

ideal material for the purpose. Last of all came the whaler with plenty of hoop wood, and the ship's blacksmith. In the National Museum the material for the compound bow is baleen, antler, horn, ivory, and wood from whale ships. The grip is the foundation piece, round and rigid. The limbs are worked to shape, spliced on to the ends of the grip and seized in place by a wrapping of sinew yarn or cord or sinnet. The notches are cut on both sides of the nock, which is often pegged on to the end of the limb with treenails. The whole class of projecting weapons must be looked upon as a lesson in techno-geography and as a remarkable example of the power of human ingenuity to throw off all precedents and predilections under sufficient stress and resort to those new methods which nature declares to be the only thing to do.

As previously intimated every Indian boy learned to make a bow. Every Indian man had a certain amount of skill in the art, and when he scoured about the forests, the capabilities of trees for his purposes engaged his thoughts. He saved up good pieces for a rainy day and made the improvement of his artillery a pastime. When he became old, if the fortunes of his existence accorded him such a doubtful blessing, he kept his hold on his tribe by becoming a bowyer when he could no longer take the field. Since the substances used in making bows are of the region, techno-geography finds an excellent illustration in the study of the bows of North America, which may be on this basis thus divided:

(1) *The hard-wood, self-bow area.* It embraced all North America east of the Rocky Mountains and south of Hudson Bay. This area extends beyond the mountains along the southern border, and is invaded by the compound bow at its northeastern extremity. Indeed, in those regions where more highly differentiated forms prevailed, it constantly occurs as the fundamental pattern. (Plates LXI-LXIV, LXXX, LXXXI, LXXXIII-LXXXVI, LXXXIX.)

(2) *The compound-bow area.* By the compound bow is meant one in which the grip and the two wings are separate pieces, or one in which the cupid's bow is made up of as many bits of horn as are necessary. There are really two compound-bow areas, the northeast Eskimo and the Siouan. The former has been described by Boas.

The compound bows of the Sioux are made of buffalo and sheep horn and of the antler of the elk. Dr. Washington Matthews states that he has seen a bow made of a single piece of elk horn. All the examples examined by the writer are wrapped with flannel or buckskin so as to conceal every trace of the joints made by the union of the different parts. The compound bows of the Sioux are the most beautiful in shape of any among savage tribes and recall the outlines of the conventional form of artists. In both types the compound bow arose from a dearth of wood for making a self-bow. (Plates LXII, LXIV, LXV.)