

has given rise to an infinite variety of forms. The failure of certain kinds of trees in many places has put the bowyers to their wit's end in devising substitutes for producing the bow's elasticity. The exigencies of climate and the gloved hand modify the form of the arrow in some regions. The progress of culture, the demands of social customs, and skill of the manufacturer enter into the study of the bow and the arrow. In other words, in passing from the Mexican border northward to the limit of human habitation, one finds the rudest arrow and the rudest bow and the most elaborate arrow and bow ever seen among savages.

Again, in making this journey he will observe how quickly his passage between certain isotherms, forested regions, deserts, tallies with a sensitiveness of the bow or the arrow, which take on new forms at every degree of latitude or temperature.

Finally, if the student be observant, the arrow will write for him long chapters about the people, the fishes, birds, and beasts of the separate regions and their peculiar habits.

The following scheme of weapons devised by M. Adrien de Mortillet is modified to fit the North American Area.

A.—BRUISING AND MANGLING WEAPONS

1. *Held in the hand*.—Stones, clubs.
2. *At end of handle*.—Pogamoggans and casse têtes.
3. *Thrown from hand*.—Sling stones, rabbit sticks, bolas.

B.—SLASHING AND TEARING WEAPONS.

4. *Held in hand*.—Stone daggers and swords.
5. *At end of handle*.—Sioux war clubs, tomahawks.
6. *Thrown from hand*.—Little used.

C.—PIERCING WEAPONS.

7. *Held in hand*.—Bone and stone daggers, slave killers.
8. *At end of handle*.—Lances of all kinds.
9. *Projectiles*.—Arrows, harpoons, blow-tube darts.

Besides those thrown from the hand—stones, rabbit sticks, and bolas—there were four types of manual or operative apparatus used for propelling missile weapons by the North American aborigines,—the bow, the throwing-stick, the sling, and the blow-tube.

The throwing-stick existed throughout the Eskimo area, in south-eastern Alaska, on the coast of California and in Mexico. It is not necessary here to more than mention its occurrence in South America and Australia. This weapon has been described by the author at length in the report of the Smithsonian Institution (1884), and this paper was the starting point of half a dozen by others which well-nigh exhausted that subject.

The sling is found on the California coast north of San Francisco. The blow-tube existed only in those areas where the cane grew in