

Wheels, Planes, and Power

When white settlers came into Iowa a little more than a century ago, they traveled inland in vehicles drawn usually by horses or oxen. As the wagons with their iron-shod wheels rumbled to a stop in some grove or beside a stream or spring, the settlers may have seen Indians starting westward, walking or riding ponies, carrying their possessions on their backs or on the backs of their horses. Sometimes an Indian housewife lashed the ends of two poles to the sides of a patient pony letting the opposite ends drag along the ground. Between these poles she fastened a sort of basket of skins and in or on this travois she transported small children and household goods. Aside from canoes of hollowed logs, bark, or skins, these were the only means of transportation known to the red men. Horses had been brought to America by the white men.

Here on the Iowa prairies one hundred years ago two civilizations came temporarily in contact. The Indians used stone or bone implements, hunted and fought with bows and arrows, and traveled on foot, on horseback, or by canoe. Even their pottery was made without a wheel. The

white men brought tools of iron, hunted and fought with guns, and could travel by wagons. Some of them had come to eastern Iowa on steamboats propelled by paddlewheels powered by steam. Each community had a mill to grind grain or saw lumber and this mill was run by a water wheel. Their women used spinning wheels to make their yarn. Wheels made possible the rapid settlement of Iowa.

The lack of wheels was not limited to the Indians of Iowa. For some reason none of the native people of North and South America were using the wheel at the time white men came to the new world, although archaeologists have recently discovered that an ancient race in Mexico had figures of animals mounted on wheels. This civilization, however, disappeared and the secret of the wheel which they had glimpsed or brought with them from another land lay buried for two thousand years. Other Indians knew the lever, the screw, the wedge, and the inclined plane, but the magic of the wheel escaped them. Far to the north crude sledges, drawn perhaps by men, dogs, or reindeer, slipped over the ice and snow. In the more civilized regions, persons of importance might be carried in litters. The Americas knew only inert plane surfaces as aids in transportation and the power was chiefly human muscle.

Who first invented the wheel is lost in the fog of history. No monument has been erected in his honor. Primitive man no doubt learned that it was easier to roll stones or logs than it was to carry them or drag them along the ground. When he could hack out a narrow section of a log he had a wheel. Perhaps he found that thongs of stretched and dried skins around the circumference of the circle would prevent splitting. As his ingenuity increased, man learned that he could make a wheel with spokes, rim, and hub. It was a great achievement when he could use brass or iron bands to protect the rims.

The wheel brought mobility to mankind and comparative freedom from physical burdens. A platform resting on the axle between two wheels became a war chariot of Egypt or Syria, a Chinese jinricksha, or a peasant's cart. A larger platform or box resting on four wheels made a wagon, a sedan chair on wheels became a carriage. Men or animals furnished the power. For centuries this was the limit of man's ingenuity.

When man combined the idea of the lever and the wheel he invented gears, wheels within wheels, and the mechanical age was born. The muscle power of men and animals was too puny for this age. Wind and water were too uncertain. Steam was the breath of life that started the wheels roll-

ing — pistons and drive wheels, paddlewheels and propellers. Then gasoline was harnessed and the age of speed began. Sheets flapping in the wind suggested airplanes, but wheels, fast moving propellers, are needed to take a plane aloft and keep it there.

And so transportation has progressed by land, water, and air. The century of Iowa's statehood has witnessed the greater part of this advance. When Ansel Briggs was inaugurated Governor of the State of Iowa in 1846, settlers came up the rivers in steamboats, but they crossed the prairies in wagons. Railroads were being built in the east, but it was ten years before train service reached the capital of Iowa. Automobiles came with the new century and airplanes some ten years later. No other century in history witnessed such a change. Inventors combined planes, wheels, and power to produce new and ever faster methods of travel and transportation. Now these are being supplanted by rockets and atomic energy. When the second centennial occurs Iowans may shoot "through the air with the greatest of ease".

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