was 48 millimeters, the nasal width 25, the nasal index was 52, and the nose was mesorhine. The palato-maxillary length was 56, the palato-maxillary width was 72 millimeters; the palato-maxillary index was 128, and the roof of the mouth was brachyuranic. The teeth were all erupted and not worn. The cranial sutures were all unossified.

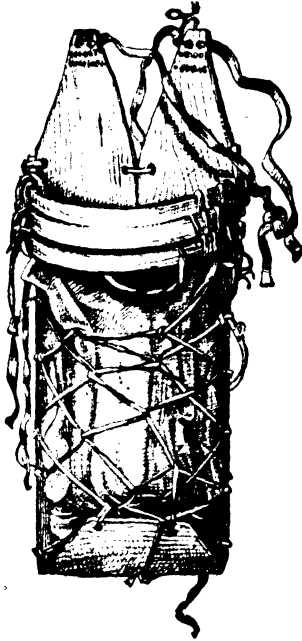


Fig. 32.

NAVAJO CRADLE: FULL-RIGGED. OF THE FOURER SORT.

From Arizona.



Fig. 33.

NAVAJO CRADLE, WITH WOODEN HOOD AND AWNING OF DRESSED BUCKSKIN.

Cal. No. 127615, U. S. N. M., Fort Wingate, New Mexico (Collected by Dr. R. W. Shufeldt, U. S. A.)

The parieto-sphenoid suture in the pterion was 19 millimeters in antero-posterior diameter. There were no Wormian bones. The anterior end of the inferior turbinated bone was almost in the same plane as the anterior nares.

The Comanche cradle (6970) is the most primitive cradle in the National Museum (Fig. 34). It is a strip of black bear-skin 30 inches long and 20 wide, doubled together in form of a cradle-frame. Along the side edges loops of buckskin are made to receive the lacing. The loops are formed as follows: A buckskin string is passed through a hole in the bear-skin and the longer end passed through a slit or cut in the shorter end. The long end is then passed through the next hole and drawn until a loop of sufficient size is left; a slit is made in the string near the last hole passed through, and then the whole lashing is drawn

through this slit. This serves the purpose of a knot at each hole, as in many other cradles. A foot-piece of bear-skin is sewed in with coarse leather string.*

Governor Stevens (Ind. Aff. Rept., 1854) says the Blackfeet women carry their children in their arms or in a robe behind their backs. When traveling, the children are placed in sacks of skin on the tent poles. I saw no cradle of any form. We have in this mention a parallel to the Comanche type. Note also the use of stiff rawhide as a substitute or antecedent of boards to secure stiffness. The subject will come up again in speaking of the Sioux and other Eastern cradles.



Fig. 34.

COMANCHE CRADLE OF THE RUDEST SORT, MADE OF A STIFF PIECE OF BLACK BEAR-SKIN.

(Cat. No. 6970, U. S. N. M. Texas. Collected by Edward Palmer.)



Fig. 35.

BLACKFEET CRADLE, MADE OF LATTICE-WORK AND LEATHER.

(Cat. No. 6918, U. S. N. M. Texas. Collected by Edward Palmer.)

The frame illustrated by Fig. 35 belongs to the latticed type, and is thus constructed: Two strips of narrow board, often native hewn, wider and further apart at the upper end, are held in place by cross-pieces lashed and apart just the length of the leather cradle sheath. This lashing is very ingeniously done; four holes an inch apart are bored through the frame board and cross-piece at the corners of a square, a string of buckskin is passed backward and forward from hole to hole

* Bancroft (Native Races of the Pacific States, N. Y., 1873, vol. 1): As soon as a Comanche child is born "it is fastened to a small board by bandages, and so carried for several months on the back of the mother. Later the child rides on the mother's hip, or is carried on her back in a basket or blanket" (pp. 513, 514).

and the two ends tied, or one end is passed through a slit cut in the other. The lashing does not cross the square on either side diagonally. Above the upper cross-piece the frame pieces project a foot and are straightened atop like fence pickets. Disks of German silver and brass-headed nails are used in profusion to form various geometric ornaments; upon the front of the frame, between the cross-pieces, a strip of buffalo hide is sewn, with rawhide string passing through holes bored in with the hair side (the side pieces) towards the cradle-bed.

The inclosing case is a shoe-shaped bag made of a single piece of soft deer-skin lashed together half way on top in the usual manner, and kept open around the face by a stiffening of buffalo leather or rawhide. A small opening is left opposite the penis, and a stiffening piece keeps the bag open at the feet. This case is attached to the frame by thong lashings. Little sleigh bells, bits of leather, feathers, etc., complete the ornamentation (Fig. 36).

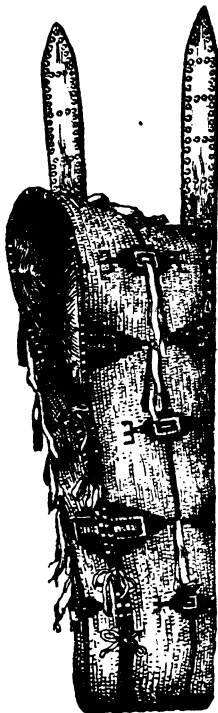


Fig. 36.

UGLALLA SIOUX CRADLE.
Similar to Fig. 35, with
addition of beading.

(Cat. No. 75472. Black Hills, Dakota.)



Fig. 36a.

UGLALLA SIOUX WOMAN.

(From photograph.)

The Sioux cradle is a frame of two diverging slats, painted yellow, held in place at the head and foot by cross-slats, lashed as in the Comanche cradle, with this difference, that the string crosses between the holes diagonally. This is true, but may have no significance. The tops of the side pieces project above the cradle sack at least 18 inches, and

are studded with brass-headed nails in straight lines (Figs. 36, 36 a). As in the Comanche cradle there is a bottom or matfrass, and a quilt of calico, lined, supplants the buffalo hide. The baby-case is shoe-shaped, the part around the head and shoulders stiffened with a lining of buffalo leather. All over the outside of the baby-case bead-work is laid on in geometric patterns of blue, red, yellow, green, and blue-black on a white ground. The beads are strung on a fine sinew-thread in proper number and color to extend quite across the case. This string is then tacked down at intervals of three-fourths of an inch so regularly as to form continuous creased lines, extending from the foot longitudinally around the baby-case to the foot on the other side. Streamers of colored tape and ribbon take the place of old-fashioned strings, fur, and feathers. The edges of the lower half of the case are joined by four strings tied separately, instead of the universal lashing. There are about this cradle several marks of modification by contact with whites, which show at the same time the tenacity with which old forms remain and the readiness with which they yield to pressure at the points of least resistance, indicating also where the points of least resistance are.

Another specimen of Sioux cradle has the back-board square at top, carved and painted, barrow-shaped, like last, awning-frame bent and painted, covering-cloth decorated with beads. It is tacked around edge of side board, brought up and laced in the middle like a shoe. Model of doll with iron necklace. Length, $28\frac{3}{4}$ inches; width, 13 inches. Back-board carved on front above; back-brace has large rounded ends; foot-rest low, curved around at bottom; cradle covered over with quill-work in red, white, and black; pattern, lozenges, men, horses, etc.; decorated with iron bells; opening across cradle-cover in middle. (Fig. 37.)

Mr. Catlin thus describes the Sioux cradle, from a specimen in his collection, and the early life of the Sioux infant: "The back-board is wide; wedge-shaped opening made by cutting piece out of top; top is painted and decorated with beads; cradle has bent-wood sides, which make it like a barrow; the head-pad is over the lower part of the wedge-opening; ash awning-frame. The ends of this are fastened to a rod going across the back, by a device, which may be called an ear-mortise. It is held down over rod by an iron dog fastened to side of cradle. Cradle, $29\frac{1}{2}$ inches long, 12 inches wide; length of side board, $2\frac{1}{2}$ inches; height, $4\frac{1}{2}$ inches; height of awning-frame, $14\frac{1}{2}$ inches; width, $16\frac{1}{2}$ inches.

"The custom of carrying the child, among the Mississippi Sioux, is not peculiar to this tribe, but belongs alike to all, as far as I have yet visited them, and also as far as I have been able to learn from travelers who have been amongst tribes that I have not yet seen. The child, in its earliest infancy, has its back lashed to a straight board, being fastened to it by bandages, which pass around it in front, and on the back of the board they are tightened to the necessary degree by lacing-strings, which hold it in a straight and healthy position, with its feet resting on a broad hoop, which passes around the foot of the cradle, and the child's

position (as it rides on its mother's back, supported by a broad strap that passes across her forehead), that of standing erect, which, no doubt, has a tendency to produce straight limbs, sound lungs, and long life.



Fig. 37.

SIOUX CRADLE.

(Cat. No. 73311, U. S. N. M. Missouri River. Collected by George Catlin.)

"In plate 232, letter *d*, is a correct drawing of a Sioux cradle, which is in my collection, and was purchased from a Sioux woman's back, as she was carrying her infant in it, as is seen in letter *e* of the same plate.

"In this instance, as is often the case, the bandages that pass around the cradle, holding the child in, are all the way covered with a beautiful embroidery of porcupine quills, with ingenious figures of horses, men, etc. A broad hoop of elastic wood passes around in front of the child's face to protect it in case of a fall, from the front of which is suspended a little toy of exquisite embroidery for the child to handle and amuse itself with. To this and other little trinkets hanging in front of it there are attached many little tinsel and tinkling things of the

brightest colors to amuse both the eyes and the ears of the child. While traveling on horseback the arms of the child are fastened under the bandages, so as not to be endangered if the cradle falls, and when at rest they are generally taken out, allowing the infant to reach and amuse itself with the little toys and trinkets that are placed before it and within its reach.

"The infant is carried in this manner until it is five, six, or seven months old, after which it is carried on the back in the manner represented in two of the figures of the same plate, and held within the folds of the robe or blanket.

"The modes of carrying the infant when riding are also here shown, and the manner in which the women ride, which, amongst all the tribes, is astride, in the same manner as that practiced by the men.

"Letter *b*, in the same plate, is a mourning cradle, and opens to the view of the reader another very curious and interesting custom. If the infant dies during the time that is allotted to it to be carried in this cradle, it is buried, and the disconsolate mother fills the cradle

with black quills and feathers in the parts which the child's body had occupied, and in this way carries it around with her wherever she goes, for a year or more, with as much care as if her infant were alive and in it, and she often lays or stands it leaning against the side of the wigwam, where she is all day engaged in her needlework, and chatting and talking to it as familiarly and affectionately as if it were her loved infant, instead of its shell, that she was talking to. So lasting and so strong is the affection of these women for the lost child that it matters not how heavy or cruel their load or how rugged the route they have to pass over, they will faithfully carry this, and carefully, from day to day, and even more strictly perform their duties to it than if the child were alive and in it.

"In the little toy that I have mentioned, and which is suspended before the child's face, is carefully and superstitiously preserved the umbilicus, which is always secured at the time of its birth, and, being rolled up into a little wad of the size of a pea and dried, it is inclosed in the center of this little bag and placed before the child's face, as its protector and its security for "good luck" and long life.

"Letter c, same plate, exhibits a number of forms and different tastes of these little toys, which I have purchased from the women, which they were very willing to sell for a trifling present; but in every instance they cut them open and removed from within a bunch of cotton or moss, the little sacred medicine, which to part with would be to endanger the health of the child, a thing that no consideration would have induced them in any instance to have done."* (Pages 130-132, vol. II, Catlin's Eight Years).

* Long, Maj. S. H. (Expedition to the Sources of the St. Peter's River. Philadelphia. 1824. 8vo.) Among the Pottawatomie great care is taken that the body shall be straight and well formed; no attempt * * * is made to change the shape of the head, "this being regarded as having a tribal significance" (vol. I, p. 100). On the Cottonwood River, Long saw an old Pottawatomie chief with "a child-board on his back, in which he carried his little grandson" (vol. I, p. 178). The child was naked (p. 179). Of the Dacotah, Long or Keating, who compiled and edited his notes, says: "The practice of shaping the heads of infants is unknown to them" (vol. I, p. 404).

Charlevoix, Pére de. (Journal of a Voyage to North America. London. 1761. 8vo.) The Têtes de Boule (Roundheads), an Algonquin tribe north of Montreal, "have their name from the roundness of their heads; they think there is a great beauty in this figure, and it is very probable the mothers give it to their children while in the cradle" (vol. I, Letter XI, p. 285). Speaking of the fine figures of the "Indians of Canada," Charlevoix says that one reason for this is, that "their bodies are not constricted in the cradle" (vol. II, Letter XXI, p. 79). Just after (p. 120) he describes the ornamentation of "their children's cradles" among the Hurons.

Lahontan, Baron. (New Voyages to North America. London. 1735, 2d ed. 8vo.) These observations were made upon the Algonkian and Iroquoian tribes of the St. Lawrence and the Lakes in the latter part of the seventeenth century. Like Hearne, he says: "There is no such thing as a cradle among the savages" (vol. II, p. 7); but he adds that "the mothers make use of certain little boards, stuffed with cotton, upon

East of the Mississippi River, north of the Tennessee and the North Carolina line, and south of Hudson Bay lived Algonkin and Iroquois stocks, and all of them used a flat cradle-board, not far from $2\frac{1}{2}$ feet long, 10 inches wide, and one-half inch thick, tapering wider at the head. The St. Regis Iroquois, in the north of New York and near the

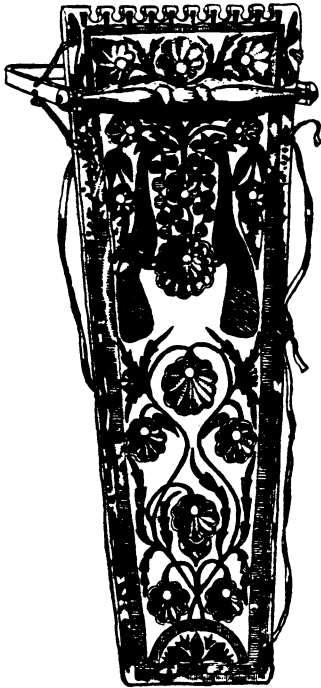


Fig. 38.

IROQUOIS CRADLE. BACK VIEW.

(Cat. No. 18006, U. S. N. M. St. Regis, New York.
Collected by R. B. Hough.)

Canada line, have for many years bought their cradle-boards from the whites or made them of material bought from a white man (Figs. 39, 40). The specimen illustrated has the back carved in flowers and birds, and painted blue, red, green, and yellow. The cleat at the upper end of the back is a modern chair-round. The foot-board is a small shelf or bracket, on which the child's feet rest.

An interesting relic of savagery on this quite civilized cradle are the notches in the awning-bow, falling down over the ends of the cleat, extended and held in place by braces of leather thong. The hoop serves many functions, such as support for sunshade, rain protector, mosquito net, ornaments, dangling trinkets to please the child, etc.

1806. Cradle back-board, carved in peacocks, and painted bright colors. Square at top. Awning frame mortised at ends, which allow them to slide over awning-bar. Held down and guyed by stays on opposite side. Has a movable foot-rest at bottom. Thongs along sides

for lashing baby in. Length, $29\frac{1}{4}$ inches; width, top, $10\frac{1}{2}$ inches; bottom, $8\frac{1}{2}$ inches. Foot-rest, height, $3\frac{1}{2}$ inches; width, 6 inches. (Fig. 38.)

The following notes regarding the Indians east of the Mississippi River have been collected in the course of the author's reading, and are here appended to throw additional light upon the subject:

Heriot, G. (Travels through the Canadas. London, 1807. 4to.) "The use of a pillow is known to but a few" among the Iroquois tribes. Having seen that article in use, they imitate it "with a billet of wood, with a mat rolled up, or with skins stuffed with hair (p. 237).

which the children lie as if their backs were glued to them, being swaddled in linnen and kept on with swath bands run through the sides of the boards. To these boards they tie strings, by which they hang their children on the branches of trees" (vol. II, p. 7). "As soon as their children come into the world they dip them in warm water up to the chin." The Dacotahs, Aleutian Islanders, etc., use cold water. "After this they swathe them down upon little boards or planks, stuffed with cotton, where they lie upon their backs" (vol. II, p. 43).

Jefferys, T. (Nat. and Civil Hist. of French Dominions in North and South America, London, 1760, fol.), says of Algonkian Têtes de Boul: "The Round-Heads * * * take their name from the figure of their heads. * * * It is believed that the mothers * * * form the heads of the children into this shape when they are in the cradle" (part I, p. 47).

Liancourt, Duke de. (Travels through the United States, etc. London, 1799. 4to.) Very much the same account as that of Weld, etc., is given by this traveler of the cradle-board used by the Iroquois tribes. He says, however, that "suckling children are generally suspended in a basket fastened to the ceiling" (vol. I, p. 177).

Weld, I. (Travels through North America and Canada. London. 1799. 4to.) As the result of general observation of the tribes of Canada and the Lakes, he says that "an Indian child, soon after it is born, is swathed with cloths or *skins* (*vide* Long, Notes), laid on its back, and bound down on a piece of thick board, spread with soft moss." Hoops protect the face. The cradle-board is suspended on the mother's back when traveling, otherwise hung by the head-strap. Infants are also put in hammocks, and when able to crawl are released from the cradle-board (p. 387).

"Their infants are borne with haire on their heads, and are of complexion white as our nation, but their mothers in their infancy make a bath of Walnut leaves, huskes of Walnuts and such things as will stain their skinne for ever, wherein they did & washe them to make them tawny. The coloure of their haire is black & their eyes black."

NOTE.—The idea that the Indian was born white was very commonly entertained in the first half of the seventeenth century. Lechford, in his "Plaine Dealing," p. 50, says: "They are of complexion swarthy & tawny. Their children are borne white, but they bedaube them with oyle & colours presently." Josselyn also speaks of the Indians "dying their children with a liquor of boiled Hemlock-Bark." (Two Voyages, p. 128.) Speaking of the Virginia women Smith says: "To make their children hardie in the coldest mornings they them wash in the rivers, & by paynting & oyntments so tanne their skinnes that after a year or two no weather will hurt them." (True, Travels, vol. I, p. 131.) Strachey gives a more particular account of the supposed process: "The Indians are generally of a cullour browne or rather tawny, which they cast themselves into with a kind of arsenic stone, & of the same hue are their women, howbeit yt is supposed neither of them naturally borne so discolored; for Capt. Smith (lyving somtymes amongst them) affirmeth how they are from the womb indifferent white, but as the men, so doe the women dye & disguise themselves into this tawny cowler, esteeming yt the best beauty to be neerest such a kynd of murrey as a sodden quince is of (to liken yt to the neerest coulor I can), for which they daily anoint both face & bodyes all over with such a kind of fucus or unguent as can cast them into that stayne." (Historie, 63.) ("New English Canaan." Prince Soc. Boston, 1883, p. 147.)

"These infants are carried at their mothers' backs by the help of a cradle made of a board forket at both ends whereon the childe is fast bound and wrapped in furies; his knees thrust up towards his bellie, because they may be the more usefull for them when he sitteth, which is as a dogge does on his bumme; and this cradle surely preserves them

better than the cradles of our nation, for as much as we find them well proportioned, not any of them crooked-backed or wry-legged; and to give their character in a word, they are as proper men and women for feature and limbs as can be found, for flesh and blood as active." ("New English Canaan." Prince Soc. Boston, 1883, p. 147.)

The Choktah flatten their foreheads with a bag of sand, which with great care they keep fastened on the skull of the infant while it is in its tender and imperfect state. Thus they quite deform their face and give themselves an appearance which is disagreeable to any but those of their own likeness.* (Adair's American Indians, p. 284.)

"The Indians flatten their heads in divers forms, but it is chiefly the crown of the head they depress in order to beautify themselves, as their wild fancy terms it, for they call us long heads by way of contempt. The Choktah Indians flatten their foreheads from the top of the head to the eye-brows with a small bag of sand, which gives them a hideous appearance, as the forehead naturally shoots upward, according as it is flattened, thus, the rising of the nose, instead of being equidistant from the beginning of the chin to that of the hair is, by their wild mechanism, placed a great deal nearer to the one and farther from the other. The Indian nations round South Carolina and all the way to New Mexico (properly called Mechiko), to effect this, fix the tender infant on a kind of cradle, where his feet are tilted above a foot higher than a horizontal position, his head bends back into a hole made on purpose to receive it, where he bears the chief part of his weight on the crown of the head upon a small bag of sand, without being in the least able to move himself. The skull, resembling a fine cartilaginous substance, in its infant state, is capable of taking any impression. By this pressure, and their thus flattening the crown of the head, they consequently make their heads thick and their faces broad, for when the smooth channel of

* * Volney, C. F. (A View of the Soil and Climate of the United States of America. Philadelphia, 1804. 8 vo.) It is "the custom of the Choctaws to mould the skull of their new-born children to the shape of a truncated pyramid, by pressing them between boards. This method is so effectual that the tribe is known by the name of the Flat-Heads" (p. 365). Among the tribes near the head of the Wabash, "Weeaws, Payories, Sawkies, Pyankishaws, and Miamis, * * * the females * * * carry one or two children behind them in a sort of bag, the ends of which are tied upon their forehead. In this respect they have a strong resemblance to our [the French] gypsies" (p. 353).

Bartram, William. (Travels through North and South Carolina, Georgia, Florida, etc. London, 1794. 2d ed., 8vo.) "The Choctaws are called by the traders Flats or Flat-Heads, all the males having the fore and hind parts of their skulls artificially flattened or compressed" (p. 515). The infant is placed "in a wooden case," on its back, "a bag of sand being laid on the forehead, which, by continual gentle compression," causes the head to slope "off backwards * * * from the temples upwards." The occiput is received in a concavity "fashioned like a brick-mould" (p. 515).

Heriot, G. (Travels through the Canadas. London, 1807. 4to.) "Some of the tribes of Louisiana flatten the forehead of their children, and cause the summit to terminate in a point. * * * Beauty, in their conception, consists in moulding the head to a round form" (p. 348).

nature is stopped in one place, if a destruction of the whole system doth not thereby ensue, it breaks out in a proportional redundancy in another. May we not to this custom, and as a necessary effect of this cause, attribute their fickle, wild, and cruel tempers? Especially, when we connect therewith both a false education and great exercise to agitate their animal spirits. When the brain, in cooler people, is disturbed, it neither reasons nor determines with proper judgment. The Indians thus look on everything around them through their own false medium, and vilify our heads because they have given a wrong turn to their own." (Adair's American Indians, p. 8.)

Laftau* speaks as follows concerning the Southern Indian cradle:

"The cradle for the savage children in New France is made throughout pretty and roomy. It consists of one or two very thin planks of light wood, 2½ feet long, ornamented on the edges and rounded at the foot, to give convenience of cradling. The child enveloped in fine fur is as though glued to the united planks, and is placed standing up in a way that it shall hang over a little ledge of wood where its feet are, the point turned under for fear lest they should get hurt, and in order that it should hold the fold by which it is necessary to carry the frame. The swaddling-clothes or furs are held up in front by large bands of painted skin, which does not stretch much, and which are passed and repassed in the small loops of tough skin which hang from the sides of the cradle, where they are firmly fastened. They let these swaddling-clothes hang considerably below the cradle, and they throw them behind when they wish to go walking with the child, or let them fall over a half circle, which is fastened to the planks near the head of the child, and which can be made to turn forwards in order that the child can breathe freely without being exposed to the cold of winter or to the stings of mosquitos or gnats in summer, and in order that it should not receive injury if the cradle fell. They put over that half circle little bracelets of porcelain and other little trifles that the Latins call *crepundia*, which serve as an ornament and as playthings to divert the child. Two large lengths of strong leather, which come out from the cradle at the head, enable the mother to carry it everywhere with her, and to fasten below all their other bundles, when they go to the fields, and to suspend to some branch of a tree, where cradled and soothed to sleep by the wind, while she works.

"The children are very warm in the cradle and very easy, for besides the furs, which are very soft, they put much down taken from the calamus (cat-tail, rush?), which they stuff in a wad, or perhaps the pounded bark of the peruche (birch?), with which the women scour their hair to invigorate it. They are also very careful so that it can not soil their furs; by means of a little skin or a rag which they pass between their thighs, which hangs out over the fore part, they can attend to their

* Moeurs des Sauvages Américains, vol. I, p. 597.

natural needs without the inside being wet or soiled, except the down, which is easily replaced with new.

"Some nations in Louisiana, to whom the French have given the name of flat heads, * * * have a groove practically in their cradle, in which the mother puts the child's head; she applies on the front and back of the head a mass of clay which binds and bears down with all force. She cradles the child all the time until its head has taken its shape, and when the sutures of the head have taken consistency. The children suffer extremely, become almost black; a white and viscous liquor comes from the eyes, nose, and ears; they suffer much more from the uneasy situation, where they are forced to pass all the time during the first months of their infancy, but it is the cost of becoming beautiful by art and the suffering to get that charm which nature refuses.

"The Caribs and most of the Southern Indians have also flattened foreheads and pointed heads. Their mothers fasten the head down with little boards and pads of cotton bound strong to the back of the head.

"The child has no other cradle but a hammock proportioned to their height in which the mothers can suspend them and transport them very commodiously, and where the children are cradled all naked, without any pain from confinement.

"The Indians, which are called in Canada (le gens de Terres) *Garhagronnon*, have a different taste from the Flatheads, for their beauty consists in having a round head; thence they are called 'Bullet Heads'" (pp. 593, 597).

"The first years the child is kept all naked in the cabin to keep its body from being injured by the air. When larger it works for the family. They carry water and little billets of wood; this they regard as sport. Up to puberty they neglect their person; no ornaments are worn until they are enrolled in the body of young men. They are educated like Spartans" (p. 597).

"Women strong and robust but are not prolific. The *enceinte* woman does not take care of herself; she carries heavy burdens and works harder as she approaches her time. They say this violent exercise facilitates their parturition and makes the child more robust. No one can deny that they do bring forth with surprising ease. If caught in labor away from the cabin they attend to themselves, and are apparently able to do their regular work the same day" (pp. 590, 591).

"They do suffer and die sometimes, but they bear their pain with such fortitude that they do not seem to suffer" (p. 592).

"Some Southern Indians think if the women do not bear their pain with fortitude the children will inherit their weakness, and they kill those children that are born of such a mother. They kill the mother of a still-born child, and also sacrifice one of twins, because one mother is not enough for two children" (p. 592).

"The Indians will not give their children to others to bring up. If it happens that the mother dies while the child is yet in the cradle, it

is brought up in the family, and what appears strange, old grandmothers, who have passed the age of having children, have their milk return to them, and take the place of the mother. Indians love their children with an extreme passion, and although they do not show their affection by lively caresses, as do the Europeans, their tenderness is, however, not less real. They suckle their children as long as they are able, and do not wean them but from necessity. I have seen children three or four years old taking milk with their younger brothers" (p. 593).

In South America the same custom seems to obtain that we have seen in North America, namely, in the tropics the carrying of children in the shawl or sash, and bedding it in the hammock; while in the colder regions the cradle-frame appears. Frames corresponding to some in North America are found in Peru. Simon de Schryver, in his *Royaume d'Araucanie-Patagonie* (1887), figures at page 21 an Araucanian woman carrying a child in a frame (Fig. 39), which seems to be nothing more



Fig. 39.

ARAUCANIAN WOMAN CARRYING CHILD.

(From Simon de Schryver's "*Royaume d'Araucanie-Patagonie*.")

than a short ladder, with cross-bars. On this frame the child is lashed, the head being perfectly free, except that the lower part of the occiput rests against the top cross-bar, as in the case of the Polynesian pillow. In addition to her living freight the woman carries in front a bag of
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provisions suspended by a cord depending from the head-strap at its junction with the cradle-frame.



Fig. 40.

TURKISH GYPSY CARRYING A CHILD IN PEDDLER'S PACK.

(From photograph in U. S. N. M.)

A feature in the weaving of the Patagonian wallet is worthy of attention, although its description would be better in a paper on weaving. There is in the National Museum a game-bag from Mackenzie River, and another from Kodiak, made of exceedingly fine babbiche or buckskin cut into string. The weaving is effected by means of an endless chain of half-hitches, each loop caught into loop below. In Central America, everywhere, thousands of open net-work bags of all sizes are

made from the pita fiber, the strings of which loop in the same manner. In Peru the same stitch occurs, and now from Patagonia and Tierra del Fuego we receive examples of the same method of weaving.



Fig. 41.

OSTJAK "BABY-JUMPER."

(From Seeborn's "Siberia in Asia.")

The insertion of a rod or a bundle of rushes serves to convert the open net-work bag into a water-tight wallet or a rigid basket.

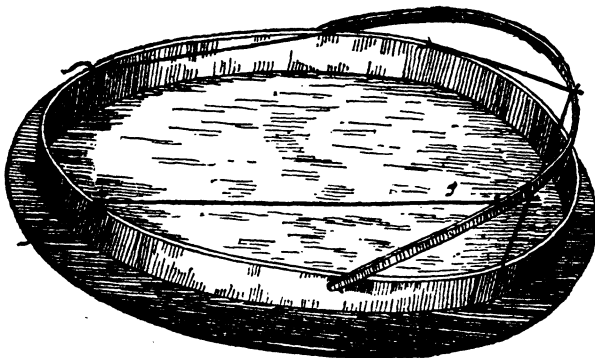


Fig. 42.

OSTJAK CRADLE.

(From Seeborn's "Siberia in Asia.")

Another method of carrying children is shown in Fig. 40. The woman the rerepresented is a Turkish Gypsy, and the child has been placed in a peddler's pack for convenience of carrying.



Fig. 43.
APACHE SQUAW CARRYING A CHILD.
(From photograph in U. S. N. M.)

The resources of the Museum do not justify anything like an exhaustive treatment of the eastern continent. In the three figures shown (Figs. 43, 44, 45) we see the Northern device, in which the safety of the child from cold is the main source of anxiety. The Japanese mother is concerned partly with temperature and partly with transportation. The African mother consults transportation alone. There is nothing in the ordinary treatment of the child to occasion a deformity of the cranium. Any change of the shape of the head must be attributed to congenital causes or to custom.



Fig. 44.
JAPANESE WOMAN CARRYING A CHILD.
(From Racinet's "Le Costume.")



Fig. 45.
AFRICAN WOMAN CARRYING A CHILD.
(From photograph in U. S. N. M.)