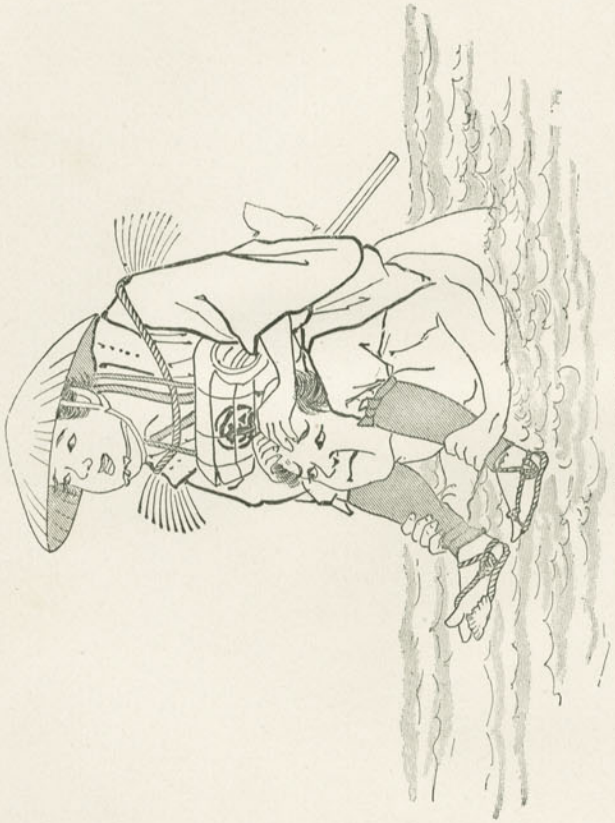


Carriage in Corea.

ORIGIN AND EVOLUTION OF TRANSPORTATION

OR THE

GENESIS OF RAILWAY CARRIAGE.

THIS VOLUME CONTAINS AN ACCOUNT OF THE BEGINNING AND GROWTH OF TRANSPORTATION, EMBELLISHED WITH ENGRAVINGS PORTRAYING THE ABORIGINAL PEOPLE OF THE WORLD AND THEIR METHODS OF CARRIAGE IN EVERY AGE AND QUARTER OF THE GLOBE.

BY

MARSHALL M KIRKMAN.

VOLUME XI.
OF "THE SCIENCE OF RAILWAYS" SERIES.

NEW YORK AND CHICAGO:
THE WORLD RAILWAY PUBLISHING COMPANY.
1900.

J. C. WINSHIP COMPANY, PRINTERS, CHICAGO.

BEGINNING AND GROWTH OF TRANSPORTATION.

Carriage is a part of man. In order to live he must transport what he eats, the clothes he wears, the fuel he uses. He is himself, moreover, of a roving, nomadic disposition. The subject is thus inseparable from him. In depicting the evolution of carriage, therefore, we portray man's development.

The accompanying volume portrays the inception and growth of transportation and the varied processes by which we have reached our present standard. It depicts the result of man's ingenuity, his growth and unconquerable resolve, the steps—always ascending—by which he reached his present civilized station. The subject has also a mechanical interest in this, that to properly appreciate the methods of carriage now in vogue we must be familiar with the appliances which preceded them. In portraying primitive forms of carriage, I have found it necessary to give a brief account of the primitive people of the world and more particularly those of ancient times, among others, the Aryans, Chaldeans, Babylonians, Phœnicians, Egyptians, Grecians and Carthaginians, to whom we are indebted for

many of the methods we employ to-day. The subject is one of intense interest to mankind. The Ancients were, like ourselves, commercially inclined, and while their appliances were rude, and their means of inter-communication and trade limited, their business methods and forms of carriage contained the germs of those now in use. An account of these interesting people, therefore, forms a fit accompaniment to our theme. The evolution of carriage, it is interesting to notice, is so interwoven with the affairs of men that we are compelled to follow the latter step by step from their savage state in order to understand the subject throughout. This duality of interest first suggested the account of primitive men found in the accompanying volume. In the first six editions of the "Science of Railways" the engravings portraying Primitive Carriage, together with more or less of the printed matter relating to aboriginal peoples were scattered throughout the different volumes. Subsequently I selected such pictures as aptly illustrated the subject, and embraced them with an account of primitive people, in this volume. It thus forms a fit supplement to the general theme, or may be considered apart and independently, as an exposition complete in itself, of the varied processes leading up to the railroad era.

TABLE OF CONTENTS.

CHAPTER I.

PREHISTORIC CARRIERS AND ATTENDANT EVOLUTION OF MAN.

Much has been ascertained in regard to the history of property and its relation to mankind; much remains to be learned. We know, however, that its evolution and that of man have at all times gone hand in hand. Where property exists in greatest profusion, where it is most widely diffused and carefully protected, there civilization is advanced to its farthest limits; where it is little known or lightly held, barbarism exists; where it is wholly unknown, savagery reigns.

Slaves and herds make up the wealth of primitive peoples. Among savages possession falls to the strongest. Incentive to accumulate is, therefore, wanting; men will not create where they can not hold and enjoy.

In man's primordial state he differed little from the other animals that inhabited the earth. His vocabulary was confined to gutterals. He used his hands little; his teeth much. His intelligence was rudimentary only. It was the age of the brute. Might governed, and within this limit men did as they pleased. Man's development has grown out of the special facilities he enjoys. The uses to which he is able to put his hands enabled him to make weapons—offensive and defensive—

and with them to overcome the animals before which he had previously cowered in abject fear. This was his first step and led the way to all his subsequent belongings.

A Grecian fable tells us that Phoroneus, who is thought to have lived about 1950 before the Christian era, taught men to live together and observe peaceable relations toward each other. He is said also to have instructed them in the use of fire. Osiris is said to have performed like offices for the Egyptians; Oannes, the fish man, for the Chaldeans; Fo Hi, for the Mongols. Every country has a legendary hero of this kind—a patron who taught men to live together in hordes instead of apart, like the lion and bear.

The evolution of man, prior to the first glimpse we have of him (anterior to the historic period), occupied countless ages, which we can not measure nor trace. However, its processes are generally alike in all ages and countries. But all tribes do not possess equal precipitancy or facility of growth. The denizens of different countries, like domestic animals, do not have equal capacity or initial force. Climatic peculiarities and other local influences, clearly discernible, account for these differences. The habits of our progenitors, the Aryans, were not, it is probable, different originally from those of the Fuegans, who lie together promiscuously at night on the bare ground, naked and unmated, without thought of the morrow, gorging themselves to repletion on the festering carcasses of animals thrown by chance in their

way; or, in the absence of such food, living frugally on the berries and roots of the field. Where opportunity has been afforded for observing man in his savage state, it is found that centuries come and go with little or no change, showing that at this stage incalculable ages are required to effect any substantial progress.

All men, it is probable, were originally cannibals, eating those whom they captured, and, in the absence of captives, slaves and criminals—frequently their wives and children.

Man's idea of property as such does not appear to have been inherent, or, if so, it found no expression. He was at first without forethought; at least, it was not instinctive. Many animals were more provident than he. When he roamed the forests without shelter or thought of the morrow, the lion guarded its feeding ground, the ant husbanded its stores, the bee and woodpecker laid up their hoards of winter supplies, the dog hid the bone he did not want. Many other examples might be cited.

Private property was at first restricted to the weapons, ornaments and clothing of individuals. It was acquired by war or was the work of its owner's hands. It thus appears to have been based, primarily, on personal effort, as it is still. When men died their property was destroyed or buried with them. This because it was supposed to be alive and to partake of the individuality of its owner. By destroying or burying, it became available for use in the future state—for the

savage, quite as much as the Christian, believes uniformly in life beyond the grave. But, as man progressed in ideas and thrift, he became more circumspect; he no longer sacrificed articles of value to the manes of the dead. In lieu thereof he offered up symbols, incantations and other inconsequential and valueless things. If not better, he was more provident, more saving.

In man's primordial state, the members of the family were not equal nor reciprocal in interest. Man's proprietorship in his wife and children was absolute. Indeed, it was this advantage that originally suggested marriage to him. The wife was at first a domestic animal merely, but the most useful that man possessed. She might be killed, sold, traded, rented, lent, cast off, or eaten. She was merchandise merely, the proprietorship of which vested absolutely in the husband. She looked to him for protection. Not to have such a protector was to be an outcast—an estray—a fate inconceivably horrible.

The power of the husband over the wife was rendered doubly cruel by his right to cast her off at pleasure. Thus his rights in every direction were boundless and unquestioned. Affection, which is the outgrowth of refinement, did not exist, except of an animal nature. Man looked upon woman as a useful and necessary commodity; he treated her as such. His power over her offspring was alike unrestrained.

Women and children, including slaves and domestic animals, formed a species of money; they

constituted the first currency of the world. Movable property, they were easily exchangeable.*

All the drudgery of life was performed by women; they were the first burden bearers, the primitive carriers of the world, as they still are among savage people. They also looked after the household and performed its attendant duties, gathering, meanwhile, nuts, herbs, roots, fruits and other edibles necessary to sustain the life of the master and his dependents. So far as agriculture was practiced it was carried on by women. We owe its inception and growth to their patient efforts. It was never popular with man. Work fretted him. He loved to manage, to direct, but not to labor. He has always been a willing overseer.

In their savage state men captured their wives. Afterward they bought them. In the latter case

---

*The evolution of money corresponds with the development of man. Thus, at one time women, children and slaves constituted money; at another time, ornamental shells, arrow heads, beads, cattle, sheep, horses, mules, the skins of animals, and so on, according to the surroundings of the people. As men progressed in wealth and intelligence and were more settled in their mode of life, copper, bronze, iron, tin, lead, and finally silver and gold, were used for money. Gold is the standard at the present time, because it more nearly than any other answers all the requirements of money as regards present quantity, yearly supply, bulk, quality of metal, stability of value, desirability of property, and cost of production. Money is property in the same sense a horse or piece of land is property, and must be intrinsically valuable in itself, and, moreover, a thing generally desired. Superabundance or violent fluctuations attending the production or use of a thing render it unfit for money. What shall constitute money is not a matter of sentiment or tradition, but of present utility.

certain guarantees as regards age, docility, health, strength, fertility, and other acquirements were exacted. Women had no discretion in the matter. The man who could pay the most had the first choice. The law of exchange prevailed. When women were acquired by capture it was not effected wholly through wars or predatory raids, but by stealth or rape. The risks incurred and the reprisals which followed caused the latter practice to fall into disuse early in the history of men, barter taking its place.

Man as the stronger animal and indisposed to labor, instinctively recognized the worth of woman as a helpmeet. More trustworthy than a slave, she was the equal of the latter in strength and ability to work. The material difference between the two consisted in the fact that the children of the former possessed certain property rights, as men began to have belongings, while those of the latter did not. It followed that the value of woman made her a subject of barter. A price was put upon her head, first by her parents and afterward by her husband. This the purchaser was compelled to pay before enjoying the fruit of her labors or other rights of proprietorship.

The ownership of a wife was further esteemed because each child she bore had a property value. Naturally polygamy was practiced: it multiplied gains. Gain has ever been at the root of man's nature; moreover, polygamy accorded with man's tastes and prior habits. It, however, pre-supposes

an income, ownership of property, material possessions. In primitive conditions it is favored by women because it lightens their burdens by dividing the work among many. Women are not nice about practices of this kind during the ages in which they occur; their sensibilities are blunted by degrading bondage or have not yet budded; the married state is to them only a form of servitude. But while they regard it with little or no sentiment, it is gratifying and profitable to the proprietor; it answers those appetites in him which are strongest among men—domination, sexualism and love of property.

Polygamous practices are natural to barbarous peoples. They are founded largely upon disproportion of sexes. The men are killed off in wars and predatory raids. As men become more civilized polygamy answers other conditions, appetites and aims. Thus, possession of a great number of wives becomes an evidence of social importance, the same as the possession of property in a commercial community. Polygamy is properly a prerogative of the rich and powerful, whether legally restricted to them or not. When it is sanctioned by religious beliefs and practices its hold becomes doubly tenacious; then the evolution of man is no longer natural, but constrained.

The prevalence of polygamy in countries where the sexes are evenly divided, or a predominance of men existed, has in many cases led to the introduction of what are known as polyandrous

marriages, wherein one woman became the wife of many; generally a group of brothers. In savage and barbarous communities the powerful absorb the female population. Wherever this is so, polyandrous marriages become the natural recourse of the weak. In such cases the property interests of the family are vested in the wife or principal husband, usually the elder brother. Where the wife possesses the property, her influence is greatly increased thereby. This fact is interesting and instructive, and it harmonizes with the conclusions of sociologists, namely, that women in semi-civilized countries (those we denominate barbarous), when allowed to inherit or otherwise acquire property, are esteemed and considerately treated. This evinces, if proof were needed, that the social distinction between men and women is based, largely, upon property interests, and that the degradation of women in past ages has been greatly, if not wholly, due to absence of proprietorship. If woman wishes to achieve emancipation, she must begin by becoming financially independent; if she wishes to maintain her freedom regardless of man, she must become his equal in physical strength, as she already is in intelligence.

In polyandrous countries and, indeed, in many semi-barbarous communities where the population is crowded or food scarce, female infanticide is practiced in order to lessen the number of mouths to feed. It is common in China and other countries of the orient at this time.

There are many forms of marriage besides these named practiced among primitive peoples: thus, marriages for a term; marriages for particular days in the week; experimental marriages which may be broken within a limited period or under certain circumstances without responsibility attaching; and, finally, incestuous marriages. In all, property reasons govern more or less; thus, the number of days in the week the woman acknowledges the obligations of wife depends, it is probable, on the amount of property, the number of bullocks or goats her husband is able to give her parents.

The manner of acquiring a wife or companion among savage and barbaric peoples is exceedingly varied. Among others, may be mentioned marriage by capture, rape, abduction, personal combat, war, purchase, and barter. This last takes on every possible form of exchange, including that of servitude. Jacob is said to have served fourteen years for Rachel. This instance illustrates the enormous property value of children that attached in primitive times. When wives are acquired by purchase or barter it is considered highly discreditable for a woman to become a wife in any other way; she is demeaned. Such is the iron law of custom, however absurd or cruel it may be apparently.

As mankind emerges from savagery, the position of woman takes on a more favorable aspect. Men are less brutal, less exacting. The warmth of progress is felt. The marriage state

approaches more nearly a union of mutual rights. Man begins to be asked to give reasons for what he does in his family. Woman, if exemplary, cannot be trafficked in or repudiated with former facility. Indeed, under certain circumstances she may leave her husband! The terrible prerogative of repudiation is mitigated. Divorces are even recognized. The character of the latter, however, depends upon the basis of union; if purely commercial, separation is similarly treated. Where the wife is bought, possession is absolute and may only be relinquished by the husband—certainly not without return of purchase money. If the wife cost nothing, if the union is free, separation (save for adultery) may be equally so.

Freedom to marry at pleasure is a step in the evolution of mankind. While prized, it is at first treated with the wild license of children. Thus, a Bedouin has been known to have fifty wives in succession; a Roman to have had twenty-three, and then to have married a woman who had been divorced a like number of times. Another Roman matron had eight husbands in five years. In corrupt or decaying societies the obligation to continency which attaches to marriage is always lightly regarded. In highly civilized countries property reasons and public opinion dignify marriage. The bond is a necessary one, and its attendant evils not worth considering compared with those of a contrary character. For many reasons mankind is more and more inclined to make marriage stable; to prevent its dissolution

for frivolous reasons. It is, above all things, a disciplinary school; an aid in weaning men from gross sensualism; from the overpowering predisposition of the monkey and anthropoid ape.

In every age the condition of the wife foreshadows that of the widow. During the age of promiscuity widows were of course unknown. With the first establishment of the family, savage etiquette required that the wife should die on the tomb of her husband. This practice was a necessary protection to the master; it made the wife a careful guardian of his life. Under ameliorated conditions custom was content with mutilation, fasting, isolation, immurement, and so on. The progress of time brought further relief. As property, woman became too valuable to be killed or mutilated. She accordingly reverted, with other valuable belongings of the deceased, to his heirs. She went with the chattels. In rare cases she reverted to her parents to be resold. The levirate, so called, contemplated her marriage to her husband's brother, thus preserving the property in the family, granting it due protection, and raising up an heir to the deceased. The ancients were ever exceedingly provident notwithstanding their barbarous habits.

The steps leading to woman's enfranchisement have been progressive, but halting and partial. As a wife she has never been recognized as an equal partner, and as a widow her life has been that of a semi-dependent. At best she has only been a fractional sharer in the estate.

The right of women to marry whom they please is freely admitted only in highly liberalized countries; practically only among christianized peoples. The teachings of Christ have idealized marriage, and, in so far as this is the case, have helped to refine woman and repress the brutal in man. The former has not been slow to take advantage of the consideration accorded her by changed conditions so that to-day she is able in many countries to look down upon her past degradation from a height far above those who were once her savage masters.

In the evolution of man monogamy follows, naturally, polygamous practices. It is, however, in every case accepted with reluctance by men, and in order to mitigate its hardships legalized concubinage is associated with it as a salve. It is thus man progresses to superior heights—reluctantly, grudgingly, compromisingly. Where concubinage is practiced the lesser wife (the concubine) can not inherit or possess property, but her children may. Concubinage represents an evolutionary period in the history of every people, and during its prevalence it is not considered objectionable socially or otherwise. While the lesser wife is not the equal of others, she is not socially tabooed. Solomon is said to have had three hundred concubines, the last of the Incas three thousand.*

*The principal wife of the Inca, as is well known, was his sister.

The practice of concubinage is widely distinct from that of prostitution. The prevalence of this latter custom in every age and country evinces woman's thrift and man's incontinence. It is a species of barter on commercial venture—the putting of a property value on what civilized society agrees in designating as an objectionable traffic. It is not, however, thus considered by primitive peoples, but is prosecuted openly, with vigor and profit, according to the measure of capacity of those interested in its gains. Among the ancients prominent and influential men thus derived large revenues. The traffic was not considered more objectionable than the hiring of horses in our time, and it was legalized and taxed the same as other property interests.

Monogamy, or restriction to one wife, is the result of social conditions superior to the inclinations of individuals. It does not by any means imply the betterment of woman's position. That depends upon other things. It does not enfranchise her if attendant conditions are unfavorable. This is demonstrated by the practices of barbarous people, where circumstances compel man to content himself with one wife. He treats her with the same brutality that he does where he has a plurality of wives. Woman's enfranchisement is due to other causes.

The growth of monogamy is ascribed variously to moral progress, the influence of women, the equilibrium of the sexes following a more stable condition of affairs, and, finally, to property con-

siderations, the latter including man's desire to acquire, to hoard and to transmit. Monogamy greatly simplifies the transmission of heritable property, and, in so far as this is so, satisfies one of the strongest cravings of mankind, namely, to found and perpetuate family names and interests.

Among all primeval people unauthorized adultery is punished by the husband as an infringement of his property rights. It is looked upon as a theft, like the use of ground without the payment of rental; a revolt at once concerted and conscious; an organized conspiracy within the family against the master. The punishment, as in all cases of theft, is death, special efforts being put forth to make it impressive. The purpose is two-fold,—to deter others and to satisfy a savage instinct. The forms of punishment indicate man's inherent ferocity. Thus, in primitive societies, adultery, when the husband is not a party to it, is punished by beheading, disemboweling, burying alive, impaling, stoning to death, burning, cutting in pieces, hanging, drowning, being eaten by animals, mutilation, whipping, immurement, banishment, ravishing, confiscation of property and rights, enslavement, or otherwise as ingenuity suggests. It frequently happens, however, that man is content to punish infringement of property rights of this nature by a simple fine. Strabo tells us of a Troglodyte chief who levied a fine of a sheep

on all who committed adultery with his wives.*

It is claimed by eminent sociologists that man's jealousy of his wife in our day had its origin when he had a property interest in her continency; moreover that woman's reserve or modesty is the outgrowth of ages of surveillance and cruel subjection—a length of time compared with which the historical period is but as an hour. How otherwise explain why women possess modesty and men do not? Not only this, but they assert that constancy upon the part of the wife and abstinence before marriage, which we enjoin and agree in denominating virtue in women, is the outgrowth of the care man once expended in guarding his property interests. In exacting this abstinence man himself finally became more or less impregnated with its spirit. Whatever truth there may be in these theories, man, with the organization of the family, more and more separated himself from the horde. His companions became his

*Among the North American Indians adultery might be atoned by the payment of a fine. The fine was the same as for murder. These Indians, at the time of the white man's advent, represented an interesting stage in the Evolution of Man. Polygamy was more or less general; slavery was common, the life of a slave not being esteemed more than that of a dog; to kill a slave was to illustrate the owner's prodigality with his property; all captives became slaves; slaves were otherwise obtained by purchase, for debt, by kidnapping, and for wrongs committed. Money and property was, among many tribes, the basis of aristocracy; thus, the man who paid the most for his wife stood highest in the community; the man who acquired his wife without payment was a social outcast and his progeny hardly within the pale of legitimacy.

wife and children. What the future has in store for him we can only surmise. In all his acts heretofore, however, a determined purpose is apparent, namely, to increase his personality and separate himself from the crowd. We have no reason to suppose this feeling will not continue to animate him. In his property relations he has sought to avoid community of interest.

Communism, while abhorrent to man, nevertheless represents an interesting phase in his evolution. He flew to it in his savage state to escape the rule of the chief, who robbed him at will of his wife, his property and, last of all, of his life. In his marital life man has sought independence. The communal, consanguineous, polygamous, polyandrous and monogamous states through which he has passed have each been a step in this direction; in each his personal rights have been advanced. And when I speak of man I, of course, refer to woman. They are alike in personality, ideality and destiny. Inequality between them is based on physical reasons and grows less apparent with succeeding ages. Each step heightens the regard man pays to woman, so that we come finally to judge of his status by the consideration he accords her. Women possess the same aspirations as men. They are not less able, less subtle, less persistent; they lack only man's physical strength. Whenever they have been permitted to own and enjoy property they have shown unsurpassed talent. Women in ancient Egypt occupied a commanding position until the right to possess property

was taken from them. They were also powerful, according to such interests, among the Berbers, Grecians, Romans and other nations of the past. The possession of property adds enormously to woman's importance in our time. It also transforms her; it makes her, like man, stern, exacting, far-reaching, tyrannical. Woman's physical inferiority is the only bar to her prolonged progress. But up to this time it has been fatal. She has never been able to hold what she has gained.

Among savage and barbarous peoples there are but few slaves, because of inability to utilize them. They consume food, which is difficult to obtain, while they produce little. Such slaves, however, as the master possesses are usually the associates of his wife, her companions in drudgery and servitude. With the advent of agriculture it became possible to utilize slavery on a larger scale. From that time forward, instead of eating or slaughtering captives, they were enslaved. Property in slaves is recognized among primitive people, because based on individual effort. Personal property among savages can only be thus acquired. Men from the first instinctively acknowledge the right of the individual to that which he secures by his own effort.

The primordial state of man was nomadic. Individuals were isolated. Afterward groups or hordes were formed. These were partly protective, partly social. They were dominated by the strongest. We know this because it conforms to natural laws. Promiscuity attended the relations

of the sexes. These relations were purely physiological. Here, as elsewhere, the weaker yielded; man as well as woman. Relations were primordial, those of primitive savages, of beings scarcely above brutes. Men being without language or moral sense were wholly governed by their desires. Individual freedom was possible only to the strongest, to the chief of the horde. These chiefs succeeded each other as dominant animals succeed each other in herds of cattle or swine.

From the first, however, the weak sought to make themselves independent of the chief, so far as their personal relations were concerned; they strove to possess and enjoy undisturbed. The domination of brute force was as intolerable then as now. Man's efforts were directed to the gratification of his natural instincts and, among other things, the establishment of his household on a stable basis. He sought to have the children of his wife recognized through him rather than through her, as was the case during the period of promiscuity.

At what stage in the progress of mankind laws of consanguinity (affection upon the part of the parent for the child) were first evinced, there is no means of knowing. Were they instinctive in women, and, if so, at what period in the development of the child did they terminate? We can scarcely believe that interest in the child was more than momentary, because this is the case to-day amongst the most primitive people of whom we have knowledge; namely, the

inhabitants of Borneo. Reasoning by analogy, men and women were not different primarily in this respect from other animals.

During the period of promiscuity children took cognizance only of maternal relations—of the mother, of her mother, her grandmother, and their descendants. The mother's brother, usually the oldest, occupied the place which the father occupies in civilized communities. The reason is simple enough: the identity of the father was, at best, problematical. But even when assured, his love lacked in intensity that of the mother. Thus groups of consanguineous people were formed. These hordes were attracted toward each other by common ties traced through the mother. This was the first ethnic division of mankind—the origin of the clan; the unit of the tribe; the nucleus of nations. It is because of consanguineous relationship that these primitive people very generally interdict marriages within the clan. Mates must be sought in associated organizations. In the progress of time when a group became too large it segregated—swarmed, like bees, so to speak. The property was divided and another clan formed. Thus the divisions went on until the bonds of relationship were lost or became a tradition only.*

* If the reader asks how we know these things the answer is, through the practices of savage and barbarous peoples with which we are familiar. Very little is left to speculation. The processes of evolution among different people are the same in every age and quarter of the globe. Greater progress is made in some cases than in others, but the successive steps from sav-

In the savage state of man there was neither government nor order. The length of this period no one can estimate. It must, however, have been of enormous duration, since evolution under such circumstances is scarcely perceptible. Violence was the rule; force only was recognized. The leader of to-day was murdered to make a place for the aspirant of to-morrow. Rivalry was not tolerated, and association of interest was unknown.

Out of this chaotic state there emerged the communistic period. It was created to break the intolerable burden of brute force; of the bully who appropriated or murdered at pleasure. Under it comparative safety existed. Something

---

agery are identical. Natural instincts do not differ materially in different races. Our information of the habits of primitive people is copious and reliable; it is based on the observations of travelers and students covering many centuries. It is confirmed by the customs that have been handed down from past ages among civilized and semi-civilized people. Men, moreover, never fully wean themselves of habits based on natural laws; these continue to reassert themselves forever. Observation, analogy, deduction and comparison, all confirm the universality of man and the conditions that characterize his growth. The testimony bearing on this subject is inexhaustible. Every writer who has lived or traveled among primitive peoples, or attentively observed those more advanced, has contributed something to the subject. Among the more generally recognized are: Homer, Herodotus, Thucydides, Xenophon, Polybius, Strabo, Diodorus, Plutarch, Pliny, authors of Archæological Documents, the Scriptures, the Sacred Books of India, the Koran, Marco Polo, Cook, Bruce, Clapperton, Wake, Turner, Remusat, Elphinstone, Prescott, Darwin, Du Chaillu, Schweinfurth, Bancroft, Spencer, Ch. Letourneau. A volume might be filled with the names of authorities.

approaching order was inaugurated. It was, however, the order of savages. Solidarity was mercilessly enforced, for upon it rested the only hope of perpetuating the community and thereby escaping the domination of brute force that before existed. This association of interest not only served as a protection against the strong within the community, but as a bulwark against hostile tribes. In everything custom had the force of law; the rules that governed one governed all. The community ate and lived together. Its food, clothing, and hunting grounds were held in common and regulated by general rules. These rules, while unwritten, might not be transgressed. The peace and lives of the community, and avoidance of former subservient conditions, depended thereon. A species of local government was thus instituted. But while community of interest afforded members personal protection within the precincts of the tribe, it extended no further. Warfare between rival organizations was unceasing. It knew neither mercy nor distinction of age or sex; men met only to destroy each other. Solidarity was a necessity of life. Isolation meant death or slavery.

Wars and predatory raids among savages were ever favorite means of acquiring property, including slaves. The fruits of these wars in communistic societies are divided. But even in this savage state that which men personally achieve in war they are allowed to personally enjoy.

In the primitive organization I am describing society was a unit. Men contributed in common to the general fund, not excepting the obligation to avenge wrongs committed upon individual members of the tribe by enemies or alien people. The communistic period was thus attended by more or less precise arrangements. They were, however, exceedingly rude. Their purpose was to escape the ferocious domination of individual men. Customs were based on the few fundamental wants of the community at the time it was founded; these could not be changed because too many interests conflicted. There was, consequently, no progress. Private ownership of realty was unknown, but temporary rights were, however, in some instances, accorded persons who cleared a plot of ground. The institution of the common hunting ground was an incident of communism. The creation and maintenance of this storehouse indicated a step from primitive conditions. It was a quasi recognition of property rights. But the game that was caught was shared in common, according to such rules as the interests of the tribe prescribed.

The soil, while it had no value, was owned by the community in common. Men might not preempt nor buy as in our day. This was the true age of communism, an age of rude savagery. The so-called communism, which it is sought in a desultory way by idealists to engraft upon highly civilized societies, is a condition or stage of primitive life through which all peoples must pass as

they emerge from savagery. Communism then exists, not because savages, any more than enlightened people, desire to share what they have in common with others, but because solidarity is necessary to protect individuals from the common enemy and otherwise preserve necessary sources of supply. There is, moreover, at that period nothing to divide or share in common except the rude necessities of life. Men's wants are not above those of animals; there are no industries or arts, no luxuries, not even comforts. Property, except of a primitive nature, is unknown; there are no mediums of exchange, no bartering. Men share the miseries of life; the common defense; the procurement of food, and, finally, its division from day to day among the naked and half-famished horde. But even at this period property which individuals have created is, as I have noticed, recognized as personal. The community of interest which exists is not premeditated or studied. It is simply a sequence in evolution; a probationary school; a period of quiescent waiting.

So soon as a community learns to maintain order, to restrain the vicious and secure individual safety to the weak, communism vanishes. The personality of man reasserts itself. Men are no longer content to live in common. Each individual seeks to add to his belongings by personal effort, by self denial, by hoarding and, finally, by industrial and commercial ventures. Our civilization is the result of collective efforts in this

direction. We owe to such aspirations all we have that is not purely animal, and, among other things, family relations.

Love of property was early developed in man. It is his most distinguishing trait. The first storehouse was that of the Clan. But as man emerged from barbarism he craved greater freedom and privacy. These could only be found within an organization controlled by him. Thus the family suggested itself. Here he was supreme. Here, consequently, all his interests were henceforth focused. The creation of the family was due, it is thought, to property interests rather than to those of a moral or platonic nature. Man's love of material things here as elsewhere subdued his savage instincts, heightened his moral sense and increased his understanding.

The repressive communistic period was followed by more beneficent forms of government. The community had found it possible to protect in a measure the individual without destroying his identity in the world. A chief was chosen whose office in time became hereditary. While his power was, in the main, forcibly maintained, it was based on superior attainments; among others, the art of governing. Thus scattered tribes were confederated and great monarchies formed. The process is still going on in savage countries. Early communistic habits, however, more or less permeate these barbaric organizations, but they only serve to hamper man's freedom and lessen his rights. The king is the state;

he takes the place of the commune. He owns the soil and at will grants fiefs to his retainers and favorites. The chiefs of petty tribes make similar allotments to their satellites. The object in each case is the cementing of their power.

Hand in hand with these progressive steps in the early history of the world, religions asserted themselves. From the first their prerogatives were more or less clearly defined and their rights strictly enforced. But their purpose more and more took on an enlightened and humane form in harmony with surroundings. This was to be expected. Religion answers an essential part of man's being and has been found to keep pace with his evolution, his ever growing needs. With each progressive step he is better able to understand it and its beneficent purposes. The church quickly became, through its organized priesthood, the second power in the state—oftentimes the first. Monarchs bowed to it in spiritual matters, frequently in worldly affairs, but whenever possible hastened to absorb its power and privileges in their own persons.

Under the arbitrary and complex forms of government such as I have described, the community, while not at all regarded, was still able, in a small way, to accumulate personal belongings. Industries grew up, commerce received more or less attention, treaties between neighboring peoples were made. Mankind was encouraged to produce. It was thus the needs of the state, more especially of the ruler, were to be met.

Men were, however, widely scattered and their efforts such as might naturally be expected of semi-barbarians. Their habitations were rude and their food and belongings of the simplest kind. In everything they were the creatures of those above them. While they might, in a limited way, acquire personal property, they were denied ownership of the soil; only the usufruct belonged to them. Proprietorship vested in the king or chief.

These forms of government were the natural reaction of man against Communism, the despotism of the mass wherein progress was impossible. They were an outburst of individualism; a protest against stagnation, against the mental and physical paralysis of mediocracy that characterized the commune; they denoted a period of reactionary rage such as men might feel at being harnessed to the dead. The new forms recognized natural and necessary distinctions, the inherent differences in man's make-up. They were a protest against the shackles which had chained men of unequal capacity and temperament to each other. They were, however, neither just nor equitable. Conditions under them were far from favorable to the elevation of man. We look back upon this period with a shudder. Nevertheless, the new order afforded some slight latitude: the force of example, for instance, was something. What one accomplished, others might achieve. The instinct in man to better himself—an instinct which nothing can suppress

—flamed up. So that, as time progressed, the arbitrary and tyrannical privileges of exclusive classes were little by little broken down until finally equal rights in all matters affecting property were secured. Henceforth all was clear. Social differences continued, but men concerned themselves but little about these so long as their property rights were respected. They knew that social distinctions always, sooner or later, give way to property interests with the attendant advantages of the latter.

The barbaric kingdoms of antiquity had their counterpart among the monarchic chiefs of detached tribes. Each exercised power with but little restraint. The age was one of violence, and men sought shelter where they might, as in a storm. What we know as the feudal period succeeded this; a period when class preyed upon class. While king and church disputed for precedence the nobility respected neither, but ruled with an iron hand, robbing where they did not tax. Men were attached to the soil as serfs, or held their belongings subject to the pleasure of the lord of the neighborhood. He protected them against outside aggression, and for this they were glad to merge their fortunes with his. It was their only recourse; isolation meant death or, at least, despoliation. The lord's castle thus became the common refuge in time of danger. The maintenance of its retinue of servants, its vast storehouses and armed forces fell upon the community. In cases of emergency every man

was pledged to take up arms to maintain the common good. Calls of this nature were frequent. Localities preyed upon each other.

Raids, having for their object the acquisition of property or the avenging of wrongs, were of frequent, almost daily, occurrence. Robbery and murder were common. But in all things the power of the protecting lord over his followers was absolute. He might condemn or pardon. No one might pass through his domain without paying a tax; no one live within its precincts without contributing to his might. Thus he recruited his revenues and maintained his state. This condition of affairs was in the end overthrown partly, as in the case of the commune, by man's craving for greater freedom and partly by the jealousy of rival powers. King and church each sought enfranchisement from the other by concessions to their followers. The community looked on and waited, pitting one against the other. Cities thus acquired their freedom, guilds were established, trade was carried on, commerce was extended and property interests safeguarded. Men were permitted to accumulate, to hoard and to transmit property. Individualism more and more began to assert itself. With growth of private property rulers became more complaisant; they ceased to harass individuals and turned to their more rightful functions, namely, the protection of the community as a whole in the peaceful enjoyment of its rights. The struggle, however, between ruler and people

occupied many centuries. It was hard for the former to give up the right to own the soil, to appropriate to the state at will the property of the subject, to hold the life of the latter in his hands. But when the exercise of this power became baneful to the community, instead of generally beneficial, it fell to the ground. But the transition was attended by many deplorable collisions. At this period, as in every other, man's struggle to enfranchise himself met with obstinate resistance. But the difficulties he had to overcome benefited him in this that they taught him moderation, self-control, regard for the rights of others, the courage and fortitude to maintain what he had acquired.

Agriculture, which has done so much to tame man, had its rise during the monarchic period. During the communal age it did not progress farther than the digging of a hole in the ground with a sharp stick and the planting of seeds therein, without subsequent care. The plow was unknown, and when first introduced was made of wood and did little more than scratch the surface of the ground as it was dragged back and forth by women and slaves. Domestic animals in the communistic period were also unknown, or, if known, it had not occurred to man to use them. Women planted, reared and gathered the crops. The men at most only cleared the ground of the timber which encumbered it. Agriculture, it will thus be seen, was but little regarded. Its

fruits were too small, too uncertain, too laboriously attained. It may be said never to have been practiced, except in an isolated way, until men were unable to live by the chase. When the hunting grounds were exhausted, agriculture was the only resource. Its advent closed the communal period. Man's growth henceforth was steady and rapid, and as he progressed in habits of industry and peaceable inclination allotments of the soil occurred. He learned to irrigate, to fertilize, to vary the crops. Agriculture made him independent; made it possible for him to live within himself. His individuality, consequently, more and more strongly asserted itself. But he was retarded by the fact that possession of the land allotted to him was only temporary, although for longer and longer periods. He wanted it in fee, free from restrictions. The king owned in perpetuity, why should not he? Out of these contending influences private ownership of land little by little was evolved. Ownership of attendant personal property, the house with its plot of ground, the domestic animals, farming utensils, and so on, had long been attained. At this period man also acquired (it is a stage in his progress) the right to transmit his property. The law of inheritance became operative. At first carefully regulated, it afterward became free. The way was now open to unlimited accumulations, peaceably acquired, peaceably held, fully transmitted. With these changes man's disposition to acquire, always great, increased tenfold. There opened up to him a boundless field for the gratification of his ambition and the display of his Godlike talents. To this opportunity we owe the fruition of our highest forms of civilization; their quick consummation after countless centuries of savage and semi-barbarous life. But while we owe so much to man's enfranchisement, the excesses growing out of it have in more than one instance occasioned the destruction of the civilization it for a time fostered. They are, however, not irremediable, but merely an incident of man's evolution. The check has come from the vast differences which exist in the acquisitiveness of individuals. A few acquired all, and in doing so deprived their country of its natural defenders and greatest sources of wealth. The citizens who fought to maintain their country and preserve its liberties so long as they had a material interest in its existence did not concern themselves seriously with its affairs when they no longer owned its soil. Herein mainly lies the secret of the decadence of nations. It is not that men become less virile or less courageous, but that they no longer have personal interests to defend. Thus individualism has built up only to destroy. The evil will work its own cure in natural ways, as other and worse evils have been cured in the past.

Such is, in a word, the evolution of man. The picture accords with his nature; his grasping and tyrannical disposition. It is apparent at every

stage in his progress that he is wholly bound up in material things; in the ownership of property. This is his distinguishing trait. In order to understand him, therefore, we must comprehend this peculiarity. This is why I have associated the growth of property with the evolution of man. The two are inseparable. I wish, however, to notice one trait in him engendered by his greed of worldly things. I refer to the more or less willing deference he pays to that which belongs to others; the sentiment that leads him to respect the property rights of his neighbor; what we, in short, call honesty. This sentiment is not innate in him; far from it. It is the outgrowth of enforced habit. The moral sense in civilized man which causes him to distinguish between "mine" and "thine," to respect what is "thine," has no place in his primitive life. Savages have no conception of it. They never question the right of the strongest nor dream they are acting improperly in appropriating the property of those they are able to overcome. It is esteemed praiseworthy. During the heroic period of Greece such practices were common. Honesty had not been evolved among them. The habit (for it is a habit) is the most simple of phenomena. It had its origin in the inception and growth of property and the necessity of defending ownership therein. Man is, above all animals, acquisitive. His greed knows no bounds. From the moment men first acquired property they have been assiduously surrounding it with safeguards. In every age

they have banded together for this purpose. Out of the measures they have taught and enforced there has grown up in man the habit of respecting the property rights of others. In highly civilized countries this habit has become so fixed and idealized as to scarcely occasion effort or comment. We are honest perforce, but mainly because we respect the opinions of others. The habit disappears the moment man lapses into barbarism; no vestige of it then remains to disturb the equanimity of his mind when opportunity of unlawful possession arises. The law of might reasserts itself. But so long as men are imbued with civilized usages, a regard for the opinions of others, coupled with a fear of the punishment meted out to transgressors, restrains them. The command, "Thou shalt not steal," which has resounded for over three thousand years, idealizes a purely mechanical conception. Peoples who know nothing about the Mosaic law, whose religion is of the grossest, enforce respect for property rights quite as ardently as did the ancient Hebrew. Moreover, regulations of this nature, like the thing they concern, are progressive. Each year inculcates increased respect. The feeling of religiosity, however, wherever it intervenes, as in the case of the Mosaic law, spiritualizes questions of honesty. It has done so in our case. Christ taught men to respect the rights of all. Mohammed taught his followers to respect only the rights of their brethren; to pillage all others. His religion is that of the clan or tribe;

that of a primitive, barbarous age. Christ's is universal in its application. But the teachings of each in regard to honesty are carried out with equal zeal by their followers, albeit lapses are frequent and marked.

In every age robbery has been punished with ferocious severity. While murder in the primitive period was lightly regarded or might be atoned, theft was punished with death. The savage safeguards which have from the first been thrown around property have bred in men's minds a superstition in reference to it which we ascribe to purely ethical causes; to an inward monitor that never sleeps. The feeling is, however, artificial, and vanishes the moment extraneous pressure is withdrawn. Children have no instinctive knowledge of it as they have of hunger or thirst. It is, consequently, not a part of our nature. The subject is an interesting one. It associates ideas that are at once moral and physical, conscious and constrained. I am compelled to content myself with a bare statement of the fact (deduced from the above premises) that the respect men pay to the rights of others, while real and tangible, is the creation of man just as much as the property it is sought to guard is his creation. It is not spiritual, but mental and physical; the result of environment, of centuries of education and of an ever increasing regard for public opinion. Fear of punishment is only secondary.

In the primordial state, as already noticed, property is unknown. Man seeks only to gratify his

present appetite. It does not occur to him to lay by anything for the morrow. This latter only comes with enlightenment. Foresight presupposes intelligence, more or less fixed purposes. Many progressive steps must be climbed by man before this one is reached. Acquisition of property at first has no great purpose in view. It contemplates only the present. It is in this spirit man begins his acquisitions. But afterwards other things intervene. The primary object, however, remains, namely, provision for personal needs, and, what has now come to be the same thing with man, the needs of his family.

Our civilization represents a stage of man's progress, and, so far, is a problem which he has not been able to solve in an altogether satisfactory way. While man recognizes that he owes mainly the advance he has made to the influences which surround the ownership of property, he persistently refuses to adopt measures that will perpetuate his advantage; that will prevent the destruction of the civil structure he has reared, and with it the destruction of his material wealth.*

* The stages of man, so far as investigations up to this time have enabled archæological and sociological students to trace them, may be recapitulated as follows: *Savagery:* That state in which might reigns; where men do as they please. *The Communistic State:* In which men dwell together in a semi-savage state, where the few and simple possessions of the community are shared in common. *Autocratic Government:* Where the multitude is subjected to the arbitrary authority of a central ruler and those acting for or with him. In this stage ownership of the land, and oftentimes of personal property as well, is vested in the ruler. He also frequently arrogates to himself the marital

Nothing is more interesting and instructive than the history of property in its relation to man. To its accumulation and the measures he has taken to preserve it we must ascribe largely, if not wholly, his moral growth. Upon it is based the ethical code of which he boasts so much. Its influence makes men industrious, peaceable, saving and prudent. It enlarges their understanding by the thought they must give it. It is also responsible for many ignoble vices, among others, covetousness, envy and theft. These latter, however, men agree in recognizing as distorted virtues; qualities that, when properly governed, are of great advantage to mankind.

Wherever property is protected its growth is rapid. Circumstances of the greatest deprivation do not lessen man's interest in it. Where it is not protected it exists only so far as man is compelled to accumulate and to hoard. In the classical age men found means in favored countries to guard what they acquired, but only to be overcome finally by the more greedy of their own kind. Thus Greece and Rome fell. From their experience, and others even more pertinent that

rights of husbands or prospective husbands. This last is a prerogative of chieftainship in all ages and places. *Individual Enfranchisement:* Where great abundance and widespread ownership of property exists. This is succeeded by its concentration in the hands of a few, followed by the subjugation of the state from without and the overthrow of the social structure, the destruction of material wealth and the enslavement of the people.

might be recited, thoughtful men derive this lesson among others, namely, that man's ability to preserve unimpaired the civilization for which he struggles, and the property on which it is based, depends upon his ability to preserve the ownership of the soil among the masses of the people. Only thus can he make it of vital interest to them to perpetuate existing conditions and, if necessary, to fight and otherwise contribute to the common good. But this must be achieved without injustice; without destroying personal initiative or deadening the ambitious aims of individual men. Otherwise, decadence will follow in other directions. The process must be peaceable and equitable. Agrarianism will not do. Such measures only hasten the catastrophe, because they destroy man's pride and lessen his personal endeavor.

When men have attained the object pointed out, and it requires precautionary measures only, their civil liberty may be indefinitely prolonged and their intellectual and moral growth indefinitely heightened. In many highly civilized countries, notably the United States, the conditions are exceedingly favorable; ownership of property, above all land, is widely diffused; there is no proletariat; the domain is ample. All may acquire property. It only remains to perpetuate this state of affairs. It will not last, however, if precautionary measures are not early adopted. The subject concerns all; rich and poor; the former especially.

The overthrow of societies is due to the absence of solidarity; to lack of common interests; to the absence of incentive upon the part of the people to maintain.

Patriotism in the absence of ownership of property is a volatile, not a concrete, substance; one master is as good as another; a noble master is better than a common one.

An especial danger which threatens the United States is the influx of alien peoples that neither possess property nor knowledge of self government. The acquisition of land by such people in the face of ever growing competition will be more and more difficult as time progresses. Each year their tendencies will consequently become more and more anarchic. Without material interest in the country, they will be a disturbing element in time of peace and a source of weakness in time of war. With nothing to defend, they will be as unstable as the waves of the sea, as treacherous as its ever shifting sands. Our country should be closed to this class. No one should be admitted within its borders who does not bring a property guarantee of peaceable behavior and patriotic interest. Pauper immigration is a source of civil danger and an injury to the laboring class. The United States may assimilate the vast numbers of such people who have already sought shelter within its domain; it is even possible the limit has not been reached, but that it approaches it there can be no doubt.

CHAPTER II.

PRIMITIVE MAN—THE FIRST CARRIER—HOW FAR CARRIAGE WAS PERFECTED AMONG THE ARYANS DURING THE PALÆOLITHIC PERIOD.

In the early and primitive state of man woman performed all the drudgery of life, as she does today among the savage people of the world. She was the first carrier. It is only in highly civilized societies that man's regard for woman leads him to aid in bearing the burdens he formerly imposed wholly upon her. His savage nature inclines him to make her his servant, and as a savage he is an exacting taskmaster, requiring docile obedience and such exertion on her part as may be necessary to supply his wants. But while women are the burden-bearers of primitive ages, their methods of carriage differ. Whatever the method may be, however, it is followed as rigidly as the fashions M. Worth was in the habit of imposing upon society women. But local conditions have much more to do in determining methods of carriage among savages than they have had in shaping Paris fashions. Thus, in carrying children, they are borne high or low on the back, as best facilitates the mother's convenience. This is true also of other burdens. The receptacle in which the child is carried is also determined by local surroundings.

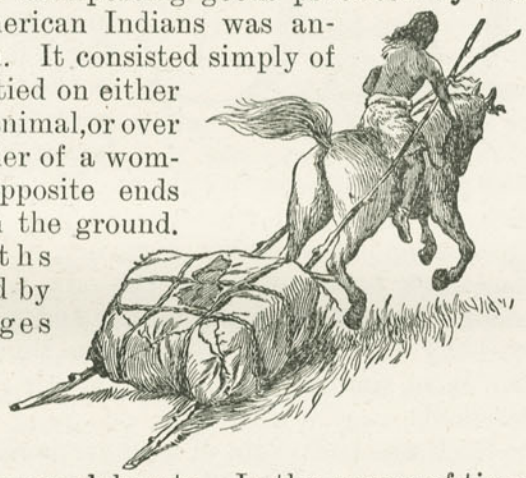
In one case it is the loop of a blanket; in another, a grass sack; in another a basket; in another, a receptacle of bark.

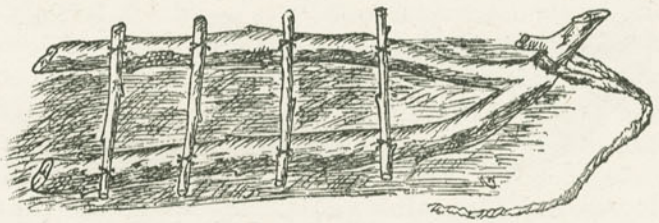
Transportation among the ancients was not noticeably different from primitive carriage among the semi-barbarians of the present time. The accompanying illustrations picture the progressive steps from the human beast of burden to the locomotive of the present day; not only the successive stages of evolution, it may be said, but the multitudinous devices of widely separated peoples.

The creation of roads, like most useful things, was not premeditated. Successive footsteps formed the first path. While these were accidental, they followed the most convenient route, adapting themselves naturally to the peculiarities of the ground, with a view, so far as practicable, to the saving of time and labor. They were, in the main, directed to the hunting and fishing grounds of the clan, or the rude huts of neighboring villages. These paths became in after ages the highways of civilized peoples. We still traverse them; they are the natural highways of the world.

The origin of ancient forms of carriage is lost in the darkness of the prehistoric age. We can only conjecture its occurrence. It was probably quite as accidental as that of the rude paths of the savages. When man threw the first burden off his own shoulder on to that of the cow, the

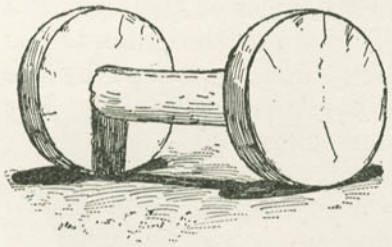
secret of carriage was evolved; the transfer was final. Countless ages, however, must have preceded this. Afterward rude vehicles were invented. One of the first devices of this kind was a roughly-hewn plank, drawn on the ground. The method of transporting goods practiced by the North American Indians was another form. It consisted simply of two poles tied on either side of an animal, or over the shoulder of a woman, the opposite ends trailing on the ground. The paths traversed by the savages of primitive times would not permit anything more elaborate. In the course of time two or more planks were combined, thus forming a rude sledge. Afterward the idea of rollers sug-





gested itself. These were the precursors of the wheel and the cart. This last, when introduced,

was formed wholly of wood, and was, as may be imagined, exceedingly rude. The axle and wheel consisted of one piece and revolved together. Naturally the cart was the precursor of the wagon. Its introduction was the first great step in the art of transportation. Its evolution has marked the progress of man in culture. The idea of making the axle and wheel apart was the second great step. No greater discovery, it is probable, has ever been made in the art of carriage. Afterward followed the felloe and spoke. The railway carriage of to-day was thus evolved; we have simply improved upon our forefathers' methods.



Such was the origin of land carriage. That by water was equally simple. Floating driftwood suggested the canoe rudely hollowed with fire, afterward with stone implements. A limb served to propel and guide. This latter, became, in time, an oar. The sail followed, but long afterwards. As late as the time of the Phœnicians the rudder had not yet been invented.

The development of carriage, it will thus be seen, was exceedingly slow. Each progressive step occupied vast cycles of time. Savages advance slowly; their brains as well as their morals must be developed; at first both are merely embryotic. The first step is always the difficult one; it suggests reflection, and this in turn precipitates other ideas. Each discovery renders succeeding ones easier.

The forms of primitive transportation still in use in various parts of the world indicate substantially the processes of olden times, but it is only in some parts of Africa and in Polynesia and other savage countries that the human being is still the only means of carriage. Elsewhere animals have been conquered and trained to perform such work.

Illustrations of primitive transportation evince a general similarity of growth in man. The differences in methods of carriage illustrate a characteristic of men no two of whom ever look, think or act exactly alike. This peculiarity of every assemblage of men has its counterpart in aggregate man. Thus the ideas and methods of particular tribes differ from other tribes. In all the forms of carriage, by water or land, the devices of no two peoples are exactly alike. Each conforms to some inherent peculiarity or environment of the people who invent it. And so, while we are able to trace the growth of vehicles among the early Aryans, it is probable that they partly borrowed, partly invented. No perfected

thing can be claimed as the sole thought of a particular individual. The suggestion, or some fragmentary part of it, came from some one beyond.

Where the wagon was first introduced we do not know. The Aryans, however, were familiar with the linch pin, yoke, pole, wheel, axle and nave. They were ignorant, however, of the spoke and felloe; these had not yet been created. The Aryans undoubtedly aided in fashioning the wagon, as the word is a part of their language and no reference to it is found elsewhere. This reference suggests the oft repeated enquiries: Who were these primitive people whom we strive in vain through the gathering mists of the past to locate? From whence came this sturdy race, whose descendants are at once the civilizers, the conquerors and the carriers of the world? No one as yet has been able to answer these questions. The birth place or original home of the Aryan remains still a mystery, forming an endless theme for scholars and disputants: they have placed it in Russia; in Central Europe; on the far off Ganges; amid the high altitudes of Central Asia; in the Mesopotamian valley; on the shores of the Baltic. The disputant of to-day overthrows the theorist of yesterday, and with the revolution of each year we commence our journey anew. The discussion is, however, not without advantages: it stimulates interest and investigation. Thus, through the delvings of archæologists and the deductions of anthropologists and ethnologists, coupled with

the discoveries of philologists, we have learned much we should otherwise have been left in ignorance of in regard to neolithic men, except for the interest of all in regard to our primitive forefathers. From the strivings of savants we have thus become familiar with the brachycephalous (broad-headed, yellow men), the dolichocephalous (dark, long-headed men) and the orthocephalous, or intermediate men of ancient times. Scholars have undertaken to explore for us the abysmal gulf which separates our ancestors from the early races. That the information they impart is oftentimes defective we must admit, but that it is stinted we may quite as confidently deny. However, we are grateful, and in no case critical.

The people of whom traces are first found are, it is agreed, ascribed to the palæolithic age. They lived in caves and were contemporaneous with the mammoth, the woolly rhinoceros and other pachyderms. England was still connected by land with the continent of Europe. Craniologists believe the people of that remote age were the progenitors of those who inhabit Europe today, because the dimensions of their skulls were substantially the same. Thus, during this long period man's natural capacity has not changed.

The implements of the Aryans, whom we claim as our progenitors, were those of the Neolithic period. The race is believed to have been brachycephalous: a tall, powerful, muscular, blonde people. In England it succeeded the dolichocephalous race, a short, feeble, servile, dark peo-

ple, called Iberians. These were thought to have been an Atlantic or Mediterranean race, the same as the Berbers and Egyptians of northern Africa. But while much has been accurately determined in regard to the Aryans, we have learned nothing definitely in regard to the location of their primitive home, and except for the circumstance of their separation into different tribes and their wide separation from each other afterwards, we should know nothing of the habits of mankind in the Neolithic age. But it was just at that period the Aryans separated, or at least ceased to speak a common language. What is still common to the races who once spoke the Aryan language before their separation from the parent stem indicates the customs of the people prior to that time. Thus we are accidentally afforded a glimpse of prehistoric man exceedingly interesting to every one.

It may not be that all those who spoke the Aryan language belonged to the same race, but that they occupied contiguous territory there can be no doubt. The language was the inception of a particular people, but may have been imposed upon various races or tribes having substantially the same anthropological peculiarities, but differing in social relations. When the Aryans separated, linguistic peculiarities, the result partly of environment and partly of evolution, made themselves felt in their new homes.

The Aryan language, it is probable, was more copious than any other of its time. Quite likely

it was superimposed upon surrounding savages who before possessed only rudimentary forms of speech. If so, it would have been accepted gratefully and without antagonism. It is also reasonable to suppose that a people who could thus dominate their neighbors must have possessed methods and culture, and bodily vigor, superior to those about them. While the Aryans are no longer generally believed to have migrated from the high lands of Central Asia, their language is thought to be of Mongolian origin; to have had its germ among the cultivated people of Asia. However, this is only a surmise. The dialects that once connected all who spoke the Aryan language have one by one been extinguished, and the thread which might have served to identify the true Aryan people has thus been lost.

The Aryans, like their descendants, possessed the most exalted attributes—courage, aggressiveness, executive talent—above all enormous ability to grow. It has been suggested that the intrusive yellow, Turanian race, originated the Aryan language only to be subsequently overthrown by the native population. This has been the experience of that race,—to plant the seeds of advanced culture, to succumb afterward to the dominant white race.

While the Aryans may have been made up of different races, the virility, courage and capacity for development they have displayed in common, evince certain homogeneous qualities of a high

order that have made them the conquering race of the world.

The earliest prehistoric man of whom we have any definite knowledge, as pointed out, belonged to the palæolithic age. His weapons were flakes of stone roughly chipped. This age preceded and attended the glacial epoch which geologists have claimed commenced two hundred and forty thousand years ago and lasted one hundred and sixty thousand years.*

The evidences of man's existence during and preceding the glacial epoch are unmistakable. The only progress man seems to have made from the palæolithic age to the neolithic epoch was to substitute polished for roughly chipped stone implements and weapons. We have no clew whatever to the ages that occurred before he learned the use or value of words, the utility of fire, the construction and use of the bow and arrow, clothing, the dugout and wagon. Nor are we able to compute the ages that led up to the art of plaiting and weaving, to the construction of axes and

*More or less diversity of opinion, however, exists as to the duration of the glacial period and the time when it occurred. The latter is of great importance as indicating the progress made by mankind since that event, as all the indications denote that man immediately subsequent to that period possessed only rudimentary acquirements. Many astronomers and geologists now set the close of the glacial period no farther back than ten thousand years. If this view is correct, it explains the slight changes in the physique of man and in the flora and fauna of the world since that period. It does not, however, in any way discredit the social evolution of man, but it proves it to have been more rapid than we would otherwise have supposed.

lances, the domestication of the cow, the dog, sheep and goat, the ceremony of marriage and the systematic burial of the dead. Each of these, however, was an invention greater than any of our time because it was the emanation of savages without method or reflective powers,—a genuine inspiration, and not the result of suggestion as in our age of evolution and culture.

Language like other inventions, was of slow growth. At first a sound oft repeated within the limits of the horde or clan (in connection with some particular phase of savage life) became familiar to all, and in this way acquired the force of a well understood signal.* Thus a word was formed without those who used it being conscious of the fact. It was like the lowing of an ox or the bleating of a sheep and had, similarly, a definite meaning. In time it became perfected and beautified by constant usage. Other words, one by one, sprang into existence similarly. Thus from a single savage gutteral our language sprang. It was thus, the Aryan language originated, but superior capacity upon their part made it more copious than that of surrounding peoples.

The evolution of man is always the same under natural conditions, but progresses rapidly or otherwise according to natural capacity and environment. Language could not have originated in any other way than that described. In saying, however, that it arose within a horde or clan, the meaning is not to be taken literally. It is possi-

*Monkeys and other animals have such signals.

ble that before such ethnic divisions among men certain rudimentary sounds may have acquired the force of words, just as is the case to-day with monkeys. At what period in their evolution men first began to form into groups or societies we have no means of telling. But that this occurred at a late period we may reasonably suppose. Prior to such time men and women mated and lived apart like wild animals, as they do to-day in the impenetrable forests of Borneo.

If mankind did not spring from a common father and mother, then we might the more readily understand how it came about that there should be different languages. But such an hypothesis is not necessary. The immense lapse of time and wide dispersion of mankind, during which primary objects were given definite names, would inevitably bring about the growth of different languages. But even in the case of a particular tribe speaking a common language, philological changes would commence the moment those who used it no longer lived under the same roof. Afterward, dialectic changes would be interspersed with words borrowed from neighboring peoples. Thus differentiation of languages would arise. But as its progress would be variable, we are thus unable to determine, even approximately, what length of time the differentiation of the Aryan language, since the dispersion of those who at one time used it in common, has required.

The dispersion of the Aryans is believed to have occurred during or immediately subsequent to the Neolithic age, as the objects peculiar to that period conform to those they possessed, as indicated by their language. However, the question is not yet determined. Each year adds something to our knowledge, but what the future has in store for us we can only surmise. We are grateful, however, for any fragment, no matter how trifling. The immortal race that has given the world its impetus and developed its highest civilization, government, commerce and trade, will ever claim the kindly interest of mankind.

When we catch our first glimpse of the Aryan people they are pure savages—a virile, meat-eating horde of barbarians. The skins of animals served for clothing. Their hair was long and unkempt. They did not shave. They were not cleanly. The sweat that exuded from their bodies kept their skin wholesome if not sweet. They knew no other bath. Their instincts and habits were little above those of common animals. They were slow to learn the art of cooking or the uses of the spit. They did not know how to boil meat. They esteemed the marrow of bones the greatest of dainties. They were pastoral in habit. They lived on the milk and flesh of their herds, game, fruits, nuts and succulent roots. They computed time by the revolutions of the moon. The months had not yet been given names, nor had the day been divided into hours. They had a name for the night, but none for the

day. Superstitious, like all savages, they offered up human sacrifices, although domestic animals were esteemed acceptable. They were hunters but killed, not as we for pleasure, but to protect their lives and herds. Hunting became a pastime only when game became scarce.

In the beginning man was dominated by wild animals. While he viewed the great beasts of prey with apprehension, their prowess caused him to look upon them as superior beings.* He was especially impressed with things that occurred out of the regular order, such as the fall of a meteoric stone, a shooting star, an eclipse, and kindred phenomena. To all such things he attached a fictitious importance. In each he believed himself to have a personal interest.

Many ages elapsed before man possessed a weapon with which to combat the beasts that surrounded him. A club was the first that suggested itself. This was the weapon of the savage Hercules.

Originally man was not more cultured than the chimpanzee. He, however, possessed latent powers apparently denied the latter. Out of his necessities grew the bow and arrow, hammer, axe, sling, knife. All these things were known to the Aryans. They, little by little, acquired constructive habits. While they used the fur of wild animals for clothing and bedding, they do

* The fact that primeval man did not claim superiority over the animals is evinced in the fact that in many countries they were worshiped by him.

not seem to have relished their flesh. They did not use fish. Cereals were unknown; these followed later in the train of agriculture and the refined tastes it engendered. Where, however, cereals were indigenous, as millet and wheat in Mesopotamia, they were used.

The implements of the Aryans were made of wood, stone, flint and bone; their arrows were tipped with the latter. They used stone scrapers for removing the hair from hides. Metals were still unknown; men were slow to discover and utilize them. The milk of both the cow and goat was relished. They did not know how to utilize the horse, pig, or fowl, if, indeed, they had any knowledge of them. The art of making butter was unknown, though a species of curd was used which resembled cheese. The fatty substances of milk were used to smear the hair and anoint the body. Whether the use of salt was known is doubtful; no reference regarding it is found. The Aryans craved stimulants and were much given to drunkenness. They fermented liquors from roots, plants, wild fruits and honey. They knew nothing of beer or wine. Man, it is apparent, has been a drunkard from the start. As a savage he was a hardy, arbitrary, suspicious, tyrannical, drunken brute. Countless ages have served to modify these traits, but not to wholly eradicate them.

The use of clothing was originally, like everything else, a discovery. It was at first scant and made of the untanned skins of animals. The

garment was thrown over the shoulders like a mantle. It was not sewed nor stitched, but fastened with a thorn. The use of the needle and thread was a later discovery. The first needle was made of bone. Hides continued to be used for clothing down to a very late period. When abandoned by the higher classes, they were still worn by shepherds and slaves. Man early learned the art of tanning. The Aryans knew how to make a species of felt by kneading wool together and pressing it. They had also learned the use and value of flax; it was spun and woven by them. The first manufactured garments were plaited. Garments were made to conform to the shape of the hides previously worn, just as the utensils of the bronze age took the shape of those of the palæolithic and neolithic ages. It is thought weaving was first suggested by braiding; and spinning by weaving. Men and women wore similar garments. In wrapping them about their bodies the fore and upper arm were left bare. This exposure, in the case of women, conduced greatly to matrimonial reflections, just as the practice among the Spartans of exposing their maidens naked on festal days inflamed the ardor of the young Lacedæmonians. Tattooing of the body was common with the Aryans. The loin cloth was unknown to them. That was an after-thought and indicative of growing effeminacy. It is believed to have suggested the use of trousers. Primitive man covered his feet and head, when he covered them at all, with

untanned skins rendered pliable by manipulation. His ornaments consisted of the bones of enemies, copper trinkets, shells, feathers and similar devices.

Man has been vain and, to a certain extent, frivolous, from the first. He wore ornaments before he did clothes! The dress of civilized peoples ever represents their stage of culture. Save the primary purpose of warmth, elaboration of dress denotes progress in taste. While the first object was protection, enormous importance has always attached to ornamentation. Men do not take kindly to civilized dress. The savages that were overcome by the Romans are said to have thrown off the gorgeous habiliments given them when no longer in the presence of their conquerors.

The cultivation of dress finds its counterpart in many other things which civilized peoples consider fundamental. Thus, they attach great importance to family names. This is wholly a cultivated feeling. Semi-civilized peoples change their names oftentimes more frequently than their clothes. Thus, semi-civilized negroes have been known to have as many different names as there are days in the month. When men become civilized, they restrict themselves to one, and this they endeavor to transmit. The great diversity of names that exists is the result of the changes and fancies of semi-barbarians.

The Aryans understood the art of pottery and the use of the potter's wheel. Like all other primitive people, they were originally troglo-

dytes—cave dwellers. Where natural caves were not to be found they dug holes in the ground for dwellings, ascending and descending by ladder; similar shelter was provided for their animals, a shaft or incline being used for ingress and egress. Afterward they lived in rude huts on the ground, made of wood and loam, but more often of grasses, twigs, rushes and willows. The houses were round or tent shaped and had doors. Windows and chimneys are comparatively modern inventions. The fire was kindled in the center of the room, the smoke finding an outlet through a hole in the roof or open door. The dwelling was occupied by the family and domestic animals in common. The Aryans, like many nomadic people, oftentimes used their wagons for houses. Thus they were able to move from place to place as interest or inclination prompted. This facility is believed to have greatly prolonged their nomadic or semi-barbarous state.

The Aryans differed from those about them, just as we do from those about us. Courageous and warlike, they were also property lovers, at once industrious, thrifty and capable. They knew how to construct and to utilize. Their inventions were few and simple, those of children, but contained the germ of permanently useful things. To them, we may believe, early occurred the idea of transferring the packs they carried to the backs of the brute creation. This was a relief, but inadequate. The back of the cow was neither broad enough nor strong enough, and this was

the only animal available; the horse had not yet been domesticated. The outcome of their necessities was the cart.

The only civil institution the Aryans possessed was that of marriage; they acquired their wives by capture or purchase. Punishment for murder was meted out by the nearest blood relation or the village, but theft was esteemed more serious than murder, as it is among all savage or semi-barbarous peoples. It was punished by death or banishment.

Before the Aryans separated the family had been created. It resembled a clan. It was made up of the master, his wives, children and descendants and collateral relatives and slaves. It formed a community banded together to aid, protect and avenge each other. How far various organizations were able to unite for common ends is not known. It is probable, however, that their relations were slight. This is indicated by their wide separation afterward. It was as families or clans, rather than tribes, that they are thought to have parted. Thus the Aryan clans that made up the Greek nation never had anything in common except their religion and language.

The family relations of the Aryans were those of savages—but had passed the period of promiscuity; they were more or less polygamous. Private property was recognized in portable things; land, however, was held in common. Slavery existed. Wives were the servants of the master. It was woman's value in this direction partly,

and partly man's desire to own exclusively, that suggested marriage to him, as already pointed out. Promiscuity being a normal condition, man in his primordial state did not seek woman to satisfy merely animal desires, but as property, just as the groceryman seeks a horse to distribute his goods, or the breeder buys a mare to increase his herd. Among the Aryans she was not called wife, but the breeder of children. The husband's title was that of housemaster—a person to be obeyed. More or less ceremony attended marriage. The wife abandoned her family when she came to him. The number of wives a man might have was limited only by his ability to support and defend. Whenever he needed another servant to look after his affairs, or his riches permitted, he married another wife. His wives and children constituted his wealth as much as his flocks. If a wife was unable to bear children, he was at liberty to put her away. If the fault was his, he could choose some one to act for him. This act of substitution was not considered disgraceful; it was analogous to a farmer in our time borrowing seed-corn of a neighbor. Woman was simply a servant and breeder of men. Wives held promiscuous intercourse with their husband's relatives, but outside of this adultery was punishable with death; not because it was thought to be wrong, but because it was an infringement of the husband's property rights.

The primitive relations of man and wife continued among the descendants of the Aryans into

historic times; they still prevail in all savage countries. The father had the right to expose his child or put it to death. This privilege was rarely exercised in the case of sons, but frequently in the case of daughters. The latter were looked upon as incumbrances as they are to-day in China, where it is a common practice to expose them by the wayside to die. Moreover, the destruction of girls rendered those who remained more valuable; husbands were thus compelled to pay higher prices; fathers got more. Women do not seem to have viewed their barter with abhorrence. The greater the price the woman brought, the greater the honor; to be given away was the greatest social degradation that could befall her.

In primitive societies the husband possesses power of life and death over his wife and the custom of putting her to death with other attendants when the husband dies is not, as suggested elsewhere, so much a superstition, as a device to assure his safety while on earth.

While promiscuity was not universal among the Aryans, it was still sufficient to preclude identification of parents except on the mother's side. Men therefore continued to trace their relationship through the latter. Children, however, regarded their parents with little affection. Their love was cold, as with animals, and when the parents grew old they were looked upon as something to be got out of the way, so that their property might be enjoyed and the expense of maintenance avoided. They were called "the

old ones," and the custom of killing them was practiced more or less down to historic times.

In the first instance man divided the year into two periods, summer and winter—the seasons of warmth and cold. More minute divisions of time were regulated by the moon. The moon was esteemed more highly than the sun because it lit up the night—the night which man dreaded, which brought so many dangers, real and imaginary. This was one reason why he esteemed fire so greatly. It kept off the wild beasts, drove away the evil spirits, and exposed the machinations of robbers. Men spoke of nights rather than days. The Greek day commenced at sunset; the Roman at midnight.*

In primeval times men respected only the lives and interests of those who belonged to their own tribe; all others were enemies, to be robbed, enslaved or killed, as opportunity offered. An exception, however, was made in the case of beggars and suppliants. These were thought to be protected by the gods and were, consequently, highly esteemed.

Christianity first taught men universal charity, tolerance and brotherly love.

When men had progressed in the art of government and their wants had become more general, neighboring tribes mitigated somewhat their savage relations. The truce was not, however,

*The custom of the Romans in this respect, also in respect to their division of the year, was gradually adopted by the civilized world.

based on the idea that robbery and murder were wrong, or that peace was, in itself, desirable. But continual warfare was inconvenient and its results doubtful. Moreover, it rendered exchanges, bartering, impossible, and man has always had the disposition of a trader. It grew out of his desire to better himself. At first his ventures in this direction were confined to his own clan or tribe. Outside of this they were very restricted and conducted with much difficulty. Afterward to facilitate trade between alien tribes influential men belonging to different communities, and therefore enemies, were sometimes permitted to visit at each other's hearths and exchange their wares. Visitors under such circumstances were held sacred, and acquaintances thus formed were termed "guest friendships." Friendship, however, had primarily nothing to do with it, although friendships grew out of the custom. It was purely a matter of give and take, as cold and calculating as the visit of a commercial agent of our own time. The conditions which attached to such visits were that they should be attended with an exchange of wares mutually desired, such as swords, shields, battle axes, bows, arrows, caldrons, tripods, etc. In this way intercourse between men of different tribes was first brought about. Its introduction is attributed to the Phœnicians, but it was probably of earlier origin.

In later times trade was further facilitated by what is termed "dumb barter." Thus, we will say, one party would spread out their wares on

the sea shore or river bank, and retire, building a great fire to attract the attention of the natives. The latter would then come forward and, after examining the goods, spread out what they were willing to give in exchange. They would then fall back. If, on returning, the first party were satisfied, they took what was offered and went their way. If not satisfied, they retired to give the other party further opportunity to increase their offer. Good faith was always observed. Credit, ability to trade, then as now, rested on this. Thus commerce originated. The next step was the institution of the fair—an assemblage where hostile peoples met under a truce at some place previously agreed upon to exhibit their wares and make exchanges. The fair lasted usually several days. Thus the first market was established. Its trade corresponded to our imports and exports. Henceforward man's progress was more easy.

Money was unknown to primeval man. Trade was carried on by barter—give and take. The seller in every transaction was also a buyer. To a people of the pastoral habits of the Aryans, the cow became naturally the unit of value. With the lapse of time and change of habitation and mode of life, it gave place to other standards.* The utilization of metals for purposes of exchange is comparatively recent. Gold has existed from

*The Chewsures in Russia know nothing of money; their unit of valuation is the cow. They value a horse at three cows, a stallion at six, and so on.

prehistoric times, but was not known to the Aryans. Silver is of later origin, but still prehistoric. It was at one time more highly esteemed than gold, owing to the limited facilities of the ancients for procuring it, just as iron, in its turn, was more highly prized than silver for a similar reason. Iron dates from the earliest historic period. The manufacture of steel (tempered iron) was early acquired. Bronze (the product of copper and tin) is supposed to have antedated iron. It is believed that the Chaldeans first diffused the knowledge of working metals. Certainly the art seems to have been familiar to them long before we discover any trace of it in connection with the people who lived to the westward.

When metals came to be used as a basis of exchange, they were weighed in bulk, as iron and sugar are to-day. Afterward, specific quantities were manufactured into ingots and stamped with their weight. This stamp, naturally enough, took the shape of some domestic animal with which the people were familiar, such as the ox, bull, sheep, and so on; thus, a bar of copper stamped with the image of a cow possessed a value equal to that of the cow. Later the stamp of the reigning monarch was made to indicate the value of the token. The utilization of gold and silver as a circulating medium followed copper. The latter metal seems to have been known from a very early date. The Aryans were familiar with it, but apparently regarded it lightly. The early

Greeks possessed the art of hardening copper so as to use it for swords, spears, axes, etc.

The communal system I have described elsewhere as attending the evolution of savages, existed among the Aryans before their dispersion, in regard to their ownership of the grazing lands used in common. Otherwise than this, land had no value. The Aryans were peculiarly ingenious for a primitive people. They had a decimal system running up to a hundred, counted upon their fingers, and a foot, span, arm, and pace were their means of measuring. These divisions remain with us to-day.

Simple and primitive as were their customs, they found it necessary to transport articles back and forth to meet the wants of the community. They accordingly had fixed places for crossing rivers and mountains. The latter were, however, a much greater impediment to them than the former. A chain of mountains oftentimes, in primitive days, stayed the progress of a race for generations.

The necessities of traffic among the Aryan people required means of transportation. This want crystallized, as we have seen, in a wagon or cart drawn by cattle. The horse was still untamed, and the mule, now so familiar to us, first made its appearance ages afterward on the southern shores of the Black Sea.

CHAPTER III.

CARRIAGE AMONG THE CHALDEANS, THE MOST PRIMITIVE OF PEOPLES. THEIR STRANGE BELIEFS AND CUSTOMS.

The religion of primeval man was based on natural phenomena, which he ascribed to supernatural causes. The religion of the Aryans consisted in the worship of natural objects, the oak, the brook, the mountain, and so on. They believed themselves to have sprung from the earth, the trees, and the rocks. This was afterward the belief of the Greeks.

In studying the beginnings of religion, that of the Shumiro-Accades, who in many respects corresponded to the Aryans, is interesting. The magic of the soothsayer was necessary to allay the fantastic superstitions their fears conjured up. Peculiarly religious, they saw going on about them a never ending contest between good and bad—phenomena they were totally unable to comprehend. The rain that benefited them they observed flooded their fields; the sun that gave warmth withered with its heat; the wind that tempered the sun's rays uprooted the crops; light and darkness, summer and winter were antagonistic spirits. Each and every one of these they endowed with life. They believed a singular in-

telligence animated all creation. The earthquake, the sun's eclipse, the sighing of the winds, the movement of flying leaves, the flood, the tempest, every incident of life, was fraught with joy or ill omen to them. The clouds that floated across the azure vault of heaven were to them simply animals feeding on its broad expanse or hurrying forward before the coming storm; the trees they believed to be sentient, like themselves; the thunder was the voice of an unknown deity; lightning, a premeditated stroke; the wild animals that preyed upon their flocks, insanity, leprosy, blindness, sickness, death, were each to be traced to malign influences which, to be warded off, must be propitiated. These interesting and primitive people believed themselves to be surrounded by goblins, demons, phantoms, apparitions, ghosts, sorcerers and witches. They attributed fevers, pestilence, earthquakes, floods, barren women, deformed children, family dissensions, to bad spirits. To allay these and other hosts of evil they employed conjurers, enchanters, magicians and soothsayers.

They believed every object to be endowed with intelligence, sense of feeling, the faculty of sight, hearing, good and bad passions. It is probable all savages have, in a general way, like beliefs.

The art of medicine was not known to the Chaldeans. The sick and distressed sought relief in the manipulations of conjurers and the manuals of priests. Talismans were common. In the

course of long ages the people of Shumir and Accad came to believe there were beneficent as well as bad spirits. Among the influences that were good they reckoned the sun, moon, planets, heaven, the atmosphere, fire and running water. These extended protection to them—through the intercessions of priests. These latter evolved carefully prepared formulas, intercessions and other devices for allaying the wrath of bad spirits. Thus rituals originated, the precursors of the rituals of to-day, just as the Chaldean conjurer, enchanter, magician and soothsayer, were the natural precursors of our priests.

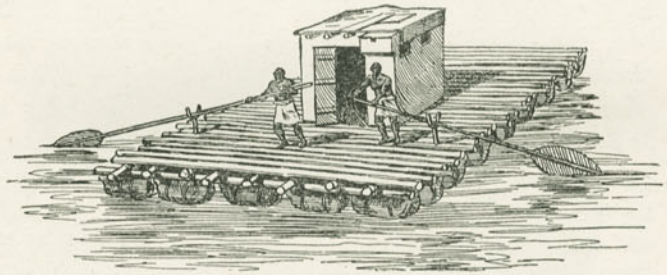
Religion is at once a live and a vital force, and its evolution represents the growth of man's culture, of his understanding, of his desires and their fulfillment. Its continued existence and evolution indicate that it is not based on imaginative fears or beautiful dreams merely. It may be that it has not yet reached its highest development. Certainly the centuries continue to add to its beauty and beneficence.

The Chaldean peopled the unknown with imaginary monsters. The malign spirits that surrounded him he believed to be infinite in number and malevolence. The good spirits were few and inattentive. He believed in a future state and so buried with his ancestors their ornaments, food, weapons and clothing. All primitive people do the same. It is a part of their religious belief. The Chaldean, however, differed from others who in their primordial state worship their ancestors.

He stood in the liveliest apprehension of his forefathers. He believed that, as ghosts, they boded him no good, and were wholly malignant in their purpose and energy. He was, therefore, at great pains to bury them securely so as to forever bar their return to earth.

The multiplicity of superstitions and myths that have grown up about man in the progress of ages he has always been at great pains to arrange and classify. This work in primitive times fell to the lot of the magicians, enchanters, conjurers and soothsayers; afterward to the priests. These intermediary agents have severally in their time and place been thought to commune directly with the good spirits and to have power over those that were evil. In olden times they were supposed to be able to cure diseases, avert magic, ward off sorcery, stanch wounds and perform other beneficent offices of life. They were the first rulers of mankind governing through superstitions and fears. Afterward they associated civic functions with their ecclesiastical duties, thus becoming priest-kings. These progressive steps occupied vast cycles of time that no one can now estimate. Their culmination, however, is to be found in the religions of our day. We partake of the communion; it is the highest form of adoration of which we have knowledge. Primeval man performed a like office by getting drunk. Our offering is idealized; his was literal. He worshiped matter, believing it to be intelligent. We have discovered that it is governed by a higher power; this power we worship.

The Chaldeans were an exceedingly interesting people aside from their peculiar religious ideas. They inhabited the country about the mouth of the Tigris and Euphrates at the head of the Persian Gulf. They were supposed to belong, in the first instance, to the Yellow or Turanian race. They used the land but little for transportation purposes, and the water much. Men and women were the principal carriers as they are among all



primitive people. The country of Chaldea, when irrigated, yielded three and four abundant crops a year. In order to facilitate this, irrigating canals traversed it in every direction. These with the great rivers which flowed through the Mesopotamian valley afforded the principal means of carriage. The boats used, while having some little diversity, were still exceedingly primitive. They, however, answered the simple needs of the inhabitants.

In the time of Herodotus he tells us that rafts buoyed upon inflated skins were a favorite form

of carriage in Chaldea. They are still in use there to-day. This simple device seems to have been one of the first that suggested itself to man for water transportation. It consisted of a raft made of cane or willow, buoyed upon inflated skins. These skins were filled with air by the lungs, just as we see children inflate toy balloons

in our day. The buoys were fastened to the rafts with strips of skin or osier twigs. These frail structures served for crossing streams, and upon them the great blocks of stone used in the palaces of Nineveh and other Assyrian cities to the north of Chaldea were floated down from the Zagros mountains. When one of these trans-

ports reached its destination it was taken apart, the wood sold, the skins cleaned and oiled, and sent back to be used again.

The boats employed on the Euphrates, Herodotus tells us, were round, like a wash basin; two or more men, according to the size of the vessel, accompanied it and directed its course. They used for this purpose long poles, with paddles made of bamboo strips attached to one end, very much like our oar, only not so convenient or strong. Each vessel, according to its size, transported one or more donkeys to reconvey the skins covering the bottom of the boat back to the starting point, for here, as in Assyria, the vessel was broken up and sold for firewood when it reached its destination. The voyages of these craft frequently extended from the mountains of Armenia to the Persian Gulf, many hundreds of miles. These vessels represent the second stage of constructive talent in boat building among the Chaldeans. Frail, rude, and difficult to manage, they were, nevertheless, a great improvement over preceding methods. It is probable that the vessels were owned by those who managed them. These latter were to all intents and purposes common carriers, the precursors of the Lloyds, Vanderbilts and Cunards of our day.

CHAPTER IV.

PRIMITIVE CARRIAGE IN SEMI-BARBAROUS GREECE—THE FIRST COMMON CARRIER.

In the Odyssey reference is made to Philætus, the herdsman, who brought heifers and goats to the feast of the suitors by ferrymen, who transported in common all who sought passage between the rocky coast of Ithaca and the fertile Isle of Cephallinia. This was twelve hundred years before Christ. It is the first reference, so far as I remember, to Common Carriers. The furtive glimpse we get of these hardy mariners, who at the very dawn of history braved the Ionian Sea in quest of gain, makes us desire to know more about their business, its extent, methods, risks, hardships, profits and patrons.

How was their business controlled? Did crafty Ulysses, or, when he was away, the chaste and prudent Penelope, look after the details? Were supervisors appointed to see that these carriers did not charge too much; that they did not discriminate? Or, were they left untrammeled? These details, however interesting, we shall never know, as Homer's reference is casual, the glimpse meager in the extreme.

The Ionian boatmen are specks on an immeasurable horizon which we in vain try to

pierce with our tired eyes. They formed a link, however, in the vast chain of men who connect the carriers of to-day with their progenitors among the savage people of the prehistoric period.

Of all the agencies progressive nations of the world have utilized in the art of carriage, the horse has occupied the most important place. The Aryans were unacquainted with him, and from this it is gathered that they could not have come from the highlands of Central Asia, for it was in that country, the land of the rising sun, of mystery and romance, that the horse was first domesticated. Evidences of his presence in Europe, however, are found during the palæolithic age, where he was used for food. He appears not to have been at that time larger than a Shetland pony. He had, however, enormous teeth and jaws. His development is the result of breeding. He was used by the Greeks for drawing their war chariots, and was thus employed at the siege of Troy. But they had not yet learned to mount him. The fable of the Centaur—half horse, half man—is said to have grown out of a belief upon the

part of those who saw a man on horseback for the first time that the horse and rider were one. The Egyptians, although rich, luxurious and worldly wise, had no knowledge of the horse in early times. The builders of the pyramids, who above all sovereigns exercised arbitrary sway over men, did not even possess so simple a luxury as a palanquin. It is probable that the conquest of Mexico by Cortez would not have been effected except for the superstition the natives attached to the horses of the conqueror. The animal was unknown to them.

The horse has ever been a favorite Carrier. The Grecians loved horses as we do and bred them with the utmost care. Upon the fleetness, intelligence and strength of these animals their lives oftentimes depended. Chariot racing was a favorite amusement with the Greeks. Two, three or four horses were hitched loosely abreast. Victory depended upon their swiftness and the skill and courage of the driver. To be victorious at Olympia was the greatest honor a Greek

could attain. The races occurred on every fourth year, called the Olympiad.* King and noble, priest and layman, alike competed. After the decadence of Greece the races were perpetuated by the Romans. The strife these contests gave rise to greatly stimulated the improvement of horses. This improvement is still going on.

Horses of superior breed were revered by the ancients. Those of Achilles were said to have sprung from the gods. History abounds with the quaint superstitions of primitive people regarding this animal. Bellerophon, king of Lycia, sought to mount to the skies on his steed, Pegasus. The nomad still looks upon his horse as his best friend; Asiatics make him their companion. Among highly capable races, the semitic people seem to care least for the horse.

The idea of using the horse was an important incident in the evolution of man. Running wild over the vast steppes of Central Asia, he was caught and tamed. Thenceforward he was utilized both for peaceful and warlike purposes. Chivalrous Greece attached an exaggerated value to him, but the roughness of the country prevented his being generally used. At the battle of Marathon (B. C. 490) the Greeks were without cavalry. In the retreat of the ten thousand (B. C. 400) Xenophon had no cavalry, except

* The Greeks measured time from the first Olympiad, seven hundred and seventy-six years before our era, just as we compute it from the birth of Christ.

such as he was able to organize from the pack horses and the animals captured from the Persians. In the battle for supremacy between Sparta and Thebes, at Leuctra, the former had one thousand horse, while Epaminondas had a less number. In the final struggle at Matinea the Thebans had three thousand horse, the Spartans two thousand. Elis and Thessaly, with their verdant valleys and grassy slopes, were the favorite breeding places for horses in Greece. However, all the horses raised by the Grecians did not equal those bred by the single Persian, Tritæchmes, governor of Babylon. This nobleman is said to have owned eight hundred stallions and sixteen thousand mares, besides the annual war contingent he furnished the king, Cyrus the Great.

The Arab, of all men, possesses the greatest affection for his horse. The Scythians, a savage, untamable race, used the milk of their mares for food. The Parthians, the most formidable horsemen of whom we have any account, did likewise. Before these fierce warriors the legions of Rome, hitherto invincible, succumbed. The Thessalian horsemen were the most famous of Greece and, siding with Xerxes, afforded him effective aid in his invasion. The phalanx of Philip of Macedon, supplemented by the Thessalian horse, made him invincible.

The stealing of horses and cattle in primitive ages was a favorite means of robbery, as it is now in all new countries. It was punished with death,

as it has been until recently on the frontiers of North America.

From being at first merely a source of delight or an instrument of war, the horse became more and more, with the lapse of time, a vulgar carrier of packs—a drawer of water. Of all nature's gifts to man, none perhaps exceeds him in value. His strength represents the unit of our service; he is the real progenitor of the steam locomotive, but with its advent his value has not been sensibly lessened.

From a study of the Aryans we are carried, step by step, down to those among their descendants who first achieved greatness — the people among whom we discover the first Common Carrier. The petty kingdoms of Greece were evolved, it is probable, from different clans, generally similar to each other, but never sufficiently close to prevent intense jealousies and hatreds. The first glimpse we have of them is at the siege of Troy, where contingents from every part of Greece were assembled. At that time the Greeks were hardly more civilized than the savage Indians of North America. Indeed, no primitive people so greatly resemble the Greeks of Homer as the North American Indians. They lived on meat and were much given to fighting and drunkenness. The funeral rites of their great chiefs were holocausts of blood. At such times hecatombs of slaves and prisoners were slain to appease their manes. Animals were used for sacrificial purposes. At the time

of the Trojan war the kings of Greece lived apart in impregnable fortresses. The walls of some of these were of enormous thickness; those of Tiryns and Mycene were forty feet thick, and proportionately high. These fortresses indicated the necessity there was for heroic defense. The floors of the living rooms in those citadels were of concrete, roughly patterned in squares and painted. The walls were coated with plaster and decorated with delsartian animals and figures; a rude panel following the ceiling in some cases. The fireplace, as in the case of all primitive dwellings, was in the center of the room.

Cleanliness was not a virtue with the Greeks more than with other semi-barbarians. The filth and stench of their dwellings would be intolerable to a civilized person. The security of their fortresses required that they should be drained, but there was no thought of sanitation or ventilation. Great numbers of people ate, lived and slept in the same room, and the animals they required for food were killed and dressed in the apartment where they were consumed, or at the door without. The entrails were devoured by dogs, or lay festering in the air. The palace of Priam did not equal in comforts the hut of the poorest Russian peasant, it is probable.

In the tombs of the Grecian kings of that age Doctor Schliemann found vases, bowls and jugs made of clay, painted and varnished, and idols

formed of terra-cotta, but so rude as to be hardly recognizable. Slabs, rudely decorated with hunting scenes, marked the graves. With the bodies were found the ornaments that adorned them when alive—diadems, pendants, crosses, earrings, bracelets and rings of hammered gold in *repousse* work; also gold hairpins, glass and amber beads, gold, silver and copper cups and images, spear heads, swords and knives of bronze and stone and obsidian arrow heads. The people of that age were idolators. However, they believed, like their ancestors, in a future state. The period was known as the Mycenean age, B. C. 1200. Its civilization was destroyed a hundred years afterward by the Dorian invasion, but so great was the genius and versatility of the Greek people that in the time of Pericles, four hundred and fifty years before the Christian era, the descendants of the semi-savages of Mycene had become a highly cultivated people, the equals of the greatest teachers, statesmen, orators, sculptors, architects, poets and warriors the world has ever known.

The first glimpse we have of the Grecians they are clothed in the skins of animals. Their weapon is a club. A sharp stick, hardened in the fire, serves as a spear. They live upon the semi-raw flesh of animals. In Arcadia the acorn served for food. Robbery was common. The peculiar situation of Greece, projecting like an arm into the sea, made her people pirates, and for many centuries kept them so. Thus they grew up

adventurous and independent. They were vain to the last degree, like all talented people.

In their early history the Greeks gave but little thought to the arts of Carriers. The highways were poor and infested with robbers. They were a contentious, pugnacious race, at constant variance with each other. They loved war, but with the prudence of those who value property, abstained from burning each other's cities. Herein they differed from all other peoples. When, however, at war with other nations (whom they classed indiscriminately as barbarians), they destroyed what they could not carry off, murdering or enslaving the inhabitants without mercy.

The Greeks were at once crafty and unscrupulous; refined and brutal, artistic and sensual, but wise beyond all other men. Prize fighting was one of their favorite amusements. At such times the hands and lower arms of the combatants were encased in leathern thongs loaded with lead. Prizes were awarded the victor as they are to-day. In the encounter between Hercules and Eryax the prize was the kingdom of Sicily. Ulysses fought Irus for the right to solicit alms. In the contest between Epeus and Euryalus, at the funeral of Patroclus, the prize was a mule and a bowl. In that between Entellus and Dares at Drapanum, it was a bullock. Dares is described as being carried off the field gulping up blood and teeth. These encounters were oftentimes fatal, but were conducted by the Greeks with

less brutality than was the custom with surrounding nations.

Greece was at the time of which I write interlaced with vast forests and impassable morasses. The Greeks cared little for travel. They associated the power and mysteries of the gods with the mountain heights—hence the Olympian Court, Idean Jove. Unfamiliar with the geography of the earth and ignorant of its laws, they filled its unknown places with creatures of their fancy. When perplexed, they visited the shrines of the gods for advice, poring over the Delphic utterances they received with incredible patience and childlike faith. Ambitious, fierce, warlike, they treasured their personal liberty above everything else. Like the Aryans, they were extremely superstitious. To them the wind and the rain, the sky and the cloud, the wood and the river, were living things. They heard the voice of Jove in the thunder; saw his arm in the lightning. They peopled the water with deities, nereids, sea nymphs; the islands with cyclopean monsters, cannibals, satyrs, furies, sirens, enchantresses, harpies; the gloomy forests with gods and satyrs; the borders of the earth with creatures half human, half animal. The winds and the storms they thought were stored in vast caves ready to be let loose by the attendant deity.

The Greek religion is thought to have been derived from the Egyptians and Chaldeans. It was simple and unquestioning—that of children without a past who knew nothing of natural

laws. They believed everything depended upon the personal interest and inclinations of the gods, who aided those they loved and thwarted those they disliked. They pictured the gods as coming and going at pleasure, sometimes making their presence known, but more often not. To the visitations and amours of these gods were thought to be due the half divine heroes of Greece—children of favored women out of wedlock. They attributed to the gods the same passions as men, only of heroic character.

The ships of the primitive Greeks were small, ill constructed and cumbersome, little better than open boats. When ashore they were drawn up on the land, as the Indian does his canoe. At such times the masts and other paraphernalia were removed. Virgil speaks of the vessels of Æneas as having anchors, but in this he is thought to have erred, the anchor having been invented later. Vessels were without cabins; commander, sailor and guest alike slept upon a bench. The compass was unknown. At night the moon and stars served as guides. Adverse winds and storms were ascribed to an offended deity; but favorable winds

and clear skies were construed as the friendly countenance of kindly spirits.

The early Greeks were migratory. When overcrowded or molested they moved away, forming new settlements. Right of selection was recognized as belonging to the strongest and there was no security, except such as was maintained by force. The men were hunters and shepherds, but above all, warriors. Their knowledge of agriculture was exceedingly limited. They depended wholly upon the chase and their flocks. Bold, adventurous and self reliant, they stubbornly preserved their tribal relations to the end, and it was through the divisions and jealousies these conditions engendered that their enemies were enabled finally to overcome them. Such were the Greeks. They gave much and borrowed little. Creative and imaginative, their intelligence subjugated the world and still influences its destinies. It was amid such conditions that the hardy Ionian sailor, the First Common Carrier, was evolved.

CHAPTER V.

PRIMITIVE CARRIAGE AMONG THE EGYPTIANS AND OTHER ANCIENT PEOPLES.

That the evolution of primitive carriage in the first instance occupied vast cycles of time there can be no doubt. Savages and semi-barbarians do not reason by analogy and deduction as we do. They lack suggestion, method and inclination. Their thoughts and devices are those of very young children. Because of this their development is slow and halting.

At the dawn of history many successive steps had been traversed. The cart had been invented and was used both for purposes of peace and war. Among nomadic peoples it was also sometimes used as a house. This composite structure, drawn by oxen, was made of wood and covered

with bark, grasses, or undressed skins. It varied in size according to the needs of the owner and the facilities there were for moving it across the country.

The cart was the only vehicle known to the people of remote times. Later, it became a chariot. To make it more effective as a war engine, the Assyrians and other warlike people of that period attached scythes or knives to the wheels and other parts of the vehicle with which to cut down or maim their enemies in battle.

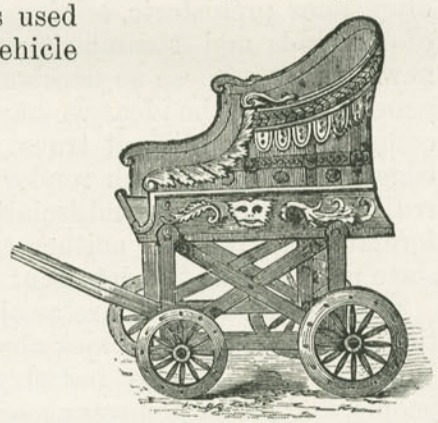
In Rome the cart became a favorite instrument of punishment through the practice of crushing criminals on its wheels.

The ancients, who could not conceive of anything beyond their personal experience, believed that the gods used vehicles exactly as they did. Thus the Romans thought Jupiter, Minerva and other great deities were transported in chariots drawn by magnificent horses, just as the chariots of Rome were drawn. Neptune's car was thought to be a shell drawn by beings half fish, half horse.

The Greeks had similar superstitions. The Hindoos assigned different methods of transportation to their gods. Thus Brahma employed

a swan; another deity, an eagle. Still others, a bull, rat, peacock, elephant, fish, parrot, ram, lion, tiger, or horse, as the case might be. One of the most ancient superstitions of this kind is that of Ea, the Chaldean's spirit of earth and water, who, it was believed, protected the world by going round and round it in a great ship.

The Egyptians used a four-wheeled vehicle for transporting one of their deities, but do not appear to have made much use of such a vehicle for any other purpose.



Primordial man did not go away from home and knew nothing about commerce. Prior to our era trade was feeble and travel infrequent. A few favored nations carried on a desultory commerce beset by dangers by land and sea. But their efforts were spasmodical and greatly restricted.

The world at large was peopled by savages. Outside a restricted ray of light all was darkness. The hordes that inhabited this unknown region never ventured beyond their own confines except in organized bands for purposes of rapine and murder. But the theory of carriage had been evolved. Man has since occupied himself in perfecting it. But he has built on old models. Thus, while vessels have been greatly improved since the fall of Carthage (B. C. 140), their original outlines are still preserved. This is also true of land carriage. With better roads the rude carts of the ancients have been perfected. But every important appliance is of primitive, oftentimes prehistoric, origin. The introduction of railroads and steamboats called into being new motors. These so accelerate, cheapen and generalize that the ideas we have to-day of intercommunication, distant travel, diffused knowledge and vast research render us incapable of realizing the lethargy and isolation of our remote forefathers. We can neither comprehend their state nor imagine the details of their lives.

The arts of Carriers are as old as the disposition of man to travel or look abroad for a market. Wherever, in any age, industry characterized a people, and protection was accorded, there, under one guise or another, the carrier plied his vocation. In the first instance his field did not extend beyond the carriage of an occasional traveler between neighboring and friendly villages or across some great river or branch of the sea.

Men lived apart in savage isolation. With the lapse of time the art of constructing vessels was evolved, and as man progressed in methods and needs we catch glimpses of him here and there in his diminutive ships plying back and forth along the Persian Gulf or in and out among the islands of the Mediterranean.

Of the facilities of the ancients for handling travelers, accounts tell us little. Even Herodotus, that most voluble, curious and amiable of gossips, is silent. He describes his journeys, the people he visited and heard about, but says nothing as to how he traveled from place to place. And this notwithstanding his voyages necessitated the most varied transportation, that peculiar to sea and river, desert and highway, mountain and valley. He tells us indeed, with a relish time can never dull, of the habits of the people he saw and heard about; their idiosyncracies, foibles, and weaknesses—especially their weaknesses—but not a word about means of transportation.

Herodotus was the most delightful gossip that ever lived. He penetrated the weaknesses of mankind with the prescience of a surgeon, but with the kindliness of a man of the world. Moreover, he took delight in recounting his experience. His voice is soft and ductile as he describes what he saw and heard. He dwells with evident pleasure upon the salacious practices of ancient Babylonia and the suggestive scenes in and around the sacred temple Mylitta. His voice is equally soft and low when speaking of the dower-earning

wantons of Lydia, of the unclad virgins of Lacedæmon, of the strange marriage rites of the Nasamonians, of the incense burners of Persia, of the burning love of the Scythian nomads, of peeping, insidious Gyges and his unhappy victim, the unfortunate Candaules. Nor does his narrative lose anything in interest when it recites the legend of the blind king Pheron, or the particulars of the amatory habits of birds, the concupiscence of animals, the propagating qualities of hares, the virility of vipers or the amorous propensities of cats. But not a word does he say about his means of traversing Syria and Asia Minor, how he journeyed from Halicarnassus to Ancient Thebes, how he lived *en route*, and the time it took to go from place to place. Such things he evidently esteemed of no importance, but how interesting they would be to us!

In our meager accounts of antiquity we have reference to the voyages of other travelers before Herodotus, notably those of Lycurgus and Solon. But while we are favored with information in regard to the objects of their journeyings, details of carriage are lacking. We derive much interesting information of sea voyaging from Homer's account of the wanderings of Ulysses, but the incidents of his journeyings are so outside the ordinary course of events that we gain little insight into practical methods of travel.

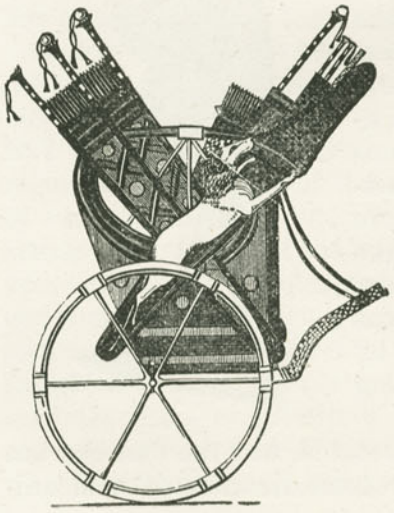
Of travelers in primitive times the Argonauts are among the first of whom we have details, whether fabulous or otherwise. Their journey,

which occupied months in its execution and was beset by many dangers, might to-day be followed by a child safely and with little cost of time or money. Such is the progress that has been made. But this progress has neither been certain nor steady. There have been long periods in which no advance was made, while the labors of centuries have frequently been lost by the mishaps of an hour.

In the phraseology of travel, land carriage has, curiously enough, adopted much of the nomenclature of nautical life. This would seem to show that the latter antedated the other. In this connection we know, moreover, that many centuries after the denizens of Shumir and the Eastern Mediterranean were accustomed to make long and successful voyages by water, it was still unsafe to travel by land except in strong detachments.

Woman, as already stated, was the first carrier. This was before the domestication of wild ani-

mals. In some countries the load was carried upon the head, in others upon the shoulders, in others strapped upon the back. Herodotus says that the men of Egypt carried their loads on their heads, while the women carried them upon their shoulders. The chariot is mentioned in very remote times. Sharrukin, King of Agade, in the records he has left of his campaign to the sea of the setting sun, fifty-seven hundred years ago, speaks exultingly of having ridden in myriads of bronze chariots. This reference would seem to indicate that it was something new—something to boast of. But later discoveries are likely to prove this untrue, as the semi-civilization of the Chaldeans dated back to a period far more remote than the time of Sharrukin.



In the accounts we have of the accoutrements of war in ancient times, and of the spoils captured from enemies overthrown, the chariot occupies, in every instance, a conspicuous place. In the invasion of Syria by the Egyptians, thirty-five hundred years ago, many chariots of bronze

and gold, history tells us, were captured at a great battle fought at Megiddo. Tiglath Pileser, who reigned twelve hundred years before Christ, recounts that he captured one hundred and twenty chariots in one of his campaigns in the Nairi country, a mountainous district to the north of Assyria. Afterward he tells how he constructed many of these vehicles for his own people, thus showing them to be a common medium of conveyance.

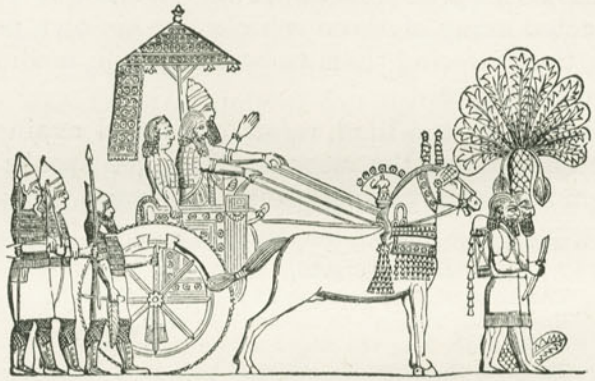
Homer, in the Iliad, refers again and again to the chariots at the siege of Troy; he speaks of them admiringly and as being decorated

> "With solid beauty . . . bright with the mingled blaze of tin and gold.
> The yoke of box, embossed with costly pains,
> Hung with ringlets to receive the reins;
> Nine cubits long the traces swept the ground;
> These to the chariot's polished pole they bound."

Six hundred and fifty years before Christ the Assyrian monarch, Asshurbanipal, recounts exultingly how he was hauled to the temple in a chariot drawn by captive kings. The chariots of antiquity were, in many instances, of exquisite workmanship, profusely inlaid with gold, silver and precious stones. The pictures left of them show a high state of perfection, both in the vehicle and the accoutrements of the horses.

The chariot offered an effective vantage ground in battle, and its use was so general that the ancients were in the habit of resorting, in time of war, to particular places with a view to its

effective use in battle. The great plain of Esdraelon was one of those spots. The chariot was generally used for land carriage in primitive times. It was easily constructed, strong, accessible, and capable of withstanding the hard usage to which it was subjected in that remote and rugged age.



Xerxes, in his invasion of Greece, is said to have had a carriage, which he used in common with his chariot. This is about the first mention we have of such a vehicle. Indeed, its use would not have been possible at a much earlier date. Until the time of Darius (five hundred and twenty years before Christ) general highways were not known throughout western Asia. This monarch conceived the idea of connecting the widely separated districts of his empire by public roads systematically laid out and maintained. These rendered the general use of vehicles possible. Darius was also, so far as we know, the first to

establish regular post routes, with relays of horses and riders. They connected his capital with the various parts of his empire. One of the emblems of the United States Postoffice department, a man on horseback, answers equally well for the mail carrier of Darius. The embassy sent by the Persian Megabazus to Amyntas, king of Macedonia in the time of Darius, was said to have traveled with carriages and all kinds of baggage. This was the embassy destroyed, with all its retinue, by the young Macedonian prince, Alexander. Cyrus and other early Persian kings are said to have carried their drinking water with them from Susa in carriages. Reference to the use of carriages by the ancients is generally misleading; the vehicles were simply rude wagons.

Many centuries passed with little or no improvement in the vehicles of the ancients. With safety in travel and better highways, progress was made. Covered carriages were first known in Europe in the

beginning of the sixteenth century, but they were used only by women of the first rank, men deeming it disgraceful to ride in them. Their use for women was for a long time forbidden. They were called "whirlicotes." Coaches were first let for hire in London about 1625, at which date there were only twenty; these plied at the principal inns. Ten years afterward, however, they became so numerous that Charles I. issued an order limiting their number. The covered coach was at first very unpopular. A writer in 1605 says: "The coach is a close hypocrite; for it hath cover for knavery and curtains to vaile and shadow any wickedness.* . . . It is a dangerous kinde of carriage for the commonwealth."

Of the chariots of the ancients, the best types were of bronze. This was the metal in common use. Of it shields, swords, daggers, knives and other implements were then made. Iron was unknown, or, if known, sparingly used. Thirty-five hundred years after Sharrukin's time the skill of an ingenious Greek, an inhabitant of Chios, who practiced the art of inlaying gold and silver vessels with iron, was, because of his peculiar art, thought of sufficient renown to be singled out for mention by the historian, Herodotus. In the time of the latter, travel within the limits of the civilized world, while not general, was more or less common. It is not, therefore, so

* The criticism still fits in many instances the compartment car.

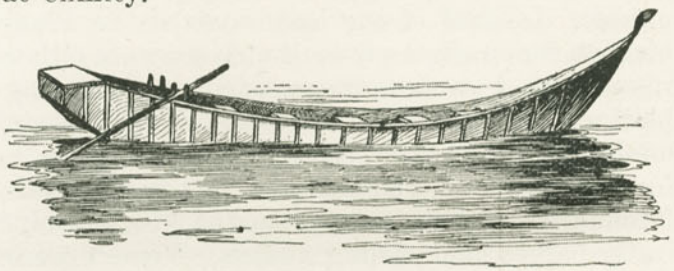
surprising that he does not tell us how he journeyed from place to place.

I have already described the means of transportation in Mesopotamia as noticed by Herodotus. It was not only exceedingly primitive but unique. Instead of the long boat of the Phœnicians, the crafts used on the rivers were either round like a saucer or consisted of a floating platform. At the time these clumsy crafts were used on the Euphrates, the Egyptians were much further advanced. Herodotus refers to three different kinds of transportation on the Nile, namely, rafts, barges and sailing vessels. Vessels were floated down the river and towed from the shore when going up stream if there was not sufficient wind to fill the sails.*

While these primitive vessels sufficed for inland navigation, they were not adapted to the sea, and it is to the seafaring people of antiquity we are indebted for the form of boat we use to-day,—at once convenient, swift and strong. The art of perfecting our form of sea-going vessels is due to the ingenuity of the Phœnicians. The Greeks still further perfected them. The

* We find early reference to governmental control of carriage in connection with water transportation. Beckman, a writer of a century ago, says: "The floating of wood seems, like many other useful establishments, to have been invented or first undertaken by private persons at their own risk and expense, with the consent of governments or at least without any opposition. But as soon as it was brought to be useful and profitable, it came to be considered as a right or prerogative of the ruler."

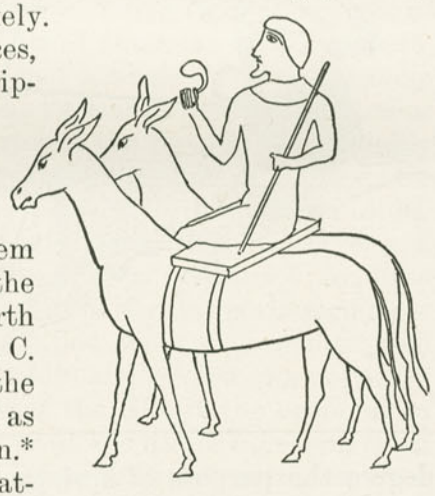
Romans took up the construction of ships (copying from their neighbors), not because of love for the sea or its commerce, but that they might overcome Carthage, with which city they were at enmity.



For purpose of commerce the ancients devised a strong, slow-going vessel, but for war something swifter and easier to manage was required. The trireme was the result, a galley with three rows of oarsmen. Afterward followed the quadrireme, a galley with four rows of oarsmen. This was succeeded in turn by the quinquereme, a galley with five rows of oarsmen. These vessels were also used for pleasure crafts and for the transportation of persons and goods when the traffic was such as to warrant it. They were models of strength and swiftness.

In contemplating the prehistoric age we can not but believe that Egypt, at least, with its great river, its generally peaceful pursuits, its

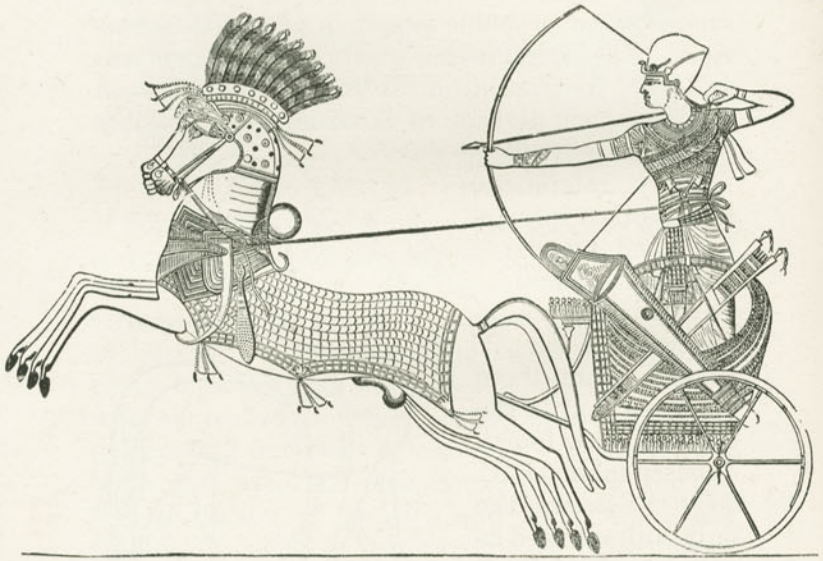
immense transportation needs, its vast population and varied industries, possessed at an early day common carriers as we do to-day—men who devoted themselves to the transportation of persons and property, furnishing every necessary appliance and favoring all alike. No ancient country, except possibly Chaldea, so strongly suggests the probable presence of common carriers. The agricultural habits of the Egyptians and the freedom from intrusion they enjoyed rendered such division of labor not only possible but extremely likely.



Many references, in Egyptian inscriptions and manuscripts, are found to primitive methods of carriage. From them we learn that in the time of the fourth dynasty (about B. C. 3000) the ass was the only animal used as a beast of burden.* A simple car or platform laid across the backs of two asses and strapped thereto served as a seat for the traveler.

*If this date is accurate, it indicates that the Egyptians were much later in perfecting land carriage than the Chaldeans. As a matter of fact this is probable. The Egyptians depended upon the Nile and such simple devices as were necessary for handling goods in close proximity thereto.

Chariots and horses made their appearance a thousand years later, in the reign of Amenophis III. The framework of their chariots was of wood, strengthened and ornamented with metal. The bottom was a frame interlaced with thongs in the form of a net, which also answered in some



degree the purpose of springs. The vehicle had two wheels. The wheel was strengthened at the joints of the felloes with bronze or brass bands and bound with hoops of metal. The wheel of a war chariot had six spokes; that of a curricle, or private car, four. The wheel was fixed to the axle by a linch pin secured by a thong passed

through the lower end. The pole was fashioned with the axe. It was of wood and curved. It rested on a yoke which was fastened to a small padded saddle on the withers of the horse. The horses were harnessed to the vehicle by a single trace on the inner side and were controlled by lines attached to a bit or snaffle. Blinkers were not used. The chariot had no seat. In military operations it was drawn by horses; for traveling purposes oxen were more often used. Chariots occupied by women of rank had an umbrella overhead, held by a rod rising from the center of the car. The handle of the whip was of smooth, round wood, and had a single or double thong. In some cases it had a lash of leather twisted or plaited. The chariot of the Egyptians was highly ornamented with trappings and hangings; for these leather was principally used, dyed in different colors, and adorned with metal edges and studs. The construction of a chariot required diversified skill and so particular craftsmen were employed, for the wood work a carpenter, and for the bindings, saddle and coverings a currier.

The importance of the Nile in the economy of Egypt, traversing as it did the whole length of the empire, early led to the construction and use of different forms of water craft. It is claimed the first sea voyage of which there is any authentic knowledge was made by Egyptians to the coast of Greece. It is probable, however, that the art of navigation was practiced on the Erythrean Sea (Persian Gulf) quite as early, as the

peoples who bordered its shores vied with the Egyptians in antiquity and culture. The inscriptions of Egypt refer to the use of boats as early as the fourth dynasty. A statue of that date of a naval constructor is extant. He is represented as seated on a stool, holding an adze in his hand. The inscriptions of the fourth dynasty also record the building of a boat ninety feet long and thirty-five feet broad in seventeen days. It was used in the transportation of stone. The Egyptians early learned to utilize the mast and sail. At first the former was double, but this was afterward abandoned. There seems to have been three classes of Egyptian boats, wood, basket work and inflated skins. The last named were "round, in the form of a shield, without head or stern. They were of all sizes, the largest being able to carry five thousand talents weight."* The wicker boats were used principally for fishing, and were made of water plants or osiers bound together with bands made of the stalks of the papyrus or cyperus.† They were light and could be carried from place to place, past rapids, cataracts, etc. It was in such a boat that Moses was exposed. The more pretentious boats of the Egyptians were of wooden planks with ribs and keel. They had a mast, keel, prow, hold, lower and upper decks, a scuttle hole, sails, halyards, pumps, rudders and other necessary paraphernalia. They were used for heavy transportation and for war.

*468,750 pounds.

†Not the same plant as that from which paper was made.

Though not generally large, we have references to some that equal our modern ships in size. Diodorus mentions one of cedar wood, dedicated by Sesostris to the god of Thebes, as being four hundred and twenty feet long. Another is mentioned that carried four hundred sailors, four thousand rowers and three thousand soldiers. This vessel was said to be four hundred and twenty feet long and seventy-two feet high from keel to top of poop. Athenœus describes it as having forty benches and four rudders. Its longest oars were fifty-seven feet long, poised with lead at the handles to make them manageable.

The Egyptians sometimes used four rudders. Each consisted of a long, broad blade and handle. The oar was a round wooden shaft to which a flat board of oval or circular form was fastened. It worked on thole pins or in rings fastened to the gunwale of the boat. The rowers sat on benches or low seats, or stood or knelt, sometimes pushing, but more often pulling. The sails and ropes were made from the rind of the papyrus. The sails were often colored a brilliant hue. The vessels were furnished with cabins, built of wood and painted inside and out, and fully protected the occupants from the elements. They were in many cases richly decorated and furnished. Entrance was sought by a door at the front or side.

The Egyptians were an exclusive, self contained people. Throughout the virile period of

their history they looked upon mankind as unworthy of association or recognition and adopted every possible means of excluding them. The Phœnicians, however, because of their near proximity and aggressive character, were able always to maintain more or less intimate relations with them, and it is probable that many of the devices which the Phœnicians employed and which the world copied from them, they in turn owed to the Egyptians. The Phœnicians, of whom more extended notice is given elsewhere, were the common carriers of their time. But whether they operated in the earlier ages directly for the profit to be derived from the handling of men and freight, or made this only an incident of their voyages, we cannot tell. In later times it is likely they had well established transportation lines. This, it is probable, is why Herodotus did not think it worth while to mention them. History was too precious to him to be made the medium of well-known facts. But it is not probable that carriers were licensed; were accorded the right, as they are now, to exact a particular sum for a particular service (no more and no less), with the obligation attached of insuring what they carried against the accidents of the service. These details came later, with improved appliances, better protection and higher organnization. Wherever men have been free to act, however, they have, it is probable, from the earliest period sought profit from the carriage of men and merchandise. But from the time of

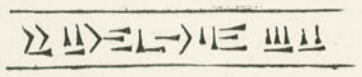
Cyrus to that of Victoria, little progress was made in the art of transportation, when, in a moment, it passed from the rude methods of primitive times to the luxurious devices of our day.

CHAPTER VI.

TRANSPORTATION FORMS AMONG THE PHŒNICIANS.

Among the early carriers of whom we have authentic knowledge, the Phœnicians stand foremost. These interesting people occupied a narrow strip of land on the extreme eastern border of the Mediterranean. Of Semitic origin, they were typical business men, and, in many respects, the most remarkable of antiquity. To them wealth was all-important. Their thoughts were occupied wholly with gain. They cared nothing for fame; nothing for what their descendants might desire to know of them. This is why they left no account of their experience as traders and voyagers, extending over thousands of years, so that our knowledge is gleaned from the furtive glimpses we have of them in the literature of other countries. Except for this, these people would be lost to us as completely as is the secret of their incomparable dyes.

Phœnicia possessed the trade of the world at one time, and its cities were the clearing houses wherein the goods were handled and the balances struck. The prosperity of these robust, far-seeing, prudent, saving, and withal grasping people continued unabated for nearly two thousand

years. Out of the necessities of their lives many of the devices in use to-day originated.  The greatest, however, is the alphabet. The cuneiform and pictorial writings used by surrounding nations, while answering the purposes of monumental writing or a restricted business, were not adequate to an extended commerce. This latter required some more simple and expeditious means of writing up accounts and of communicating easily with persons at a distance; something at once cheap, simple, easily learned and capable of particularizing all the wants of an ever-widening trade. Our alphabet was the result of this want. It was at first a device of clerks and accountants merely. It had no romantic or social aspect, and was as devoid of literary associations as a mass of figures is to us. Its purpose was purely practical. Of the name of its inventor we have no hint. It is apparent that he could not have anticipated its absorbing, far-reaching influences. Who he was we can only surmise. He could not have been a merchant. The subject was too trivial; moreover, a merchant would not have had the time. It was too vulgar to interest people of august rank, and there were no *literati*. Its inventor, therefore, it is probable, was a clerk, perhaps an Egyptian or ingenious Greek, kidnaped by some homeward-bound captain to fill up the measure of his return cargo. However this may be, it was purely a business device and intended to meet

business needs. It rendered simple what was before complicated, and made accessible to all what had previously been known only to a few. To the base, mechanical and crafty Phœnicians, therefore, we owe the greatest civilizing force of all time, the greatest source of progress and happiness we have.

But as no perfected thing is, in all its parts, conceived simultaneously, it can not be claimed for the Phœnicians that the alphabet they invented was an original thought. They derived it in part from the Egyptians, but from whence the latter conceived the thought we do not know. In their early experiences the Egyptian people possessed hieroglyphic picture writings representing the simple sounds of the language. In the course of many ages these were, through constant use, greatly simplified for the purposes of the scribe, while largely maintaining their original structure when used for purposes of monumental writing. It is from the modified form that the Phœnicians probably found the suggestion of their alphabet. The hieroglyphic or pictorial characters of the Egyptians comprised ideas, syllables and letters. The Phœnicians, however, founded their system wholly upon the last. The names they gave the letters corresponded generally to the objects they resembled. Some of these objects scholars claim to be able to trace in the pictorial writing of the Hittite people, a warlike nation of Asia Minor. The writing of these last was wholly hieroglyphic.

The lines ran alternately from right to left and left to right. This last feature was also peculiar to the early Greeks, who are thought to have derived the idea from them. The characters were ideographic, *i. e.*, represented ideas or syllables. They were accompanied by determinatives to indicate the class to which they belonged. Phonetics were also used to indicate the sound or pronunciation of words. So far as scholars have been able to discover up to this time, the Hittites possessed only a limited number of characters. Some of these, however, greatly resemble those of particular letters of the Phœnician alphabet, and it is this peculiarity which has led scholars to trace the connection referred to above.

Prior to the appearance of the Phœnicians on the shores of the Mediterranean they are thought to have occupied the fertile lands in the neighborhood of the Bahrein Islands on the west shore of the Red Sea. The Man Fish, that tradition tells us appeared miraculously to the people of Shumir to teach them wisdom, was, it is quite likely, a Phœnician or practical man of affairs. While we have no knowledge from whence he came, we know much about the simple people he visited. I have referred to them in a preceding chapter. They were goblin worshipers and lived in eternal dread of evil spirits. In after time they became an agricultural people and were famed for their knowledge of government, astronomy and letters. The canals they constructed

and maintained for purposes of irrigation and carriage have been the wonder of mankind in all ages.

The Phœnicians were subtle, crafty and acquisitive; at once ostentatious and parsimonious. Of gloomy disposition and sensual habits, they possessed little or no imagination. They never wrote a book, at least we have no trace of any. Letters were to them what dollar marks are to us, devices merely to expedite business and reduce expenses. They attached no intellectual value to them whatever.

The character and methods of the Phœnicians were intensely practical. Those of shrewd, prosaic traders. On occasion, however, they were, in religious matters, extremely picturesque. Like all gloomy people, they were given to the wildest extremes, the grossest excesses.

Of the benefits the Phœnician incidentally conferred upon the world in his struggle to attain and retain wealth, he took no note. They awakened in him no ray of enthusiasm or interest. His spirit was purely commercial; dwelt wholly in the present. But his selfishness was providential and far seeing, the sagacious selfishness of a conservative business man; that form of selfishness which has lifted mankind out of the depths of ignorance and barbarism. The good the Phœnicians did was incidental, not premeditated; but not the less real on that account. Let this be a crumb to business men intent upon the acquisition of wealth, who are thought to

care too little for their fellow creatures, too little for art and literature.

Homer speaks of the Phœnicians as "cunning fellows, carrying trinkets in their black ships." They trafficked very much as did the hucksters who followed Columbus, giving little and receiving much in return. In marked contrast to the Spaniards, however, they did not destroy, but built up. It was thus Greece, Sicily, Italy, Spain and the shores of the Mediterranean and Black Seas were opened to civilizing influences by them.

The Phœnicians bore to the people of Europe the same relation early European voyagers bore to the savage Indians of North America. Phœnicia found the Grecians savages; she taught them to manufacture and trade. She gave them their mythology, their gods, albeit of Chaldean origin. She gave them, also, as she did the other barbarous peoples with whom she traded, knowledge of government, the organization of society, business methods, arts and mining; taught them the construction of masonry and the use of mortar and familiarized them with the sword, weights and measures, textile fabrics, bronze, gold, silver and personal ornaments. The voyage of the argonauts is, it is probable, only an old Phœnician story, embellished by the versatile Greeks.

Phœnicia through her commercial ventures made known her culture to the world and shared it, albeit reluctantly, with her fellow men. Egypt, while more refined, was reserved and exclusive. The latter did not favor intercourse

with the nations that surrounded her; agriculturists, her people lacked the instinct of trade and commercial adventure which characterized the more hardy Phœnicians.

Tyre was the greatest carrier of Phœnicia. Homer speaks of its ships. He also refers to the incomparable dyes of Sidon and its skillful workmanship in metals. The Phœnicians were not a numerous people and cared nothing for agriculture. Their education did not extend beyond practical needs. They have not left us a work of art or a single poem. Their gods, moreover, were extremely rude, indicating the rugged character of those who worshiped at their shrines. These gods, we are led to notice, were much less numerous and elaborate than those of neighboring nations. The people, it is apparent, looked upon them as serviceable but expensive luxuries; largely as intermediary agents of trade and good fortune. With the methodical habits of business men, the Phœnicians performed their religious duties with painstaking regularity and decorum. When trade was good they kept up their sacrifices and attendance lest neglect should invite disaster. In time of panic or war, or when pestilence scourged the land, or danger threatened, their offerings increased. Their protestations at such periods became more zealous, more emphatic. Their fervor then knew no bounds. If the gods still remained obdurate, the priests and fanatics mutilated themselves with knives and lances. If inattentive still, children were

sacrificed. Under no circumstances did the Phœnicians ever knowingly jeopardize their property or personal safety if an acceptable offering could be found, and human sacrifices were ever with them a favorite means of propitiating the gods in time of distress.

While capable of, and, indeed, in many instances, practicing the most ferocious acts, the Phœnicians were not a warlike people. They were diplomatists, traffickers and temporizers. They preferred to buy immunity. Hating the restraints of military service, their armies were made up of mercenaries. They looked coldly upon the methods and doubtful results of war. Nevertheless, they were capable of the most heroic acts of bravery and self sacrifice when necessary. In this spirit the city of Tyre withstood the siege of Nebuchadnezzar, the Babylonian king, thirteen years. It was mighty even in its decadence. Here alone Alexander the Great met stubborn resistance; open defiance; heroic defense; real war; a courage he could neither quell nor placate. The fangs of the trader, backed up by a courageous understanding, he found sharper and stronger than those of the warlike and savage barbarians he encountered elsewhere.

The Phœnician knew nothing about the necessities of history, and cared less. In consequence he is greatly despised by historians. He was little concerned about what the world said of him and took no pains to supply it with food for gossip. Idealists and moralists look upon him as

gross and unworthy of praise or emulation. A materialist, he has not furnished them a single proverb. The benefits he conferred upon mankind, however, were great and lasting, and have been handed down to us through intermediate ages with little change. Civilization owes him much, and the more we know of his affairs the less we are surprised that he found an alphabet necessary to the conduct of his business. In our day we could not get along without it for an hour. However, the combinations of our time have rendered other things necessary, about which the ancients knew nothing. Thus, we require regulations that will enable vast numbers of men to act as a unit and to adhere closely to connected ideas. Such regulations grow little by little. They require to be copious, consecutive and clear, and upon the skill we evince in framing and enforcing them will depend the permanent prosperity of our age. It may exist for awhile without, but only for awhile.

Nothing is more interesting than a comparison of the business methods of to-day with those of antiquity. Those familiar with our affairs are struck by the number of forms used. Their object is to economize labor and help to a better understanding. The idea is not, however, new. Amidst the ruins of Babylon are found abundant traces of their use many centuries before our era. They differed from ours only in that they were made of clay instead of paper. Their purpose was the same—to facilitate affairs. If a building was

to be bought or rented, furniture to be sold, a cow or horse to be traded, a farm to be leased, a man to be married, or a slave to be hired, a form especially adapted to the purpose was ready at hand. Side by side with these devices were carefully formulated regulations for the guidance of those who used them. They had the same underlying object as those used by business men and others to-day, namely, to facilitate man's wants, expedite business; cheapen and render secure. They symbolized his needs and cravings.

From the forms the Babylonians used we are able to trace largely their habits. Many of these devices have been found in the ruins of a great banking firm known to archæologists as Egibi & Son. The interests of this firm seem to have descended uninterruptedly in a particular family for a number of generations. It was trusted and employed alike by the people and the king. Caravans traversed far distant regions inspired by its means and governed by its regulations, just as great railways traverse India to-day, built by London capital and governed by London men. It also acted as agent and administrator; received deposits and loaned money on security, and, among other things, taught its clients how to acquire, possess and transfer property. Its regulations defined incidentally the business relations of man and wife, of guardian and ward, lawyer and client, the government of minors, servants and slaves. It also possessed a code of laws for

the government of its employes. For different classes of business it had different forms, just as we have blank checks, contracts, deeds, and so on. The instructions which accompanied them were full, and, so far as possible, minimized the labor and risks of business.

Our knowledge of Babylonia is rendered doubly vivid by these and other ancient records. It is apparent that the community looked to the Egibis for guidance and protection in many things. Elsewhere it was robbed alike by king and priest. Everywhere its interests were neglected. But this great banking house, depending upon the confidence of its patrons, dealt fairly, throwing around its customers, so far as it could, the ægis of its protection. Its carefully drawn code of rules was not less exacting or less clearly understood than that of the Bank of England, albeit they were printed on hardened blocks of clay. Printed upon such tablets, hardened by fire, twenty-five centuries have not sufficed to dim or efface them, and as we pore over these records of an age long past we discover anew that the business man, then as now, was the great benefactor of his kind, however unconscious he was of the fact. While king and priest enforced an arbitrary interest wholly personal and oftentimes narrow, the man of affairs encouraged the people to be just and to live together peaceably.

The Babylonian kingdom was, throughout its long existence, the center of ever recurring conspiracies, revolutions and sieges. Its religion was changed or modified many times, and its tyrants flit across the stage of history like the shadows on Bosworth field, but the great commercial house of Egibi & Son, it is interesting to notice, continued uninterruptedly to look after the interests of its clients and to foster and protect them in every way possible.

The bank check and draft used to-day, and intended to facilitate exchanges, were invented during the time of which I write. They had for their purpose the safe and easy transfer of values between distant cities and countries. In those days the seas were infested with pirates, while robbers were undisputed masters of the plains and mountains. Travel was both tedious and insecure. It was during this period that the use of the precious metals as a medium of exchange first suggested itself to mankind. Previously transactions had been in kind, exchanges effected by barter. Thus corn was traded for purple cloth, horses for timber, and so on.

That it was a business man who first conceived the idea of utilizing gold and silver as a measure of exchange, no one can doubt. The discovery of the art of coining money has been attributed to the Phœnicians. It harmonizes with their genius. It is also accredited to a Lydian king. But in respect to this latter, history is, as usual

in such matters, indefinite. Its discovery by a citizen of Sardis would, in the course of things, be attributed to the king. We strain our eyes in vain to find any mention of a business man except in histories of current events. Scant room was formerly allotted his acts, however beneficent. His position in ancient times may be likened to the curious ant entomologists tell us of which occupies its time in peaceful labor, planting, constructing, repairing, storing, while an army of pugnacious, bustling, fighting ants lies idly about the corridors of the hive. These latter correspond to the governing forces of the ancient world, and to them history ascribes every beneficent act.

One of the most interesting things in connection with the people of remote antiquity is their likeness to ourselves in habits and cravings. The clay tablets of Babylon evince this. Those who used them were far advanced in civilization. Savages have no use for formulas. It is only when man becomes civilized that he recognizes the value of order, the necessity of method. The great house of Babylon to which I have referred employed many agents, and in order to carry out its extended and varied aims it was necessary each person in its employ should know its wishes and the conditions under which they did business. A similar necessity exists to-day in connection with the administration of corporations. When men act for themselves, rules and regulations are not vital, but when men act

for others, they are as necessary as the laws of society. Indeed, they are co-responsive with the latter. Great affairs, like those vested in governments and corporations, can not become demoralized without society becoming undermined, and to be maintained they must be administered under fixed and determinate laws. Civilized government is the culminative act of business necessities—their corollary and sequence. No government, worthy the name, has ever existed where trade was unknown. Its absence indicates lack of ability or disposition to organize and carry on government.

The Babylonians, or Accadians, were an exceedingly versatile and amiable people. They are accredited with the invention of the cuneiform system of writing. They evolved it from the picture writing previously in use. The instrument they used in writing is called a style. It was made of wood or metal. The mark it made when pressed into the soft clay was the shape of a wedge ▼. The relation these marks bore to each other indicated their meaning, just as aggregations of letters denote words. Conforming to their hieroglyphic origin, the characters were also ideographic, that is, represented ideas and things, thus permitting many abbreviations otherwise impossible. Determinatives were used to indicate the class to which a word belonged, whether an animal, the name of a man, and so on. Pronunciation was assisted by phonetic characters. But as the same phonetic

character might mean many different things, dictionaries were provided giving the various phonetic values of the characters. Dictionaries also were employed to indicate the ideographic meaning of characters.

The phonetic form of writing was adopted by many surrounding nations, but was abandoned by those bordering on the Mediterranean for the alphabet. The Chaldeans and their successors, the Persians, continued, however, to use it. It formed the medium of inscription upon their monuments, and was employed by them in commerce, correspondence and literature, but while various nations used the cuneiform system of writing, the characters they used were not alike. Thus, those of the old Persians were very few and simple, while in the case of the Assyrians they were numerous and complex. In some instances the characters indicated letters, in others syllables, in others objects. Both vowels and consonants were employed, but not to the same degree by different peoples.

The Babylonians resembled the Egyptians in the versatility of their acquirements and in the amiability of their disposition, but lacked the aggressiveness and initiative courage of their Phœnician neighbors. The latter were natural organizers of capital. Native merchants, all their measures were prudent, far seeing and wise. They at one time monopolized the carriage of the Mediterranean, while their trade with India was large. They also monopolized for many

centuries the great caravan routes of Syria. They were both manufacturers and merchants. The same man purchased the raw material, manufactured it and sold it. In order to save expense they constructed furnaces and smithies in the various countries from which they derived metals. These were associated by the savage Greeks with supernatural powers. They could not understand how a molten mass of metal could be transformed into beautiful instruments without aid from the gods. The arts of healing and music the Greeks also associated with that of the smith.

Much of the trading was done, at the time of which I write (B. C. 2000 to 400,) at fairs which were held at stated periods in the great cities and, infrequently, at other places. I have already referred to these primary markets. They were also made the occasion of festivals and social and religious rites. Those held at Tyre, as we may readily believe, exceeded all others in the abundance and splendor of the goods displayed, but lacked, equally as we may suppose, in social and religious interest. They were, it is said, frequented by eager buyers from all parts of the known world.

The Phœnicians were commercial nomads so to speak. They were never satisfied with the common avenues of trade, and wherever advantage offered, established colonies, using force only when they could not secure what they wanted otherwise. They are said to have formed forty

colonies, all of them offsprings of the mother hive and active agents of its industries.*

The most skillful of sailors, the Phœnicians frequented every sea. Their merchant ships were built especially with a view to the carrying trade—strong, broad and deep. Their war ships were not less skillfully constructed, and long dominated the Ægean and Mediterranean seas. The superior skill, wisdom and moderation of the Phœnicians formed the basis of their supremacy. As an instance of their deftness, Herodotus recounts that in excavating the canal of Xerxes across Mount Athos, the Phœnicians were the only ones who commenced to dig far enough back to prevent the walls caving in as they descended with the work. All the others made perpendicular cuttings from the surface. The skill and ships of the Phœnicians, it is apparent, rendered Xerxes' invasion of Greece possible. They organized his supply depots along the coast and furnished him transports, ships of war and sailors. That they did not show greater interest and courage was owing to the fact that they served as mercenaries merely. In no instance was the Semitic race ever found lacking in bravery when personal interests were involved.

The ships of the Phœnicians were of fir and cedar; the oars of oak. Sea-going vessels were largely their invention. They also perfected

* Cadiz in Spain, colonized by them about B. C. 1100, is said to have been the farthest colony they established. The seats of many of their colonies became in time great cities.

them. The ships of to-day are modeled generally upon the lines they followed.

Bordering upon Palestine, the Phœnicians naturally traded much with the Israelites. Hiram, king of Tyre, furnished Solomon the hewn timber for his temple. He also supplied him with workmen, metals, dyed stuffs, and other material. In return he took in part payment a mortgage on certain cities of Israel, which, when Solomon became embarrassed, he duly and promptly foreclosed.

The trade of the Phœnicians embraced every known article for which there was a demand. They had no prejudices in such matters. They exported timber, furniture, salt, fish, hides, bronze articles, woolens, cloth, robes colored with their incomparable dyes, tapestry, gold, silver and bronze ornaments, exquisite glassware, trinkets, and other manufactured articles. They imported food products and raw material, which latter they manufactured and resold to the people from whom they bought. They were expert workers in metals. In their early history weapons of all kinds and many articles of table use as well were made of bronze. One of their great industries was the manufacture of this metal. They required for the purpose copper and tin. The former they found in the island of Crete, one of their colonies. Their supply of tin they procured from the Taurus mountains; afterward from Britain, which place they visited many centuries before we have any historical knowledge

of it. Amber was another article of trade. This they procured from the Baltic. They also carried on trade with the country bordering on the Black Sea. No source of traffic that their patience and energy could reach appears to have been too remote for their enterprise.

Although the Phœnicians were essentially traders, they were not averse to proselyting in a prudent way in the interests of religion. Thus, one of their daughters, the fair Jezebel, introduced idolatry into the palace of the king of Israel after becoming his wife. Her act is said to have justly occasioned widespread scandal and apprehension in Judea. At another time the Phœnicians greatly outraged their Hebrew neighbors by offering wares for sale in a city of the latter on a Sabbath day. This is not strange as all days were alike to the Phœnicians when opportunities for trade offered. Their thoughts were ever intent upon gain. In all their vocations they were, it is apparent, industrious, temperate, saving and adroit. The orgies in which they indulged were safety valves merely; the bursting forth of pent-up reserves. In the lapse of ages these outbursts took on the character of religious rites, and thus became not only proper but highly praiseworthy.

CHAPTER VII.

THE CARTHAGINIANS AS PRIMITIVE CARRIERS—THE BASIS OF GOOD GOVERNMENT.

In describing Phœnician methods and resources of transportation by water, I have also, in the main, described those of Carthage. Carriage by land in the latter country was confined largely to human beings and beasts of burden, as it is in all primitive countries. The vehicles used were of the most rudimentary description. However, Carthage looked to the sea for its sources of wealth and, in the main, for its supplies.

The Carthaginians were the greatest people, commercially, of their day and, in some respects, of antiquity. Their love of material things was inherent and overpowering. Traders by nature, they possessed every quality that goes to make up a great business man—the far-seeing instinct of the manufacturer, the subtlety of the buyer, the craft of the seller, the docility of the carrier.

Like their progenitors, the Phœnicians, they did not hesitate to wage war whenever commercial advantage was to be gained thereby, provided their ends could not be attained peaceably. Equitable in their dealings with each other, they were not regardful of others. Averse to manual labor of every kind, they employed slaves to till

their fields, and mercenaries to man their fleets and fight their battles.

It is always interesting, as well as instructive, to compare our age with that of the ancients. There is much in common between them. Human nature is the same to-day as it was then, and the conditions it engenders are, in the main, the same.

Our time is supposed to be marked more than any other by the commercial spirit. Yet, twenty-five hundred years ago the Carthaginians, in their fortified home on the southern shore of the Mediterranean, lived only to trade, to manufacture, to buy, to sell, to carry, to acquire. In their polity possession of property and the happiness of mankind were considered coincident. Their central thought was the acquisition and retention of wealth. Everything that did not contribute to these ends was eliminated from their system. Social distinctions were based, primarily, upon property; all alike, from the highest to the lowest, engaged with enthusiastic zeal in this acquisition; all alike felt the thrill of success, the chill of failure. It is said they esteemed every kind of gain honorable. This intense devotion to a material idea had the effect to lessen their regard for truth, and among other things the faithful observance of treaties, so that unstableness became synonymous with their name.

A Carthaginian did not hold an untruth to be wrong if profit accrued thereby. Far from it. Success was the purpose and end of life. He

strove for it by day, dreamed of it by night. The embodiment of craft, the synonym of cunning, he lived only in the attainment of material things. His religion ran parallel with his business. When times were prosperous he palmed off the children of slaves as his own upon the gods as a sacrifice. But when financial reverses threatened or wavering armies jeopardized the state, he did not hesitate to offer up his own offspring; nay, threw into the balance whole hecatombs of children, lest anything should be wanting to propitiate the gods. Crafty and complacent in the hour of success, he was oftentimes timid and halting in the hour of danger. He thus lost advantages he was never afterward able to regain.

The Carthaginians were barbarians. Their excesses were the excesses of semi-civilized people, of rude children, with capacious stomachs and good digestion. The age was one of savagery. This makes their mental acquirements the more remarkable. They were at once an acquisitive and combative people. Their wars had always a business aspect—the acquisition of supplies, or the making or retention of markets. Their armies, while officered by citizens, were made up of Africans, Iberians, Greeks, and Gauls, sought at the lowest price in the open market, like cattle. They consequently lacked cohesive force and patriotic impulse. The revolt of these mercenaries after the first Punic war forms one of the most interesting and instructive chapters in history.

The Carthaginians were not only great business men, but possessed military talent of the highest order. Hannibal has never had a superior. Many others achieved great distinction. With the instincts of traders, they rewarded the commander who was successful with honor and continuous employment, while they degraded or crucified without mercy those who, through failure, retarded or endangered the interests of the state.

Originally governed by a king, the Carthaginians found monarchical institutions inconsistent with the fixedness of purpose and facility of action they thought desirable in a commercial state. They required a government that should be uniform, continuous and conservative in the application of its powers; a government wherein the servants of the state should be bound up in the success of society as a whole instead of a ruler; a government wherein legislators and other servants should display the skill, experience and judgment that can only be found in their highest form where the interest of the agent and the principal are so interwoven as to be inseparable. They accordingly chose their legislators from those who had the greatest material interest in the building up and perpetuation of the state—from those who possessed most. They did not believe in patriotism without property. The governing class did not, however, form an exclusive caste. Access to it was open to every successful trader or merchant. Jealousy

was thus measurably avoided, while the government was continually recruited from the vital forces of the nation. To secure experience and fix the interest of incumbents, the tenure of office was made during good behavior, except in the case of the chief magistrate, who served one year. Afterward he did not, like the presidents of the United States, retire to obscurity, but was transferred to the senate, of which he thenceforth became a part. He also exercised other functions of value to the country.

The members of the Carthaginian senate and the council formed from it held office for life. The former comprised a large number of men. They were chosen with the greatest care and their action was final, so long as they were unanimous. Mark the truly commercial instinct of the condition. The necessity of unanimity enforced conservatism of action, because only conservative measures can be made unanimous in a large body. While the rulers of the state were clothed with great power, it was so guarded as to render its exercise improbable except for the general good. Particularity was observed in everything. The duties of each magistrate, senator, councilman and office holder were so fully defined that responsibility attached to all he did. Because of the fixedness of their tenure and the protection accorded them in the discharge of their duties, the interests of the state and servant were inseparable. The latter watched over the former as if it were a part of his inheritance.

Under a government thus organized and fostered Carthage flourished in uninterrupted splendor and without internal strife for six hundred years. No other country can show so magnificent a record. It was only overthrown when its system of property qualification and specified duty and attendant responsibility was relaxed. While other countries, notably Rome and Greece, were yearly torn with internal dissensions and their streets deluged with the blood of citizens, Carthage pursued the even tenor of her way, happy, prosperous and contented. This record, unexampled in the history of the world, furnishes indisputable evidence, if it were needed, of the marvelous executive ability and talent for government possessed by business men; a talent equal to every occasion, basing its action as it does on material needs and the necessities of events as they arise.

So long as Carthage made the possession of property indispensable to official position, the state flourished. She alone of all nations of which we have knowledge, based her government distinctly upon the conditions that sway men in private life. She believed that the preservation of a country (including its liberty) may be most safely entrusted to those who require individual freedom to advance their personal ends. Property interests demand this freedom. She rested her greatness upon the selfishness of men and its profound, godlike wisdom. She believed men to be loyal, stable and

discreet under all circumstances when their material interests led that way. She therefore made the collective selfishness of her property class the basis of her government.

Such were the Carthaginians. My object in describing them is not so much to extol their capabilities as to point out the similarity that existed between their needs, their far spreading interests, and our own. While we are more enlightened than the Carthaginians, they greatly exceeded us in the carefully devised safeguards necessary to protect a country from internal strife and secure the continued prosperity and happiness of its people. More diversified than they, we pursue hand in hand with our commercial thrift, abstract ideas of mankind, education, literature, art, scientific research. Carthage cared nothing for these things and encouraged education only so far as it was useful to the merchant and trader. The only literature it left to succeeding ages is said to have been a manual on agriculture. As writers, scientists and scholars produced nothing material they had no place in Carthaginian economy.

The Carthaginians, like ourselves, had no nobility. The basis of distinction with them, as with us, was in the first instance, wealth. Great and long service in the state engendered an interest in the descendants of such people, but it was weak and inconsequential compared with the potential force of present wealth.

No government of ancient or modern times

exactly resembles that of Carthage. Its methods were simple. It protected its people without sentiment or cant. Every one pursued his calling unimpeded. The duty of the state was to guard each citizen from molestation, both from within and from without. It selected its rulers from those who were successful in private life; those who achieved individual success in material things. It took those who had shown the greatest foresight, the greatest constructive talent, the greatest executive ability in managing their own affairs, and made them the guardians and servants of the people. This was the sublimity of wisdom.

In the history of mankind certain conditions attach themselves unalterably to particular races of men. In some the capacity for business is barely perceptible. In others it is the predominating trait; this latter was true of the Carthaginians. It is true of the white race generally; its people have the genius of money makers, and possess in the highest degree the ability to organize and govern. In the needs of business, autocratic power—when not founded on the good of society—succumbs because the growth of commerce requires security and guarantees of fair dealing. King and noble may exist in splendor and security amidst a poor and enslaved nation. Commerce can not. It requires liberty and stable conditions. The decrease of tyrannical rule in every country has been in the ratio that its commerce has increased. In early times this progress

was so slow and obscure that its cause was not suspected, nor its result foreseen. We owe all we possess to the beneficent influences of trade and the conditions it engenders. Except for it mankind would not to-day possess a comfort above those of the cow or pig.

Business men are, above all mankind, the wisest and safest of counselors. They alone know how to select good servants, and how afterward to secure efficient service. They alone comprehend the universality of man's needs and the manner of attaining the same. Good government is impossible without their advice and far reaching counsel. Monarchs achieve greatness only when they possess great executive (business) talent, or make use of it in others.

Business ability was the basis of Carthaginian government. The latter was founded on material wealth; the separation of legislative and executive duties accompanied by a stable civil service. Men were required to demonstrate their trustworthiness in private life before being accorded power. While legislators served during life, the infusion of new blood into the body politic, as members one by one dropped out, was so slow and imperceptible in influence that the settled policy and self poise of the government were never disturbed. Each man had time to learn his duties and responsibilities before being called upon to act. The result was a body of men peculiarly fitted to govern. The fruit of their labors was six hundred years of prosperity; six

hundred years of absence of civil strife; six hundred years of individual freedom. The justness and far seeing policy that secured these results animate business men to-day. The same principles that held good in the government of Carthage are equally applicable and equally necessary to good government to-day.

Carthage was a colony of Tyre, founded by the Phœnician princess Dido B. C. 840. For several centuries it enjoyed, with the parent country, the carrying trade of the world. Its revenue was derived mainly from duties and the tribute of conquered peoples and dependent colonies and cities. Direct taxation was resorted to, however, when the emergencies of the government required. Gold, silver and electrum constituted the circulating medium of the country. A form of currency made of leather is also said to have been used, but what it was based upon we have no account. The Carthaginians are said to have introduced the custom of paving streets. The Romans, who are accredited with being the great road builders of antiquity, learned from them. Here, as in everything except the knowledge of war, courage, fortitude and brutality, the Roman was a mere copyist of his more versatile neighbors.

The voyages of the Carthaginians in quest of trade carried them into every known part of the western world, causing them to explore many seas before untraversed, but with the characteristic indifference of business men to abstract

things, they left no account of their discoveries.

For several centuries Carthage was the dominant power of western Europe. Her arms overcame the barbarians that surrounded her, while her war ships dictated terms to the countries lying along the western shores of the Mediterranean. But in the course of time the savage tribes that inhabited Greece and Italy acquired the constructive skill of the Semitic traders who visited their shores. They thus became active and jealous rivals. To this jealousy Carthage owed, finally, her overthrow one hundred and forty years before our era.

The city of Carthage at the period of its greatest activity is said to have contained a million of people. At the time of its total destruction by the Romans it numbered seven hundred thousand people. The enormity of this disaster is beyond comprehension. With the Carthaginians died the last effort of the Semitic race to achieve political and commercial greatness as a people.

CHAPTER VIII.

PRIMITIVE CARRIAGE IN THE PAST AND PRESENT COMPARED.

The continuance in our day, in many ancient cities, of primitive methods of transportation, would be inexplicable if we did not remember that in the orient the narrow streets, planned when modern vehicles were unknown, do not permit of the use of such methods of carriage. Transportation there is, consequently, still confined to men and animals. In many cities even animals are prohibited in the streets. In the suburbs of these ancient cities, however, modern vehicles are to be met with in many cases.

In the interior of countries peopled by savages there are no roads, or they are of such a nature as not to permit of the general use of wheeled vehicles. Consequently, land carriage is still confined to pack animals and human beings. Methods of carriage in vogue to-day in many parts of the world are as crude as in primitive times. Unfortunately we have (for purposes of comparison) but few representations of the vehicles in vogue at the dawn of and immediately preceding the historical period. Those we have show, moreover, only the highest form of transportation known. They are such as the absence of

general and well-preserved highways necessitated. Stoutly built, they served the limited uses to which they were put by the rugged people of that remote age.

On the water, our knowledge of carriage among prehistoric races is still more meager. It is probable, however, that at the time of the Trojan war the only vessel known to the Greeks was the open ship or long boat, without cabin or other convenience, save common benches.

Methods of primitive transportation now in use in savage countries illustrate, without doubt, carriage among prehistoric peoples. Origin and evolution are substantially the same everywhere and in all times. The rude raft of our day, manned by Polynesian savages, whose only clothing is a loin-cloth made from the frayed leaf of the banana, represents the origin of water carriage in every age and quarter of the world. It precedes the raft described by Herodotus. In the same way, the men and women of our time who bear burdens upon their heads or backs, represent the beginnings of land carriage in every country in every age.

The savage kaffir, carrying a letter or package through the wild jungles of Africa, illustrates the beginnings of our postal and express service; the naked blacks of the Congo district, who carry the merchandise of the country back and forth on their heads, illustrate, it is apparent, the beginnings of our freight and baggage

business. It is this that makes reference to the means and progress of carriage in different countries and periods peculiarly interesting.

Notwithstanding the fact that evolution is ever the same, in a general way, it is not literally so. Thus, the chariot of Nausicaa, in which she went, involuntarily, to the rescue of Ulysses, was peculiar. Alcinous speaks of it as a lofty, well-wheeled vehicle, fitted with a covering and drawn by solid-hoofed mules; these were led under the chariot, he says, and thus yoked thereto. As a matter of fact, however, it is probable the steeds were only partly under the vehicle. How otherwise could it have been balanced and guided? Nowhere, except in the Odyssey, have I found a similar vehicle; nowhere a chariot or wagon under which the steeds were yoked, and

if Homer had not in other places made similar reference I should believe it to be a figure of speech merely.

The great variety of primitive methods of transportation would not be believed if it could not be demonstrated. Moreover, in studying methods of carriage in vogue in different parts of the world, their peculiar adaptability to the nature of the traffic and the nature of the country is noticeable. It is also apparent that changes are everywhere accepted with reluctance. New forms are made to adhere outwardly as far as possible to those of the past. This is noticeable in the rigging and sails of vessels, in the accoutrements of animals used as carriers, and in other ways. In many sections of the world no progress whatever has been made in the last four thousand years. Thus, the carriage of women in panniers on the backs of asses, in vogue in certain parts of Asia long before the time of Abraham, is still a common means of conveyance in Bagdad. This is also true of methods of carriage by water. The means of conveyance on the Mesopotamian rivers and their tributaries in the time of Nebuchadnezzar are still popular.

On the vast steppes of Central Asia and in many other districts of that country no change has been made during the historical period—certainly no improvement; the horse, the camel, and the ass are used to-day just as they were forty centuries ago. These patient animals continue to bear the burdens that in more

progressive countries have been, in the main, transferred to wagons and railway cars.

The Ancients, as we call them, constituted a link merely in the chain of evolution. They were the children of mankind. Their imagination supplied lack of experience and reasoning

power. They could not conceive of motion without visible agency, and in looking for this selected that with which they were most familiar. The Greeks, giving free rein to their ever vivid imagination, pictured their gods and mythological heroes as mounted upon magnificent chargers,

or drawn in chariots of surpassing splendor by animals of suitable character and dignity. They believed vehicles to be necessary to the movements of the planets, as in the case of other great burdens. Among their delusions they conceived the moon to be carried round the world upon a car drawn by bulls.

I give a quaint illustration of their conception in this particular direction. Many others equally grotesque might be given.

What I have said in reference to primitive peoples refers, it will have been noticed, only to such as existed *before* Rome commenced her conquest of the world. The immense distance which separates them from us surrounds their acts with a halo of interest impossible in the case of those who succeeded them. They were the principal inventors of transportation, and in this, as in other things accessory thereto, we know that they had the same aims, ambitions, virtues and weaknesses that we have.

In reference to what follows, the portrayals are those of primitive forms of carriage, the bulk of which relates to our own age. The rude forms of to-day faithfully portray the primitive methods of ancient times. In embodying them I depict the common usages of every age. They are exceedingly interesting and, in many cases, of the highest artistic merit. The account which I give of the countries from which these pictures are taken is not intended to be exhaustive, but merely such brief mention as I have space to embody. The legend attached to each picture is also intended to be explanatory and as brief as circumstances will permit.

PRIMITIVE CARRIAGE IN INDIA.

Of modern forms of primitive carriage, those of India undoubtedly surpass all others in picturesqueness. This country is at once the delight and wonder of tourists and scholars. The panorama it presents is incomparable. Side by side with the high-caste Brahmin, and outnumbering him twenty to one, we find a servile population, the aborigines of the peninsula. These conditions have existed from a time far anterior to the historical period. A continent in extent, India presents kindred characteristics. Nowhere are there more towering mountains, vaster rivers, greater deltas, more impenetrable jungles, or fields possessing greater fertility. In one section a temperate climate and hardy men and women; in another a torrid sun and the effeminate population such conditions sometimes breed; in one section a harvest hardly maturing, in another a multiplicity of crops annually.

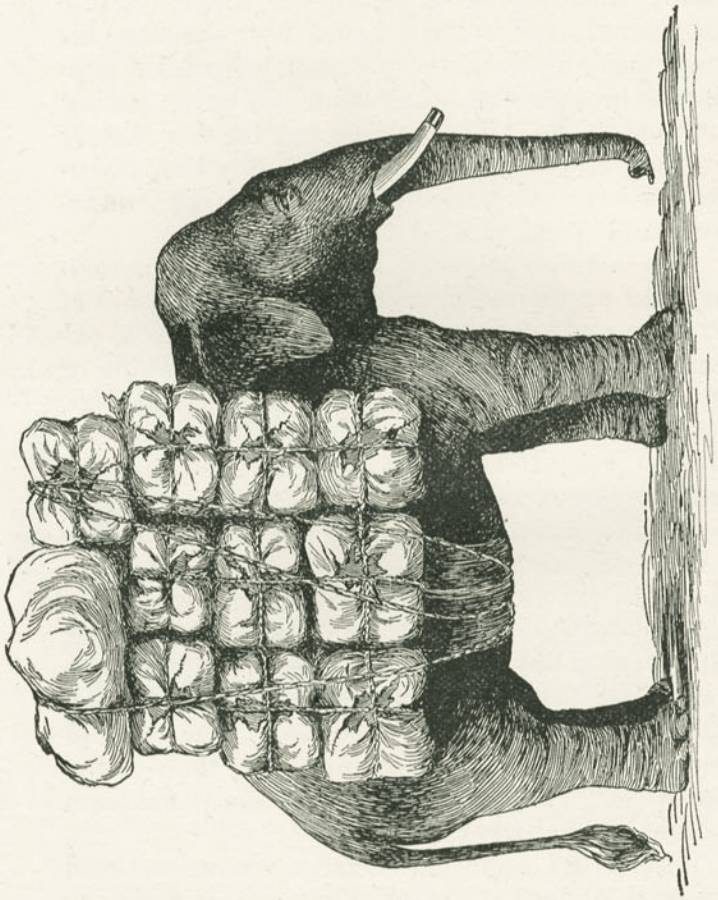
In the long ages that have sleepily passed since men first emerged from savagery many fantastic forms of carriage have been introduced in this picturesque country and are still to be found in active use. They comprise every process, from the half starved and scantily clad native to the modern railway train; from the poorly fed

The elephant has been used as a royal carrier in India from time immemorial. The trappings with which these magnificent animals are adorned by the princes using them as carriers cannot be surpassed in elegance and brilliancy. This picture is one presented to the author of this work by His Highness, the Maharana of Maywar, at Oodeypore, India. He not only furnished the author pictures of current methods, but, dressing up his elephants in the armor and habiliments of a thousand years ago, had pictures taken of that period also. The author takes occasion here to again tender him his respectful and grateful thanks.

donkey to the magnificently accoutered elephant. The stateliness of the last as a carrier adds to the beauty and impressiveness of the scene. While the camel is less known and less striking, his trappings and leonine aspect divide with his ponderous brother our admiration and never ending interest. The Indian ox, famed for his stately carriage and enormous strength, is another favorite. He vies with the horse in popularity, endurance and speed as a carrier.

The vehicles of India are also infinite in variety and primitive quaintness, and the degrees of excellence that intervene between the rude ox-cart of the peasant and the chariot of a king or prince drawn by elephants or stately bullocks, while immeasurable, are yet constantly to be met with. These diversities are the outgrowth of unnumbered centuries of uninterrupted evolution, for while India has been subject to numerous conquests and many conquerors since the invasion of the Aryans, her predominating classes have practically remained unchanged from that time. The water craft of India, while not so diversified as the vehicles used on land, are, nevertheless, interesting and diversified. The boats of India more resemble those of China than of the far West. They are, however, in many respects original and characteristic.

India is an anomaly socially. Invasions and internal strifes have created irreparable divisions among the people. Castes divide them as with a wedge, while the prevailing religions—Buddhism

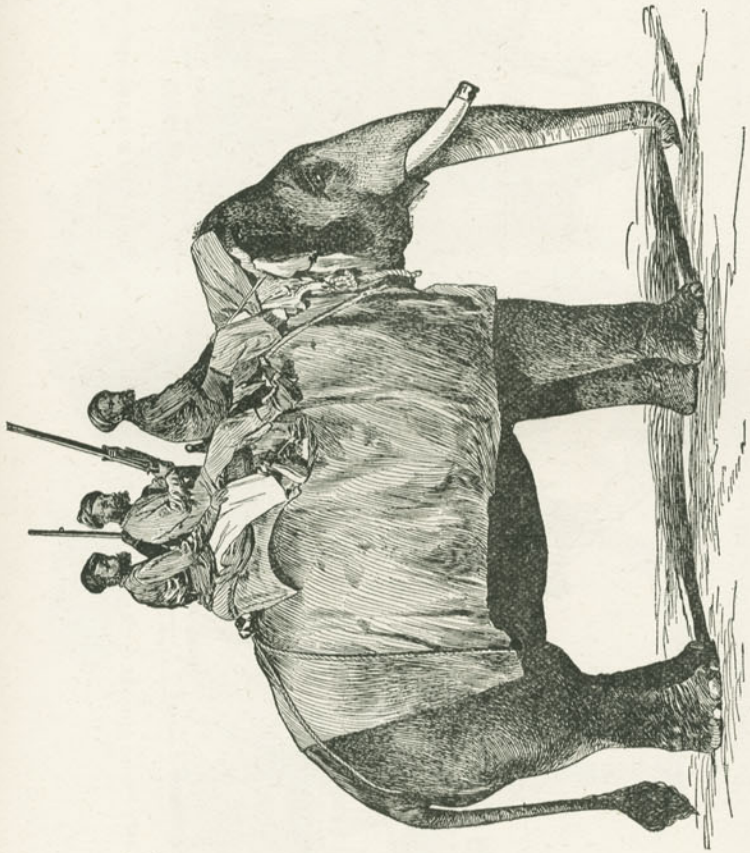


The elephant is utilized in India for the most diverse purposes. In this instance, which represents a primitive stage in the history of the country, he is loaded with merchandise.

and Brahmanism — could not possibly be more antagonistic than they are. It is apparent to the looker-on that before the people of India can act unitedly, social distinctions must be greatly modified, and religious prejudices sensibly ameliorated.

India is a dependency of Great Britain. It embraces an area in the neighborhood of one and a half million square miles, and has a population of some two hundred and fifty millions. The center of the country is a tableland; a plain lies to the east and a stony desert to the west. India occupies the southern extremity of Asia, lying south of the Himalaya Mountains, and borders the Arabian Sea, the Bay of Bengal and the Indian Ocean. It also includes certain adjacent islands under the general term East Indies.

This elephant is used for transporting royalty. At the minute this picture was taken, he is kneeling to receive his load, while the attendant stands ready to aid the ascending passenger.



This picture represents an elephant used in India for hunting and for purposes of war.

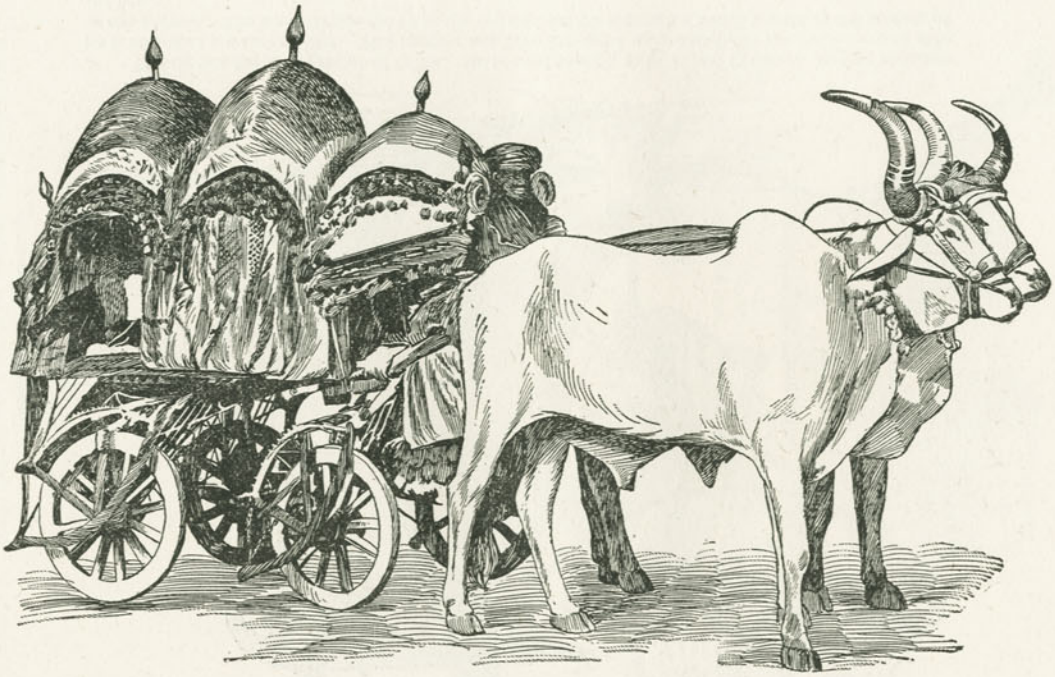
Herein we have varied forms of carriage peculiar to India on festal occasions. The picture is an animated one and in every respect true to life.

While the camel is used in India, it is not so great a favorite as in more northern countries, where the plains are greater and verdure and water more scarce.

The adaptability of the camel for purposes of transportation is quaintly illustrated in this picture. Wherever he is put, whether carrying burdens or drawing a wagon or a plow, we find him equally docile.

A notable character of Bombay making his way through the streets of the city

The ox is a favorite carrier of India. He is used to ride, to haul and to carry. In this instance he is acting as a water carrier. The leather bag is so arranged as to distribute the load on each side of the animal. The water is poured in at the top and drawn through a small nozzle at the bottom of the bag.



A Bhownugger state carriage drawn by sacred oxen. These animals will trot as fast as a horse and maintain such speed uninterruptedly for many hours.

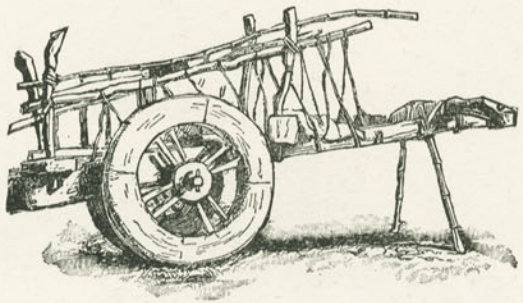
The state car of a rajah of India. Profusion of trappings is a craving of princely dignity in India as it is in every oriental country.

A trafficker on the road to Oodeypore.

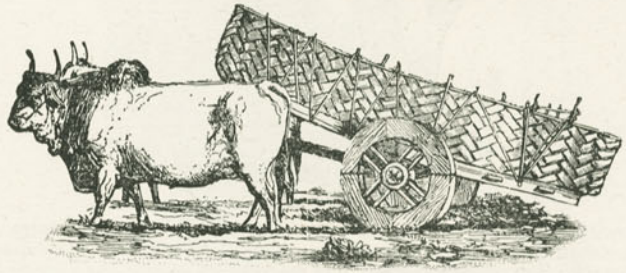
Primitive form of carriage in Baroach.

This picturesque vehicle is used in Bengal for carrying rice, grain and other products.

A party of sight-seers in Bombay.



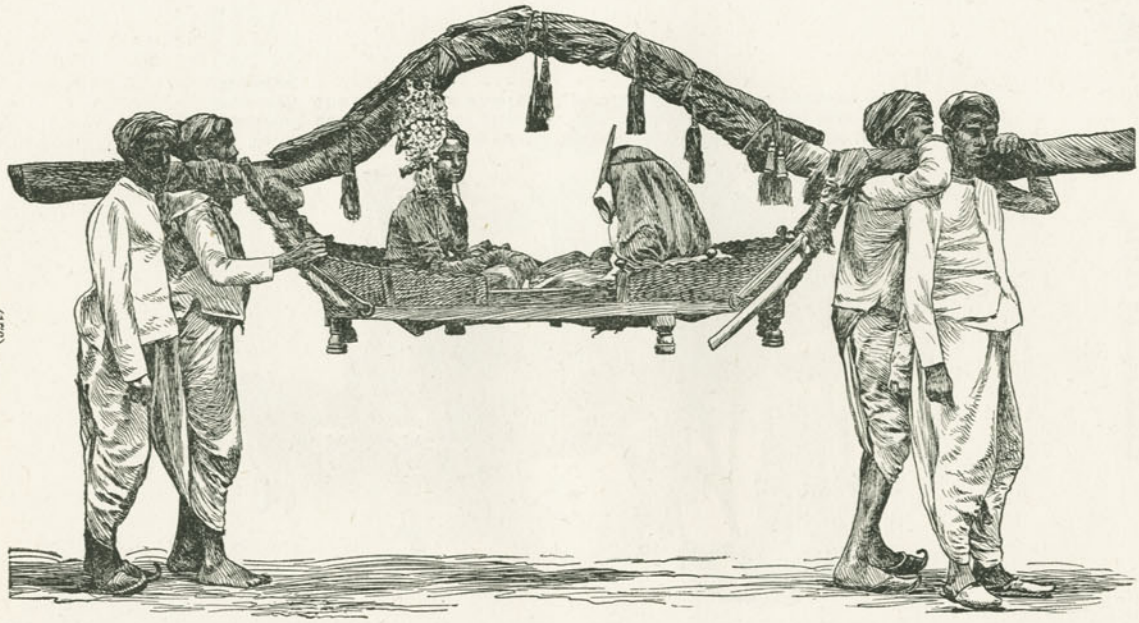
A picturesque farm cart in the Punjab, in the northern part of India.



This Guzerat village cart is one of the most useful vehicles in the agricultural districts of India. The sides are of basket work made from cotton plant stalks. The wheels are made of acacia wood and run in ruts about five inches wide and about the same depth, in which the bullocks also travel.

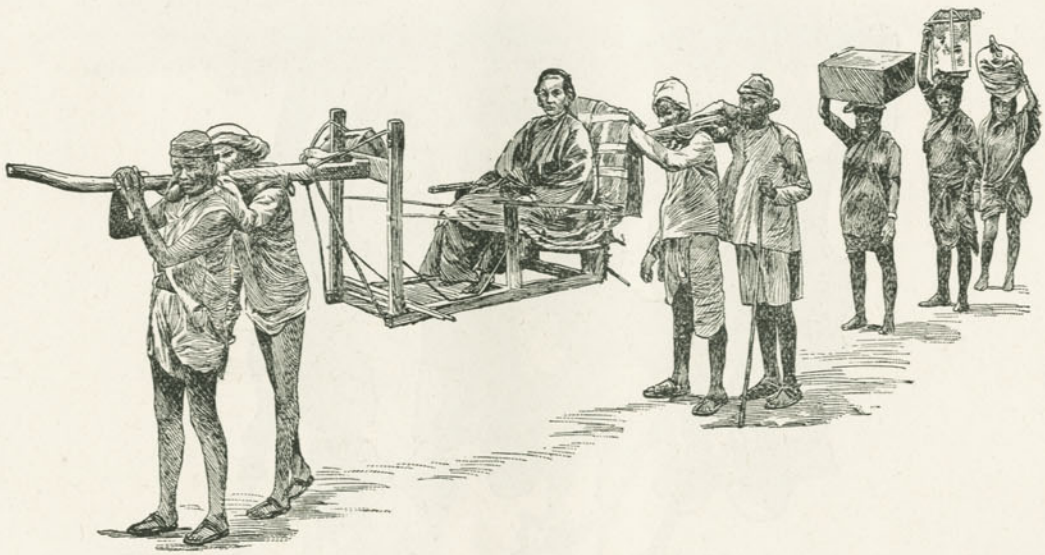
Nobles of Gwalior. The horses of these noblemen are of the highest type, magnificently caparisoned. The umbrellas carried from behind are of delicate yellow silk. The variety and splendor of the costumes possessed by a noble of India exceed those of any other country. The fop, or dude, of England and America is dull and uninteresting beside his Indian brother.

To the people of India this vehicle, with the half-naked driver, is far from interesting and anything but primitive. To us, however, it is an object of curiosity. The cumbersome wheels and peculiar appliances are unknown out of India.



(170)

This represents a form of carriage in Oodeypore in olden times. Its primitive and patriarchal character makes it exceedingly interesting.



(171)

A traveler in Bengal. Primitive methods of this character may still be met with off the great lines of travel in India.

In a particular portion of northern India royalty is carried on the backs of attendant runners, as shown in the above picture. All other modes of conveyance are esteemed plebeian and therefore unworthy.

A fagot gatherer of Ooodeypore. From the collection of the Maharana of Meywar.

A human carrier.

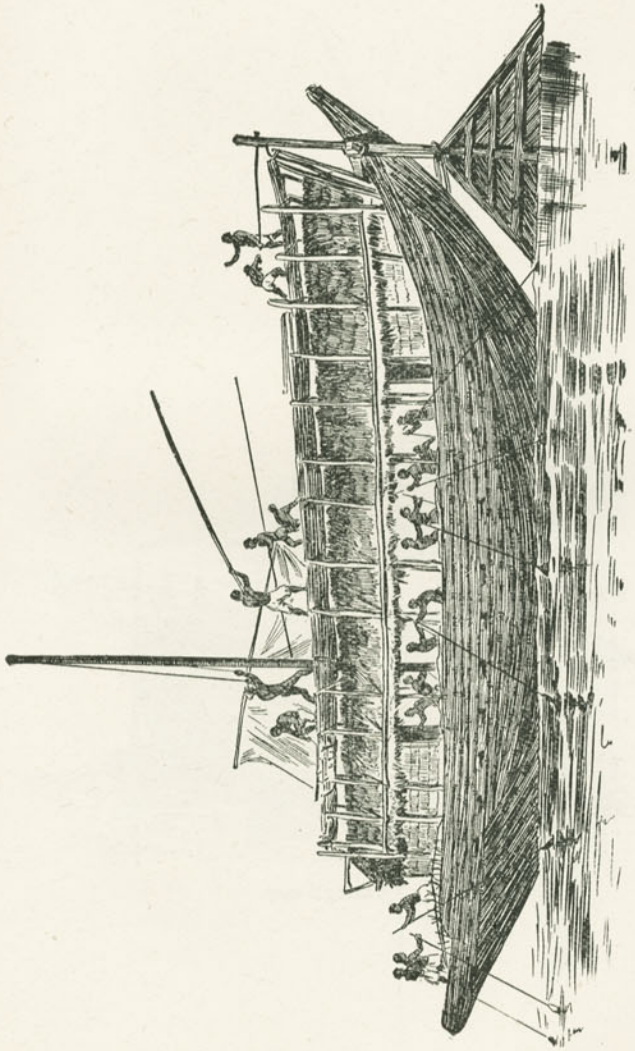
A vendor of water. The customer opens his mouth to receive the stream

Primitive carriage off the coast of India. From such a craft as this the canoe, then the boat, and finally the ship were evolved.

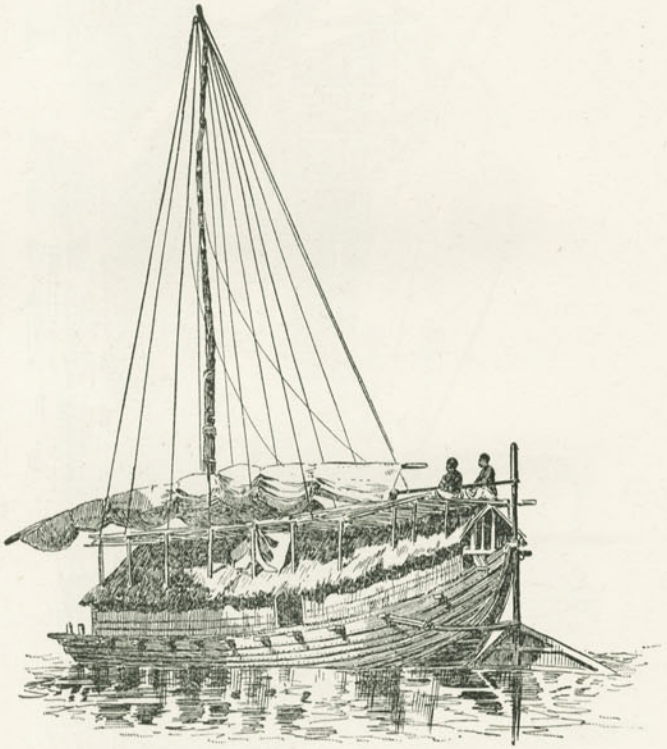
This barge with its retinue of servants and rowers represents the stately progress of a grandee of Kashmir in India.

The reader will not fail to observe the elevated position of the steersman and the frail structure upon which he rests. This official not only acts as steersman, but lookout, the latter office being quite as necessary as the former in the waters of the southeastern seas, where savagery still prevails to a greater or less extent.

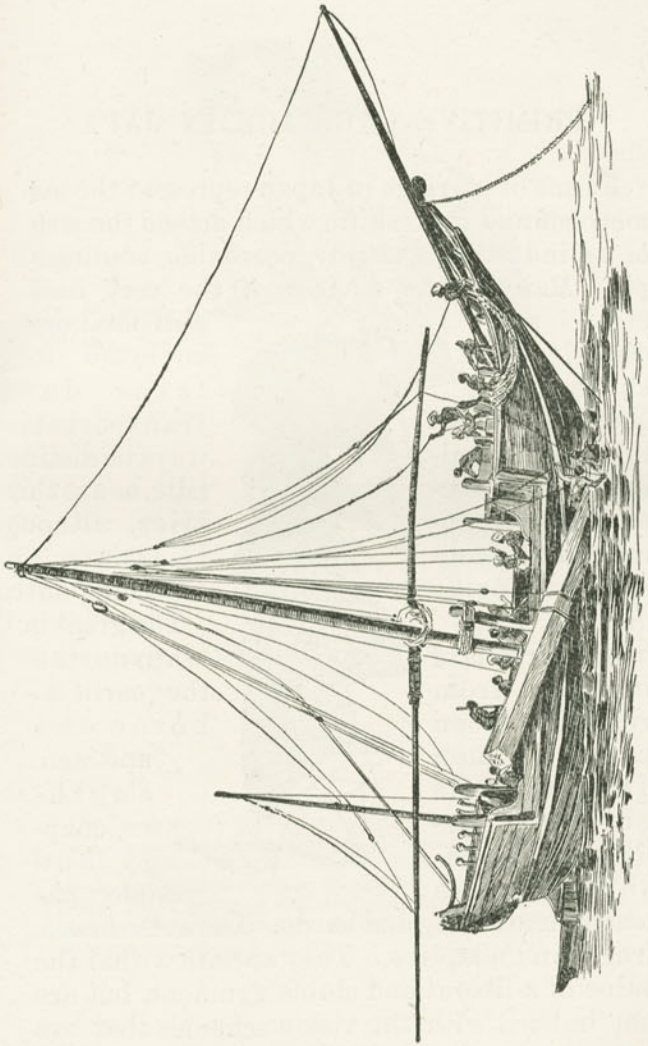
A cumbersome but picturesque craft of Bengal.



Making progress off the coast of Bengal.



Taking it easy.



A timber transport off the Malabar coast. The bow and stern give it the appearance of a caraval of the fifteenth century.

PRIMITIVE CARRIAGE IN JAPAN.

Forms of carriage in Japan represent the varied methods and makeshifts which attend the growth of an industrious, sturdy, peaceable, trading people. Many of the devices of the very earliest times are still used or are directly associated with those of a later date. Methods of transportation in Japan will always be distinctively characteristic, as are those of other countries, although railroads, electric cars and modern forms are being introduced.

The great bulk of the burdens of transportation in Japan from the earliest period has been borne on the backs of men and women. This, with its strengthgiving influences, coupled with the energy and enthrift of the people, has made them strong and hardy. They are also brave, frugal and adaptive. They appreciate withal the value of a liberal and stable government, but are not imbued with the visionary schemes that are

This drawing including those that follow are, in the main, the work of a Japanese artist who undertook to portray for the author such forms of primitive carriage in Japan as would illustrate past and present methods. The above illustration depicts a beggar drawing a cart through the streets seeking alms. It is a peculiarity of this interesting country that the law forbids begging on the streets except on particular days, and then only at the Buddhist temples.

destroying good government in many countries that esteem themselves much farther advanced in civilization. At the present time horses are used more or less in Japan to draw vehicles. Formerly they were employed only to bear burdens. Oxen, that at one time were used to haul loads, are now scarcely used at all. Much less use has been made of animals in connection with carriage in Japan than is the custom in Europe or America. Men and women delight in the hardy exercise and labor of burden bearing. The men of Japan are noted for their courage, strength, dexterity and endurance. They are a nation of athletes. This will seem remarkable to the meat-eating world when told that the majority of the men and women of Japan live on rice, tea, vegetables and fish. The Japanese are both practical and realistic, commercial and esthetical. They are skillful in manufacturing, merchandising and agriculture. Their artistic sense is exquisite. Their cleanliness and industry are especially noticeable. The Japanese possesses a distinctive physical type, and his civilization, religion, literature and language are his own. He has a written history extending over twenty-five hundred years. The emperor traces his ancestry back in unbroken descent for a like period. The patriotism of the Japanese is intense, so great, indeed, as to verge on provincialism. There can be no doubt that Japan is destined to occupy a great place in the future in the history of the far east, and to modify, if not

change, what has been believed to be the destiny of that portion of the world. Japan consists of a chain of islands in the east of Asia, off the coast. It is the Great Britain of the Pacific geographically. It is bounded on the west by the Strait of Corea and the Sea of Japan, and surrounded on the other sides by the Pacific Ocean. It is one of the oldest countries in the world, and contains some forty millions of people. The area of Japan covers nearly one hundred and fifty-six thousand square miles.

There is something peculiarly attractive in the Japanese art. The above picture illustrates this. While it represents a low form of labor, the vending of kindling wood, the costume and grouping of the picture make it exceedingly artistic.

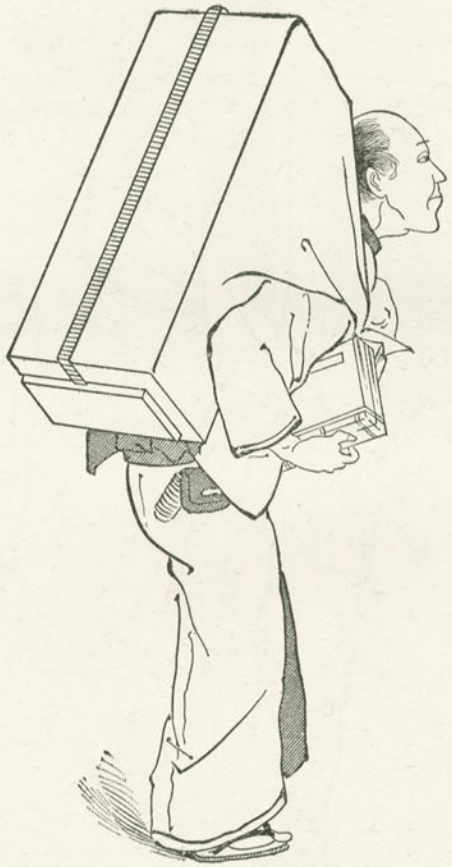
This picture represents a Japanese nurse girl with her charge. In Japan young girls are systematically trained to bear burdens in this way. Indeed, everything that is done in Japan may be said to be systematic. Crudeness is usually characteristic of a new and untrained people, and the Japanese are very old and very carefully trained.

A merchant carrier pushing forward with his load.

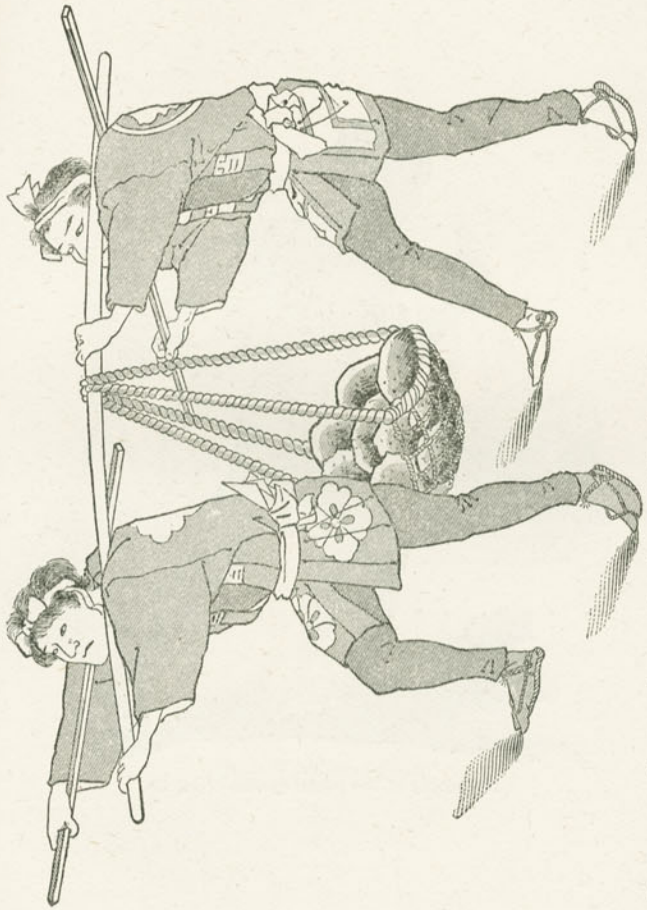
While this picture is drawn with a free hand, as are all Japanese sketches, it represents a Hercules in strength.

This forlorn individual represents a begging friar who goes about ringing a bell, stopping from time to time to show the idols he carries in the case on his back. He solicits alms for food and to help him on his pilgrimage. In some instances his face is covered to protect it from the weather. Noted criminals, it is said, have been discovered wearing the costume and acting the role of a begging friar.

A white wine vendor. This wine is sold on the streets of Japanese cities only at certain seasons of the year.



A perambulating library and librarian. Books distributed in this manner are called for or exchanged a few days after delivery at a nominal cost to the reader

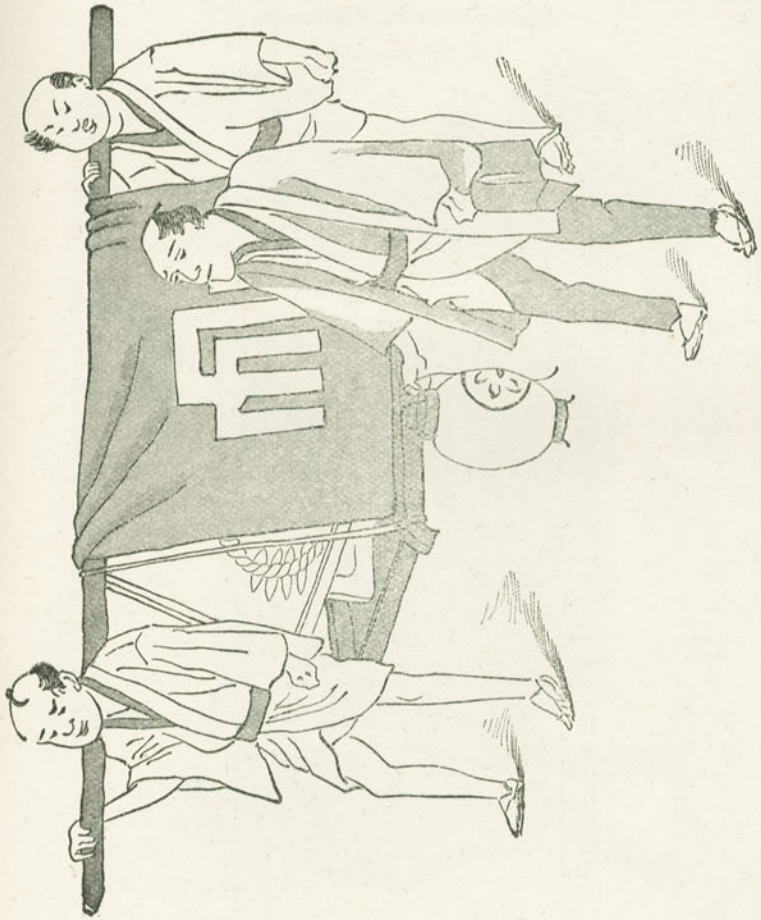


Japanese coolies or porters carrying stone. Their costumes bear the trade-marks of their employers.

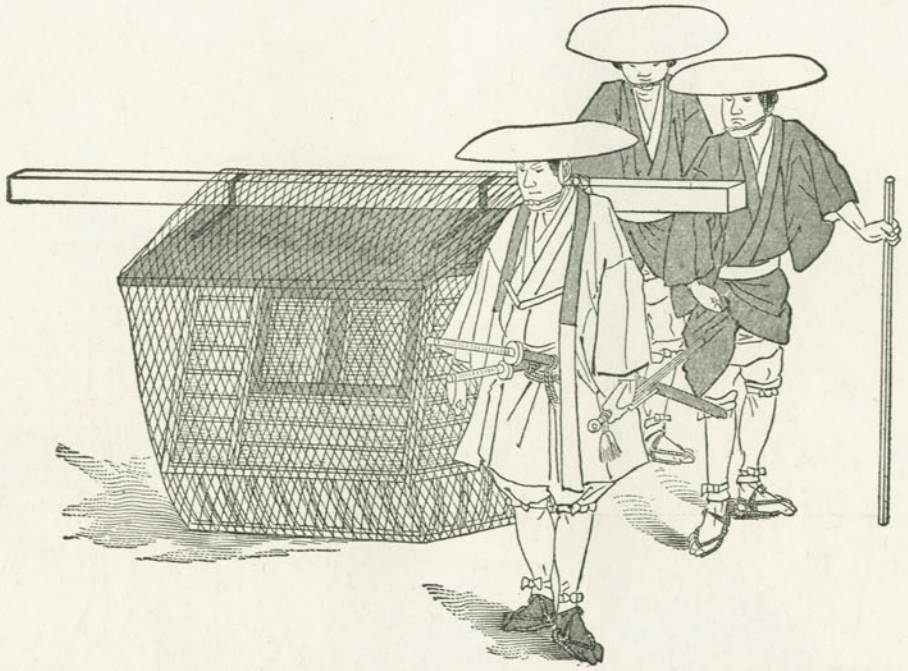
Beginning of the postal system in Japan.

A vendor of kindling wood.

A doctor's attendant with his medicine chest.

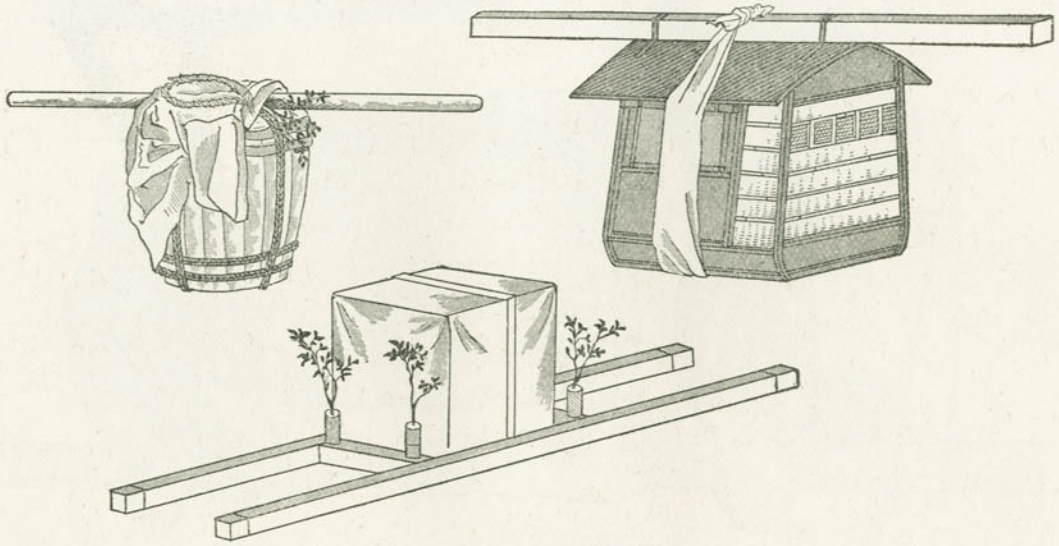


Method of carrying marriage gifts in olden times. It is still practiced in Japan, where there is a desire to cling to old customs. Ten or twelve of these litters filled with gifts are sometimes exchanged between the families of the bride and groom. This is done during the evening, the way being lighted by a Japanese lantern. The family emblem is emblazoned on the side of the litter.

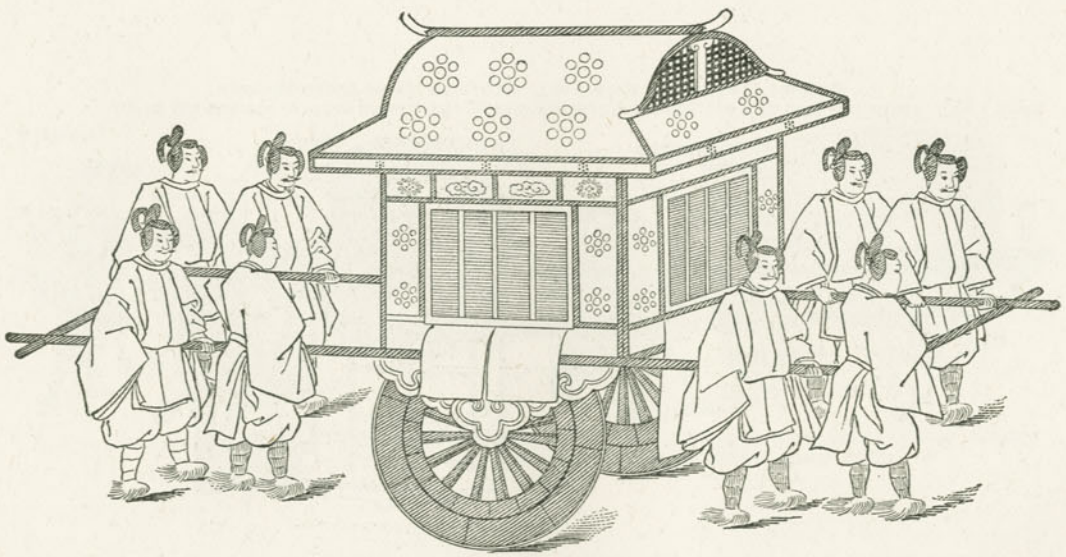


Litter covered with woven wire, formerly used in the city of Tokyo for carrying criminals from a lower to a higher court. An official stands in front of the litter.

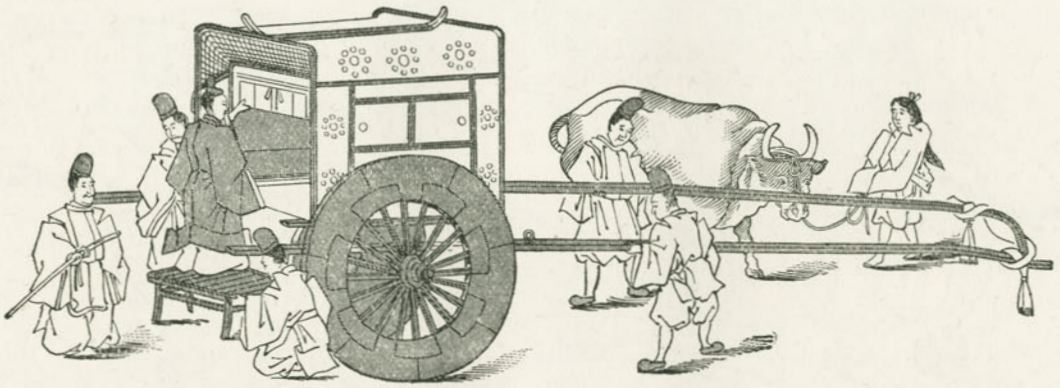
This picturesque engraving represents a litter used by the common people or middle class of Japan.



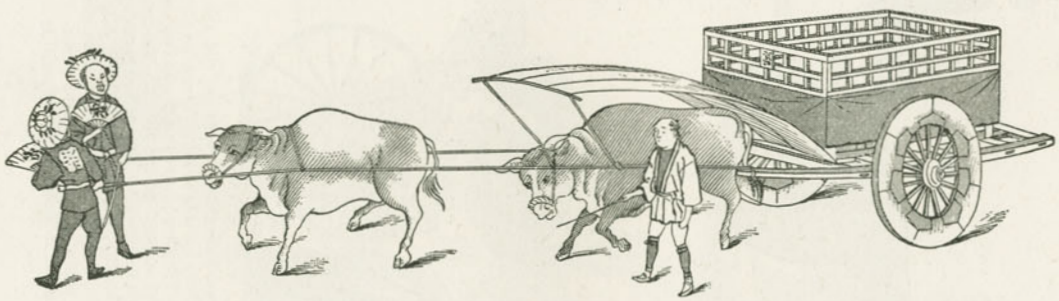
A group of coffins, and how they are carried. The corpse is placed in a sitting posture, according to a Buddhist rite. The barrel-shaped receptacle is used by very poor people; the others by the better classes.



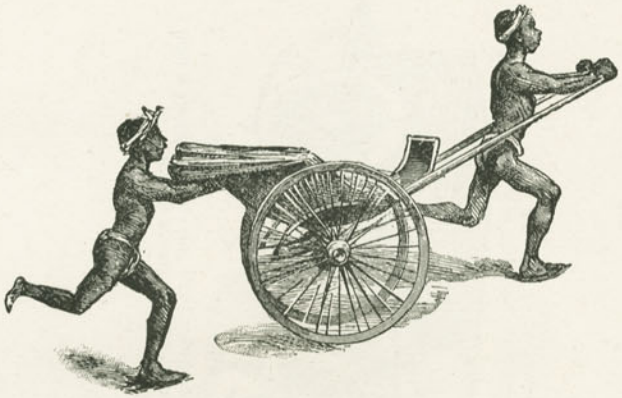
An ancient chariot of the emperor of Japan.



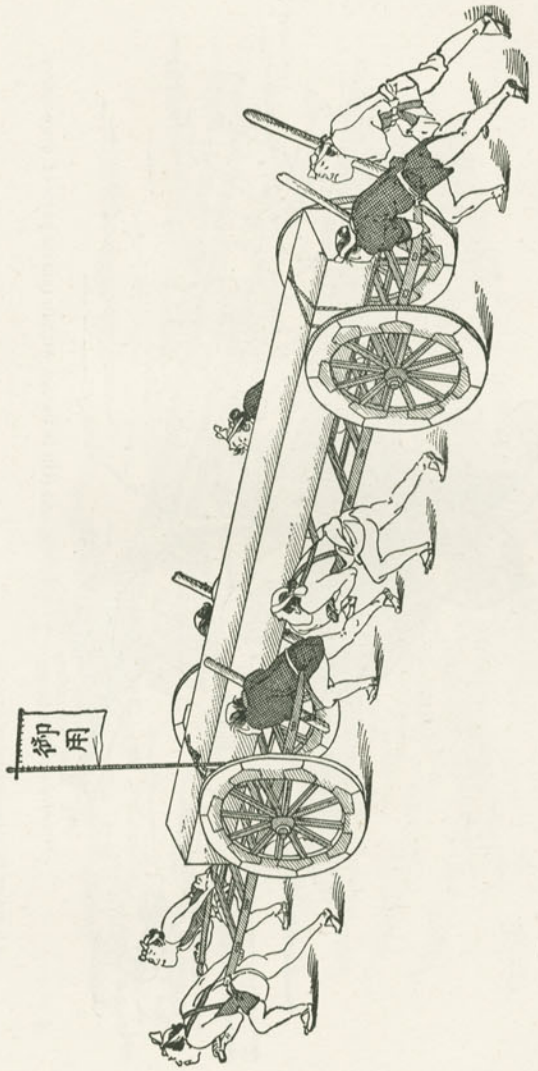
A conveyance of the emperor in olden times. The vehicle was highly ornamented with gold and silver The wheels, while apparently heavy, were light. The vehicle was drawn by bullocks



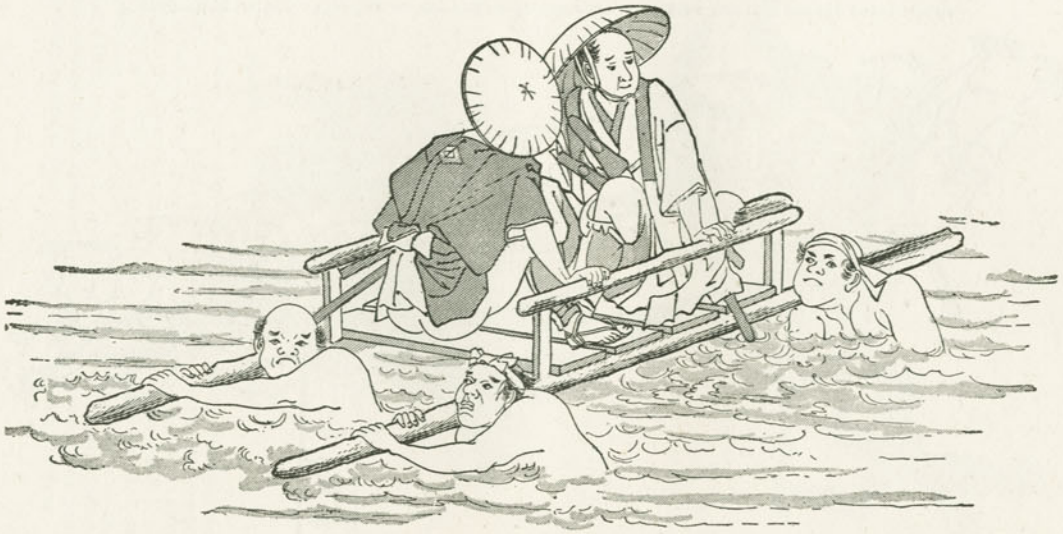
This form of vehicle is used at Japanese festivals, oftentimes platforms being built one above another, a figure surmounting the whole representing some historical person, god, or genius of fun.



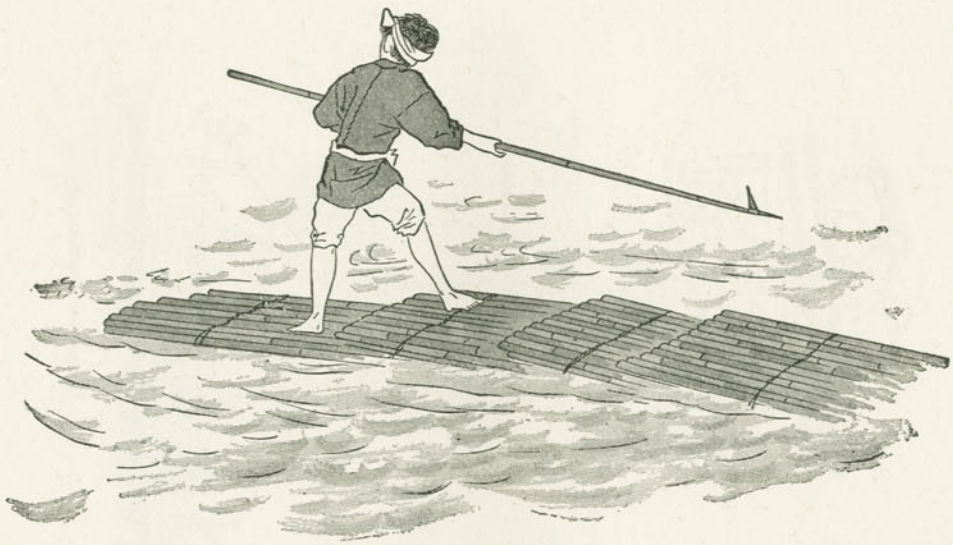
The jin-riki-shas, portrayed on this page, afford the principal means of transportation in Japan. There are said to be ten thousand jin-riki-shas in use in the city of Tokyo alone. They are hauled and pushed by men. This hardy exercise adds to the vigor and strength of the people. The heat in some parts of Japan is intense. When it becomes oppressive the coolies throw off their clothes with easy conventionality, substituting therefor a loin cloth, straw sandals and a light, airy hat. In rainy weather the inhabitants protect themselves with over-garments made of straw or oiled paper. The quality of paper, however, is almost equal in strength and durability to linen.



Transporting timber. The flag on the wagon, in this case, indicates that it is for the government.

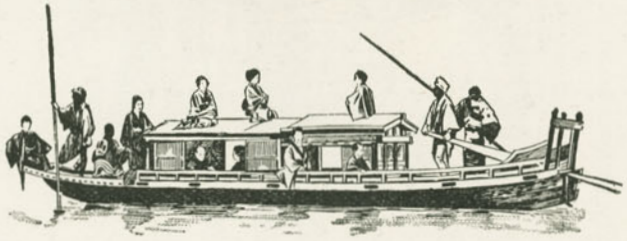


A unique form of ferriage common in early days in Japan, and still to be met with in remote parts of the country.



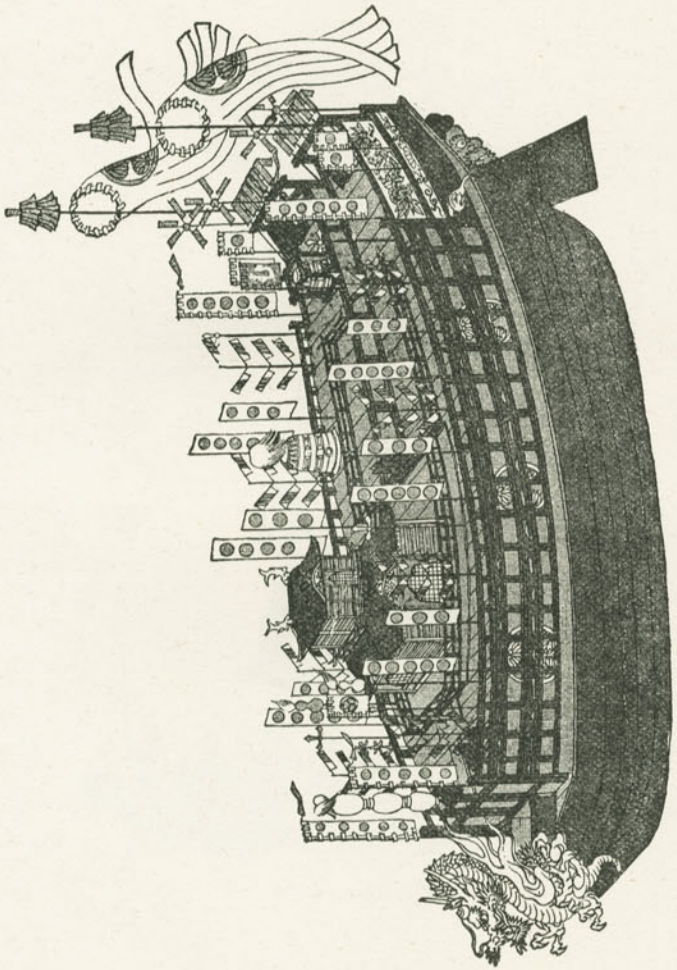
A Japanese raft.

A free sketch of a picnic boat.



A Japanese pleasure party.

Lying off the coast of Japan.



A Japanese man-of-war of the sixteenth century. The flags at the stern are ensigns of the feudal lord in charge. The boat is decorated inside and out. Craft of this character were limited in size according to the rank of the lord. One or two cannons were carried on board, but most of the fighting was done with swords.

A war junk of the olden time. The sail bears the emblem of the chief or lord.

The Japanese are a highly imaginative people and have their mythological heroes, just as the Greeks would have had, doubtless, to-day could they have maintained an uninterrupted life as the Japanese have been able to do. It does not require any stretch of imagination upon the part of the people of Japan to believe that one of their gods is carried from place to place on the back of a crane. They have a legend that the founder of the ancient capital and holy city of Nara visited the site, before locating, on the back of a deer, and, respecting this tradition, these animals are not molested by local residents. The Japanese God of Age, shown above, is one of their seven Gods of Fortune, his especial gift being long life. He is conveyed over the world on the back of a crane (a sacred bird in Japan), thought to live a thousand years. The Japanese account of the creation quite rivals the Grecian in beauty. According to it Izanagi and Izanami, the first man and woman, stood together on a floating bridge in the high heavens. Izanagi, drawing his jeweled falchion or spear, plunged it into the unstable waters beneath and, withdrawing it, the drops of water that trickled from its glistening point formed an island, upon which they descended. This island was Japan.

PRIMITIVE CARRIAGE IN AFRICA.

The customs of the people of Interior Africa, where savagery still reigns, are those of our ancestors after they had acquired a limited vocabulary but were still governed by the strongest; when might ruled and the chief of the horde consulted his own passions and pleasures without reference to the comfort or rights of the community. Methods of carriage in interior or savage Africa are wholly primitive; upon the water, rafts or primitive vessels hollowed out of logs; on land slaves and women perform the work. The distinction between the wife and the slave is very slight, as it is with all savage people. Africa may be said to present carriage in its formative state—the germ of transportation, in fact. Animals are not used, and mechanical contrivances are unknown. The intrusion of civilized men is rapidly changing this, and thus methods seem likely to leap, at one bound, from those of the primitive savage to those of the highest culture; from the burden-bearing period of slaves and dependent women to the age of steam locomotives and electric railways. Thus will be accomplished in a century what would have required unnumbered ages through natural processes. The association of the rude appliances of savages with the methods of civilization

in Africa, presents a confusing array. To see naked men and women drawing a modern carriage filled with civilized people is incongruous. The vehicle strikes a discordant note and shatters all thought of the picturesque. Make-shifts govern carriage in Interior Africa as in other new countries. The absence of roads, the impassable nature of the country, the savagery of the inhabitants, and the absence of depots of supply, coupled with other obstacles, render transportation difficult and oftentimes dangerous. Africa, fostered by the great countries of Europe, which in the main control its territory, is rapidly

Carriage in Savage Africa.

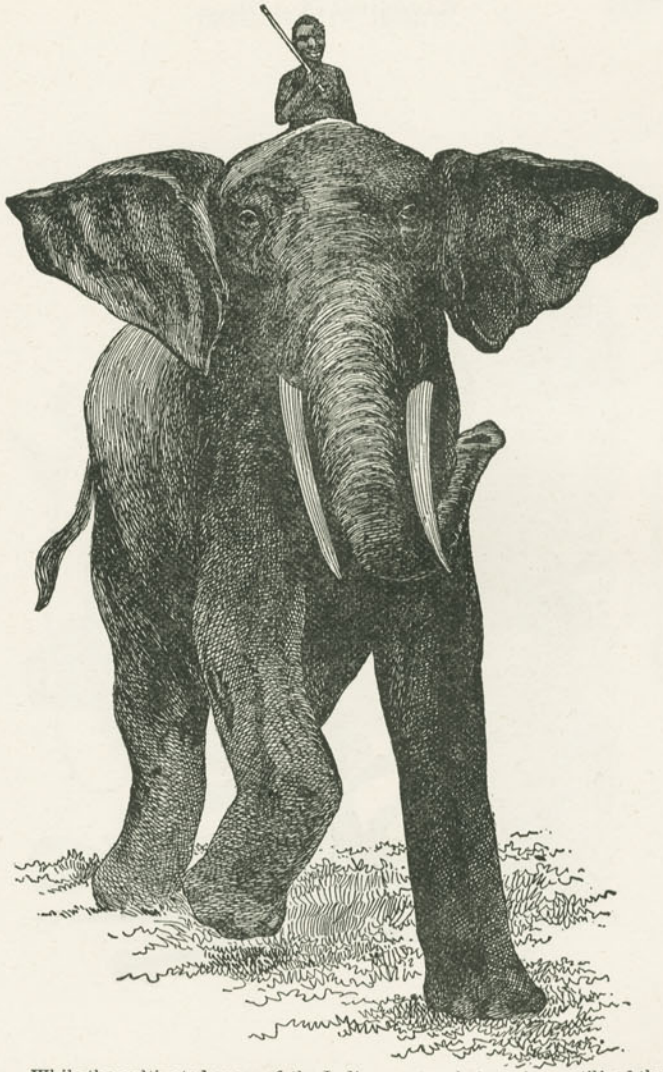
acquiring inter-communication by means of railroads and otherwise, and it will be but a short time before we shall be able to traverse the continent without changing cars, as in America. Where mails a few years ago were unknown, or were carried by naked savages or armed escorts, well-equipped railways in many cases are already in operation. Many of the quaint methods of carriage illustrated in this book have long been replaced by ultra-nineteenth century devices. But the savage man and woman here pictured have lost no portion of their interest as illustrations of primitive carriage.

The African continent is a peninsula connected with Asia by the Isthmus of Suez. It lies almost wholly within the Torrid zone. Its interior is a vast tableland having an elevation of some four thousand feet above the level of the sea. The country has no great navigable rivers except the Nile in the northeast, emptying into the Mediterranean; the Niger in the west, and the Congo in the southwest. The Zambesi, a river in the southeast, is navigable only a short distance because of its cataracts. Africa contains about eleven and one-half millions of square miles. Its greatest length is about five thousand miles, and its greatest breadth nearly four thousand eight hundred miles. The Sahara, the largest desert in the world, occupies its northern border, a fringe of arable land, only, separating it from the Mediterranean. The continent is bounded on the north by the Mediterranean Sea, on the

west by the Atlantic, on the south by the Southern Sea, and on the east by the Indian Ocean and Red Sea. The illustrations refer only to

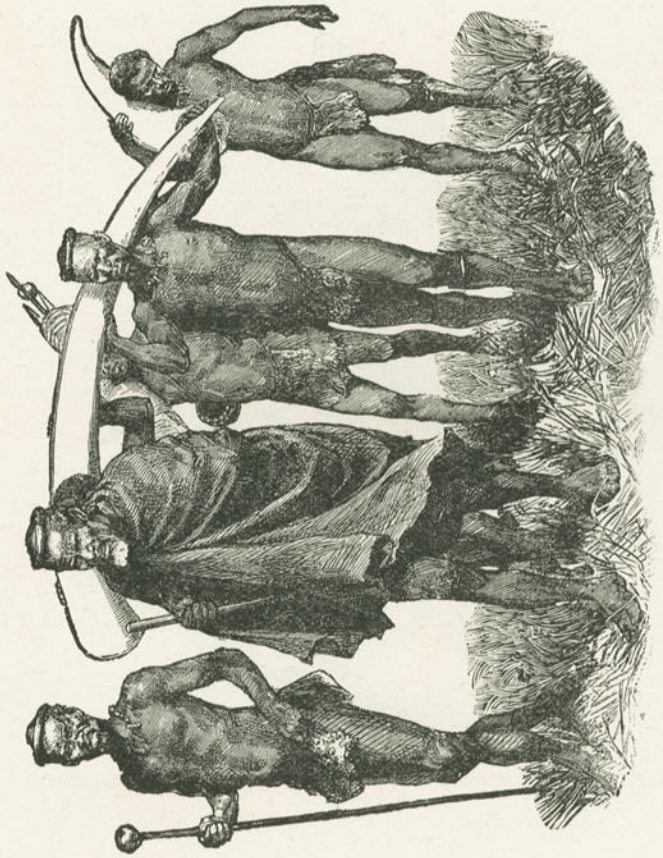
The first carriers.

Central Africa and the southern, southwestern and southeastern parts of the country, including Abyssinia. That part embraced in Egypt, Algiers, Morocco and Tunis is referred to elsewhere.



While the cultivated races of the Indian peninsula have long utilized the elephant, the savages of Central Africa have, except in infrequent and isolated instances, made no attempt whatever to tame and utilize this noble animal. They have, however, known the commercial value of his tusks, and to obtain these have been in the habit of hunting him in his habitat in the vast jungles of the interior for many centuries.

The above picture represents a native water carrier of the Soudan, the country of the blacks.



Carriage in interior Africa.

A primitive postal agent, armed and bearing aloft the missive with which he is intrusted.

Natives drawing a coach containing travelers in the Ashantee country

Natives of the Soudan leaving their homes for a place of safety in time of war.

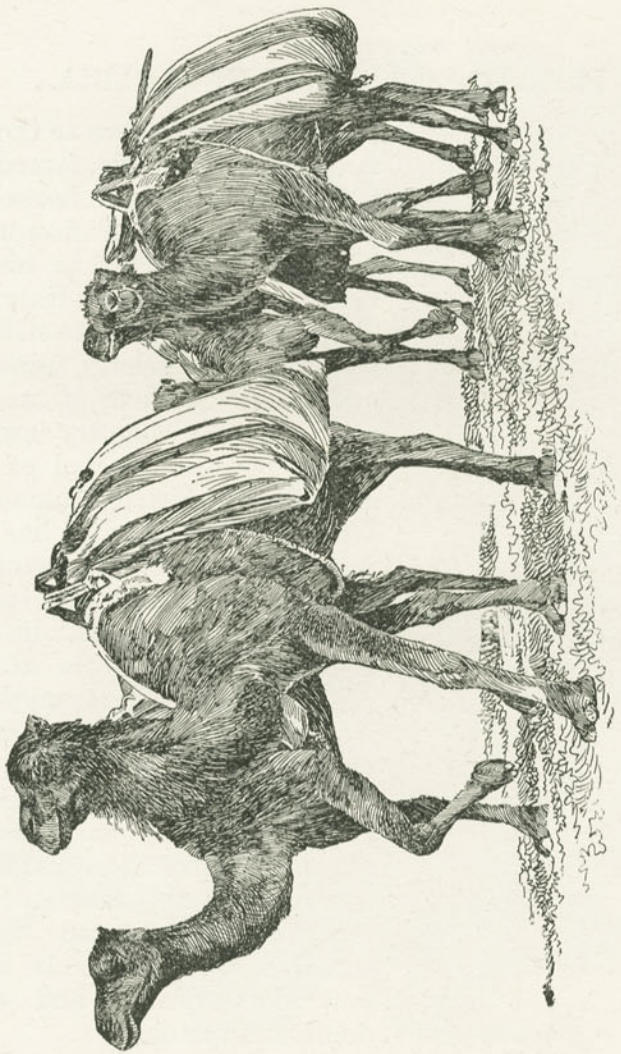
Crossing a river in West Africa.

Off the coast of Cape Verde.

Primitive form of carriage off Cape Coast Castle

PRIMITIVE CARRIAGE IN ALGERIA.

Algeria was known to the ancients as Numidia, famed for its magnificent horsemen, the stay and flower of Hannibal's army in his invasion of Spain and Italy. The Algerian horses are still noted for their beauty, spirit and vigor. Methods of carriage in this country are highly picturesque and exceedingly primitive. Human beings bear, largely, its burdens, as they do wherever primitive mankind are industrious and vigorous. But the camel and mule are prime factors. The strength and adaptability of the latter make it useful here as elsewhere. The camel is indispensable. It is said the Great Desert of Sahara was never traversed by man until the Arabs introduced the camel into Algeria. It is now domesticated and a dominant factor.



Caravan crossing the Great Desert of Sahara.

The history of Algeria for the last twenty-five hundred years is well known. Yet, notwithstanding this long period and the close proximity of the country to the high civilization of Europe, it still retains largely the customs of the earlier historical period. Algeria affords a fine field for studying the genesis of transportation and the habits of primitive people. Its mixed population of Berbers, Numidians, Saracens, Jews, Caucasians and Negroes presents a varied and indescribable panorama of the human race hardly to be found in any other quarter of the world. Algeria is a French colony in the north of Africa borderdering on the Mediterranean sea, having an estimated area of about one hundred eighty-four and a half thousand square miles, and a population of about four millions. The native inhabitants are non-nomadic and, in the main, agriculturists. The active construction of railroads is encouraged, both for military and commercial reasons.

Trader en route to the Soudan. This interesting country lies immediately south of the Great Desert and extends quite across the continent.

Characteristic street scene in Oran, Algeria.

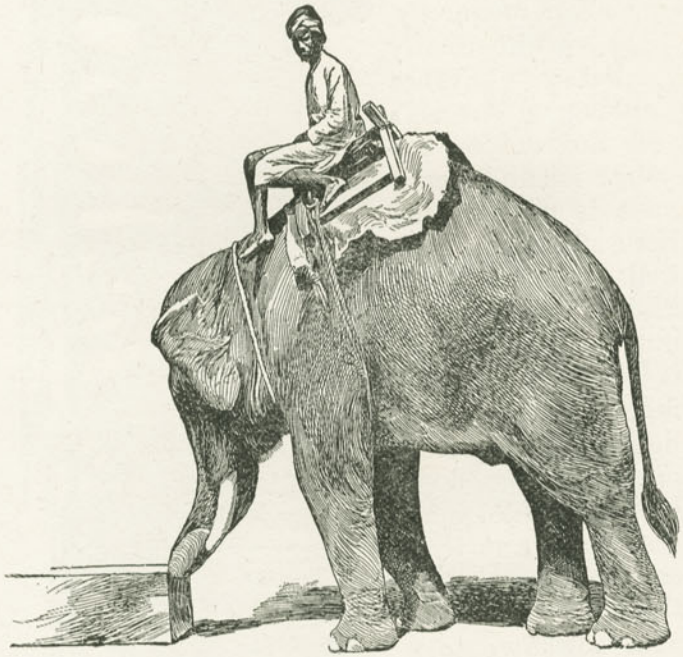
A trafficker from the country on his way to market in the city of Algiers

PRIMITIVE CARRIAGE IN BURMAH AND SIAM.

In the great forests of Burmah the rhinoceros, tiger, leopard and elephant still abound. The elephant is captured and tamed very much as the wild horse of South America is caught and domesticated, except that a corral instead of a lasso is used. The people of Burmah are Buddhists with Mongolian characteristics. Their color is dark brown. Agriculturists, they are said to raise one hundred different kinds of rice. It is indigenous, as is also indigo. For draft animals they use the ox; for agriculture the buffalo. They have a small horse for riding. Formerly the elephants were reserved exclusively for the king's use. This restriction no longer exists. The camel is unknown in Burmah, and the ass rare. Until recently Burmah was an intolerable despotism. This the British in absorbing the country have happily overthrown. The habits of the people are primitive, notwithstanding the great age of the country. Trade is fostered by fairs in connection with religious festivals, as in the first dawn of history in the West. The vehicles on both land and water are ingenious and picturesque. In the upper country pack animals are much used.

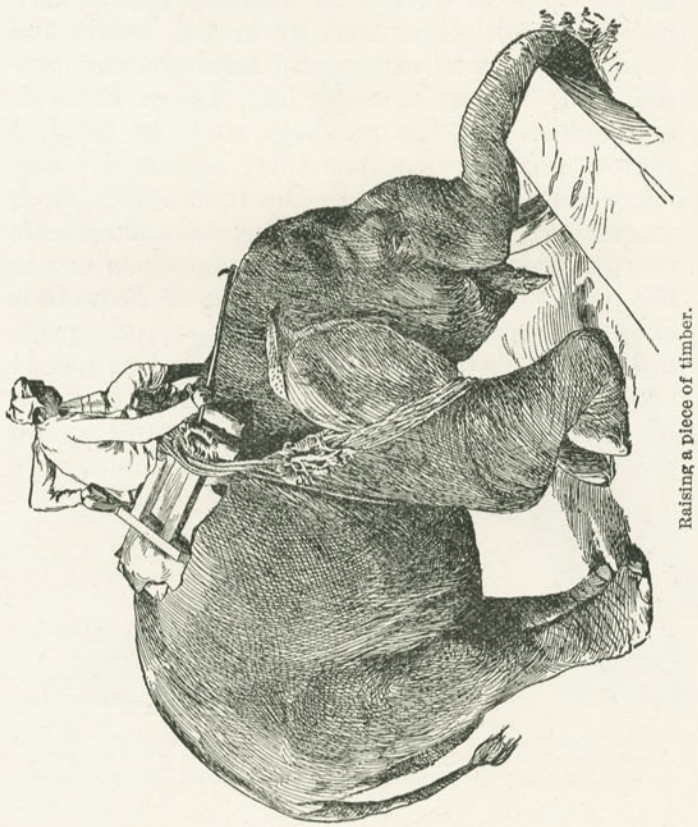
Utilization of the elephant in Rangoon, Burmah.

Burmah and Siam lie side by side in the extreme southeastern corner of Asia. Siam is an independent monarchy, or, at least nominally so, but with France pressing on one side and England on the other its independence is oftentimes little more than nominal. While Burmah and Siam are very much alike the latter is the more interesting; it is more enlightened, the result of greater freedom. In the north of Siam vast caravans traverse the country in the trade carried on with southwestern China. A picturesque feature of the middle and southern country is the elephants that are kept in villages for hire, very much as we keep horses. The people of Siam are of



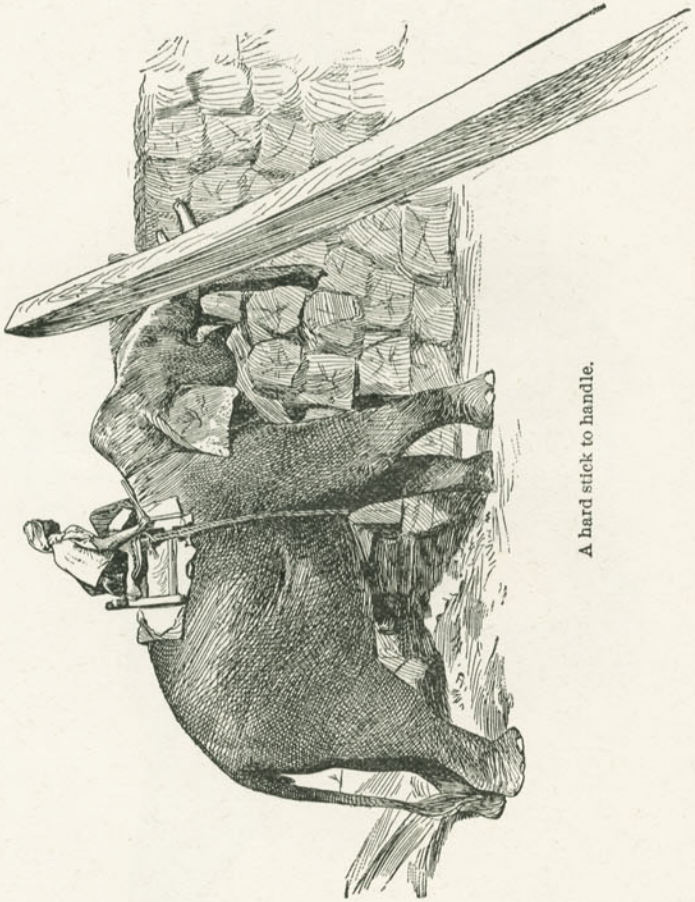
The docility, great strength and intelligence of the elephant render it extremely useful in the handling of heavy burdens. In Burmah he has been taught to classify and handle lumber with the intelligence of a human being.

mixed race, hospitable, mild, patient, submissive and easy-going. They are, withal, musical. In In their religion they are Buddhists, but it is mixed up with a belief in uncanny spirits, divination, propitiation, trial by ordeal, magic and other delusions of savage and semi-civilized people. The climate of Siam, like that of Burmah, is tropical and the products such as tropical regions produce. In no country is primitive carriage more picturesque or the inhabitants more interesting. Their olive complexions and esthetic costumes make the picture a harmonious one to the people of the north. The area of Burmah is about two hundred and eleven thousand square miles, and its population is estimated at nearly eight millions. The area of Siam is, approximately, two hundred and fifty thousand square miles, and its population about six millions.



Raising a piece of timber.

Piling timber.

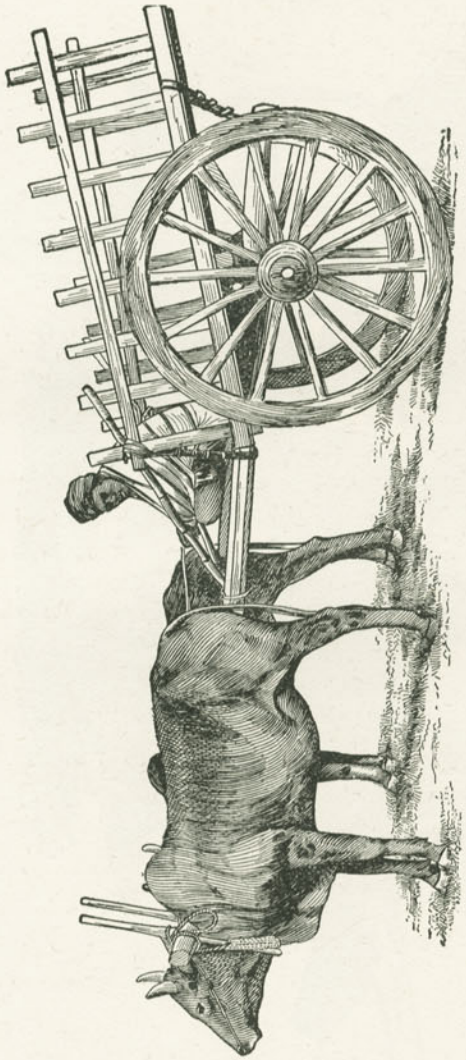


A hard stick to handle.

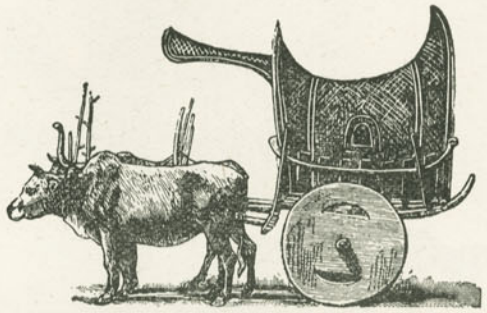
At last.

In the mountains of Burmah. Observe the paniers of wicker work and the peculiar method of fastening them to the back of the ox.

Burmese cart. The wheels are like those of many primitive vehicles of other countries, but the formation of the box or rack is a feature peculiar to Burmah.

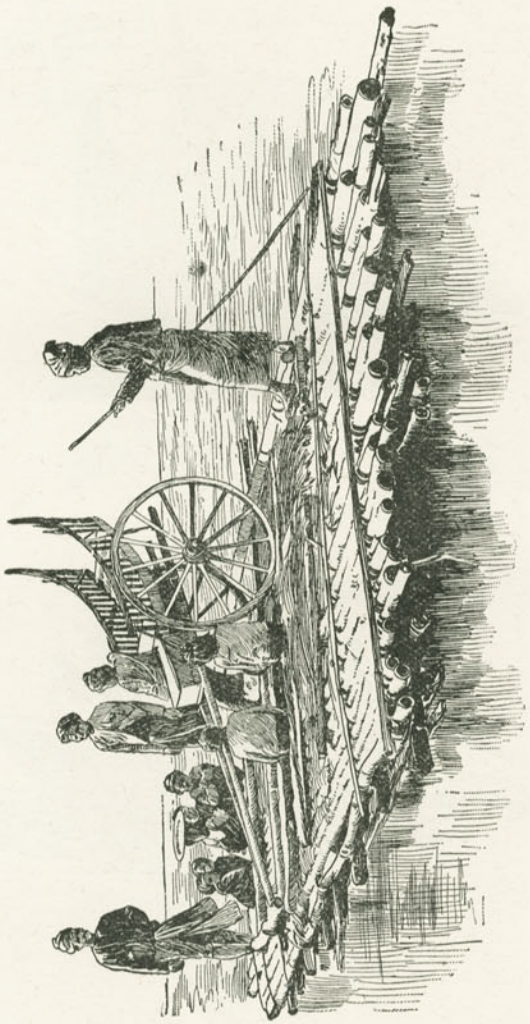


A Burmese outfit.



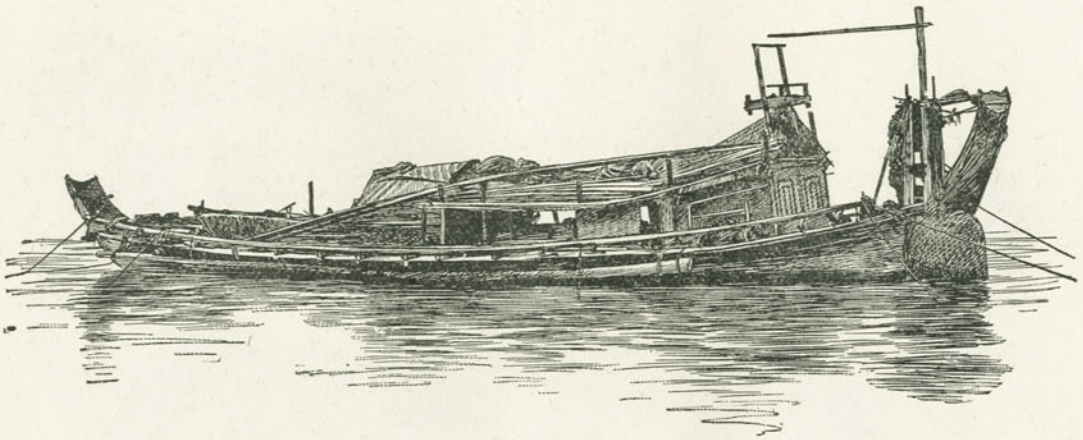
A Mandalay hack.

A Siamese water craft.

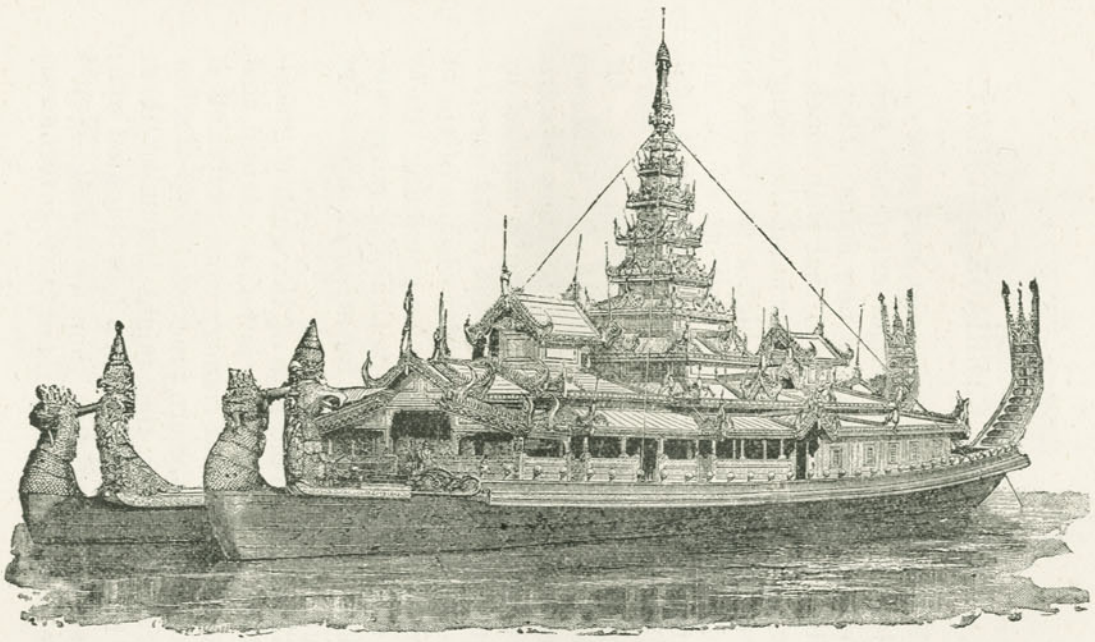


Bamboo raft used for ferriage on the Irrawaddy River at Rangoon, Burmah.

Passing the rapids on the Sitang River, Burmah.



A Burmese freight boat.



State barge of the King of Burmah. Enormous sums of money have been spent in past times by the Burmese kings in furnishing and decorating crafts of this character.

PRIMITIVE CARRIAGE IN CHINA.

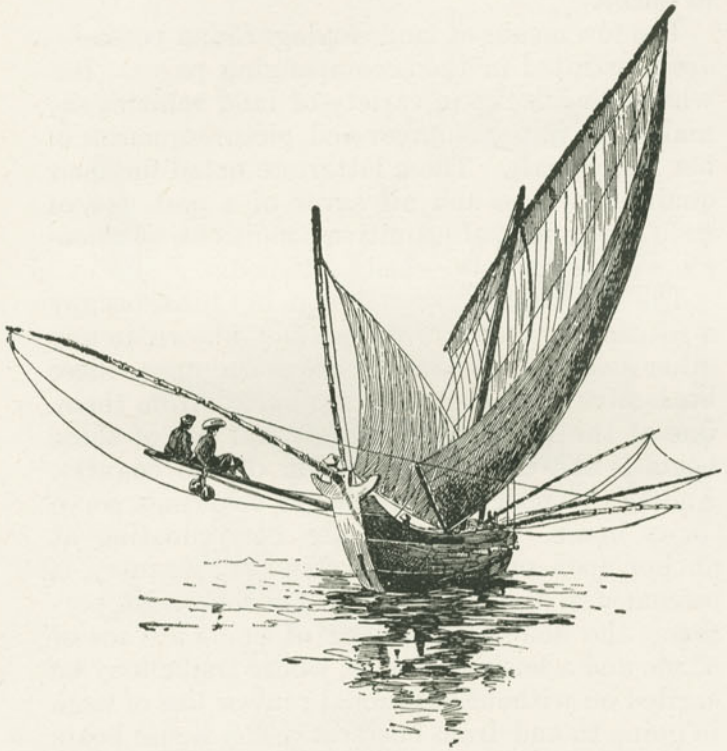
When, with advancing age, men grow cold and calculating, they no longer enter into new ventures or seek to explore new fields. They cling with stubborn tenacity to that with which they are familiar. On the other hand, the young continually speculate upon higher and better conditions and hail every change as an advantage, without stopping to scrutinize what is likely to follow in its train. The old man is in the main right. Experience has made him wise. Of all men he alone can estimate the unknown in human affairs. But when it comes to a trial of strength, as it always does, he is worsted by his younger brother, and this the world accepts as a justification of the superior wisdom of the latter and his greater capacity for governing. Here, as in every instance in practical life, energy is mistaken by the crowd for wisdom; assurance for knowledge.

China is the old man of the world—the grandfather of nations. It is not at all certain that the people of that country would be better off if they adopted western practices. Instead of a few corrupt officials, they might then number them by thousands; instead of a few discontented sons, they might number them by millions. Would the ballot, so-called representative government,

A recent visitor mentions having traveled eight hundred miles in China without seeing a vehicle. The roads were oftentimes, however, crowded with men and women carrying burdens, particular kinds of merchandise going one way and other kinds going another. He also speaks of carts which he saw, with solid octagon or oval wheels, two and a half inches thick, drawn by oxen.

electric cars, railways and telephones, compensate for this? The highways of China and its methods of carriage represent the pervading spirit. Roads are few and poorly maintained. To add to their number and to keep them up would increase taxes, and the people of China require taxes to be small and diminishing, not large and increasing. Here again they differ from their more youthful and virile neighbors.

The streets of the Chinese cities and the great roads of the empire vary from seven to fifteen feet in width. All are rough; all poorly maintained. None of them are uniform. In no great country of the world, perhaps, is the use of draft animals and land vehicles so meager as in China. The different specimens of the latter may be counted on one's fingers. Men and women are the great factors, the great carriers of the country. In the exchange of products between the heart of the kingdom and the distant provinces of the west and Mongolia and Manchooria on the north, the camel is a factor. Vast numbers of these animals are used, and the caravans that traverse the intervening country present a never-ending picture of eastern habits and impassiveness. In some instances these caravans number a thousand animals. Marshalled by the Tartar inhabitants of the border country, they bring the products of the outlying districts, taking back needed things in exchange. The camels of northern and western China differ from those of the Mediterranean country in this, that instead

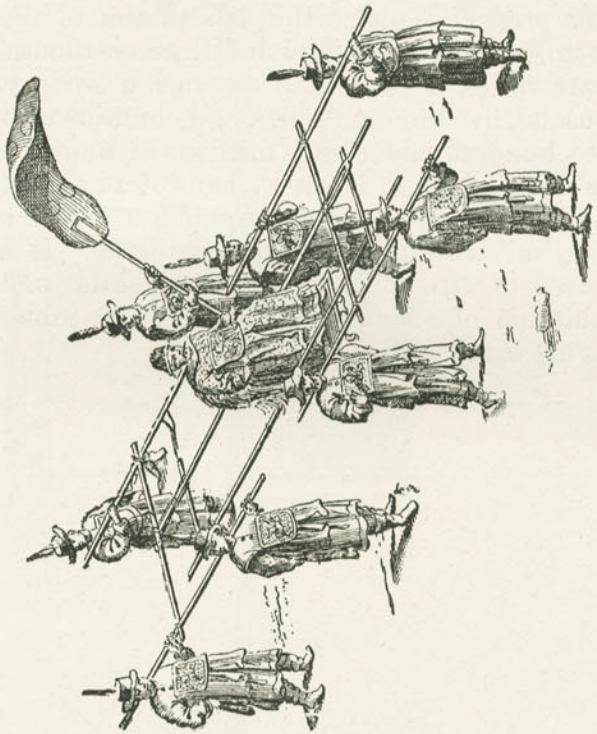


This craft, with its immense sails, requires, like many vessels of the south-eastern seas, a counterpoise. This counterpoise is furnished by an outrigger that skims the surface of the water, or, as in the above case, by a more simple contrivance.

of soft, light hair they have heavy coats of wool to protect them from the extreme cold. This wool is utilized very much as we utilize the wool of sheep.

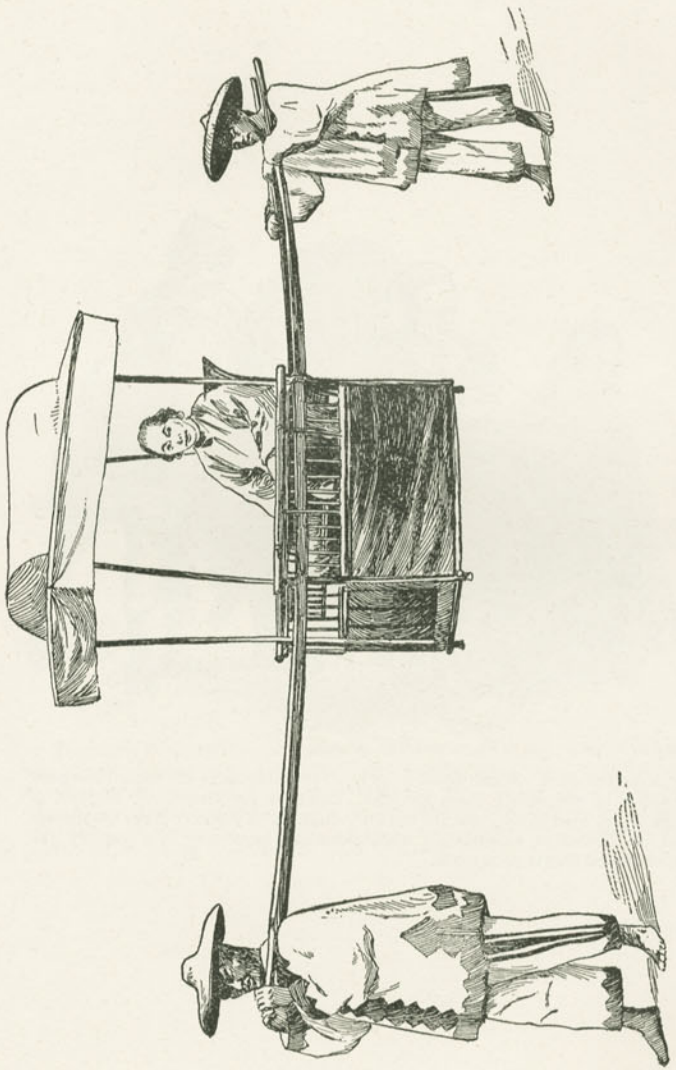
The few means of land carriage China possesses are illustrated in the accompanying pages. But what China lacks in variety of land vehicles she makes up in the number and picturesqueness of her water craft. These latter are noted for their quaintness; one and all savor of a past age, of rude appliances, of primitive conditions, of a people with few wants—easily satisfied.

The house boats, so common in China, occupy a relation to men and women not known in any other country. Children are born upon these boats, live upon them and are buried from them. One of the reasons for the general use of these boats is the crowded condition of the country. Among the poor classes meager coverings serve for a home. A snug house boat, floating at anchor upon one of the rivers of the country, is esteemed a highly attractive residence. It possesses the double advantage of being a place of abode and a business house, where traffic may be carried on without additional rent or loss of time in going to and from business. The house boats clustered together often cover an area of many acres, passages being left for ingress and egress very much as a city is supplied with streets and alleys. The Chinese empire embraces a vast territory in eastern Asia, and comprises five great divisions — Manchooria, Mongolia, Turkestan,



Method of carriage in China in the sixteenth century.

Thibet, and China proper. It has an area of about four million, two hundred and seventy-three thousand square miles, and a population estimated at three hundred and ninety-two millions. About one-third of the empire is included in China proper. This portion has an area of about one million, three hundred and thirteen thousand square miles, a coast line measuring some two thousand, five hundred miles, and contains nearly three hundred and eighty millions of human beings. The island of Formosa, heretofore a part of the Chinese empire, lies in the China Sea, about ninety miles southeast of the mainland. It has an area of fifteen thousand square miles and a population of about three millions. Its inhabitants are semi-civilized.



Covered palanquin. This method is said to be highly uncomfortable by travelers.

A mixed load. When conditions are favorable sails ar sometimes used to assist in propelling these vehicles. Donkeys are frequently hitched to them if the load is too great for the attendant. The vehicles have no springs and are, therefore, exceedingly uncomfortable—especially in a country like China, noted for its poor roads.

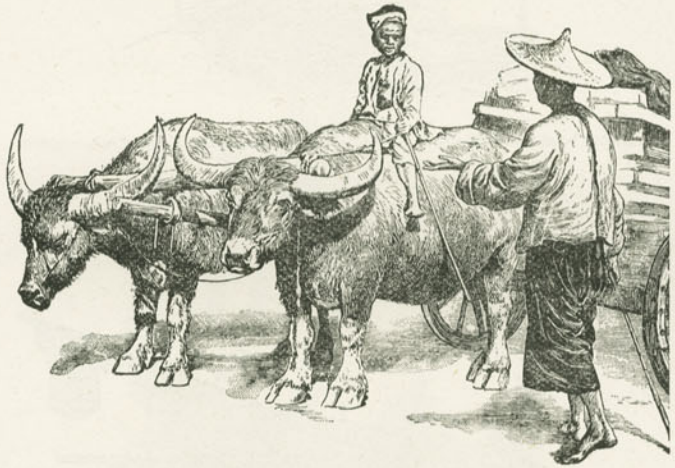
The above represents a convenient form of carriage in the cities of China. The streets of these cities are exceedingly narrow, some being only four or five feet in width. The rule for travelers to keep to the right is strictly adhered to. Every one stands aside for the passage of a funeral or priestly procession. A mandarin on foot or a wealthy merchant moves aside to allow passage to the lowest class laborer carrying a load.

Offering children for sale in the streets of a Chinese city.

Litters of this description are to be found in the mountain passes north of Pekin. In the level districts coolies take the place of the animals.

This is one of the most popular conveyances used in China. It is, however, clumsily made and extremely uncomfortable to ride in.

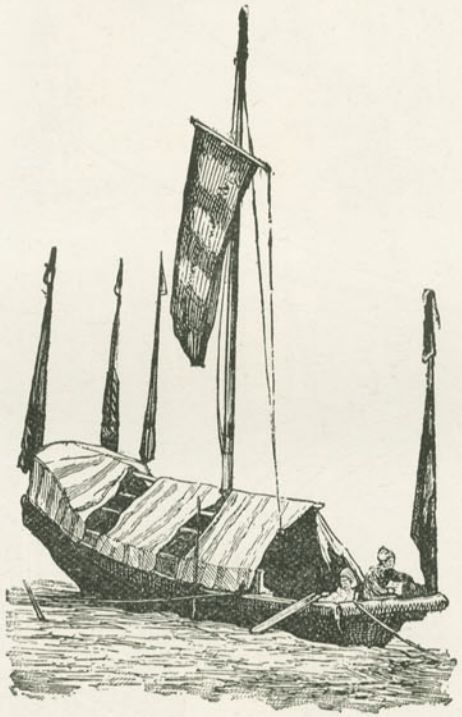
Carriage in Mongolia. The Mongols go down to Pekin in the winter with their cattle, game, coal and other produce, returning home later laden with such supplies as they need.



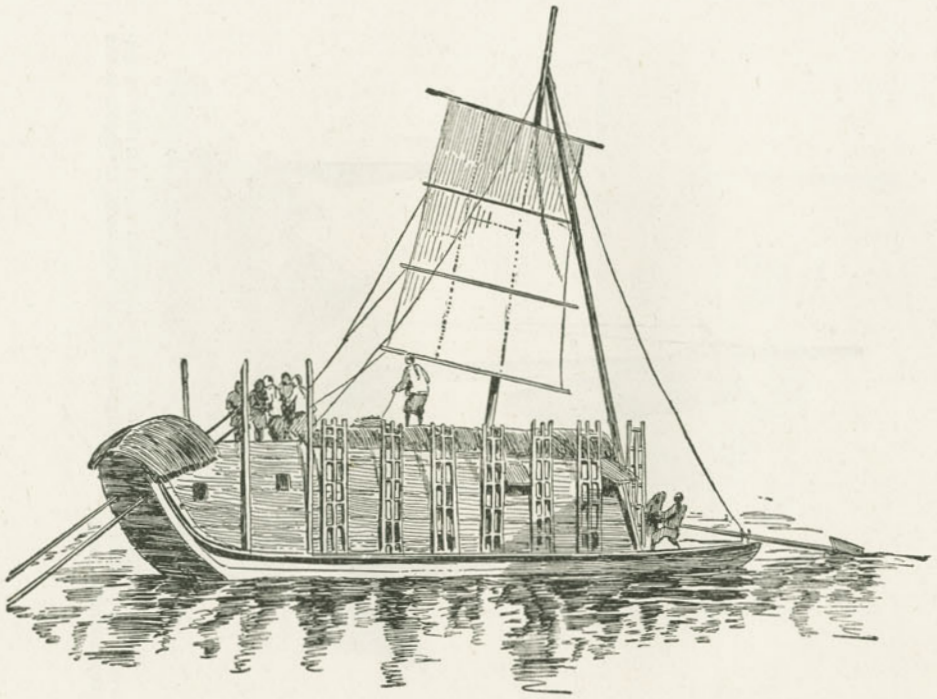
These animals, known as black water buffaloes, are much used in the south of China, Siam, Cambodia, Cochin China and the islands of the Malaysian Archipelago.

A house boat on the Canton River. It is also used for carrying passengers.

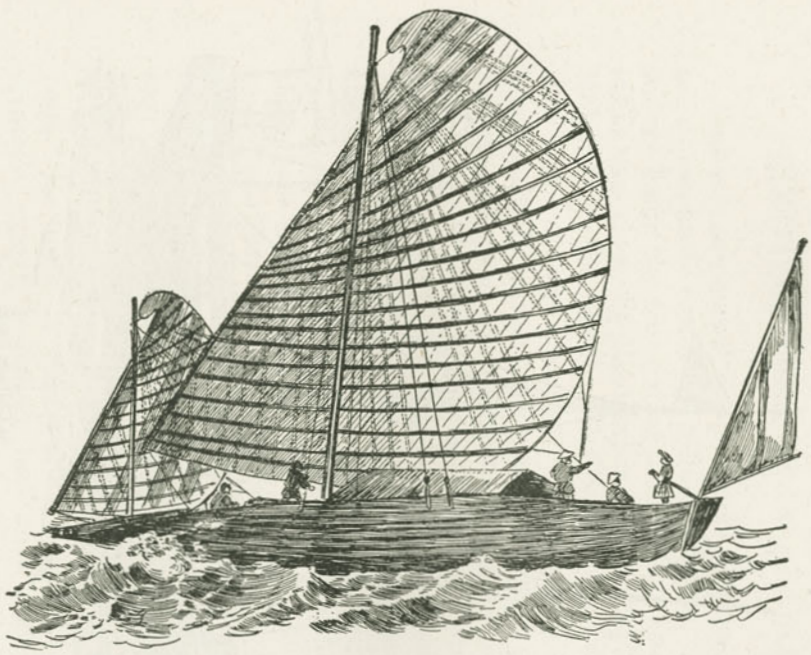
Another form of house boat.



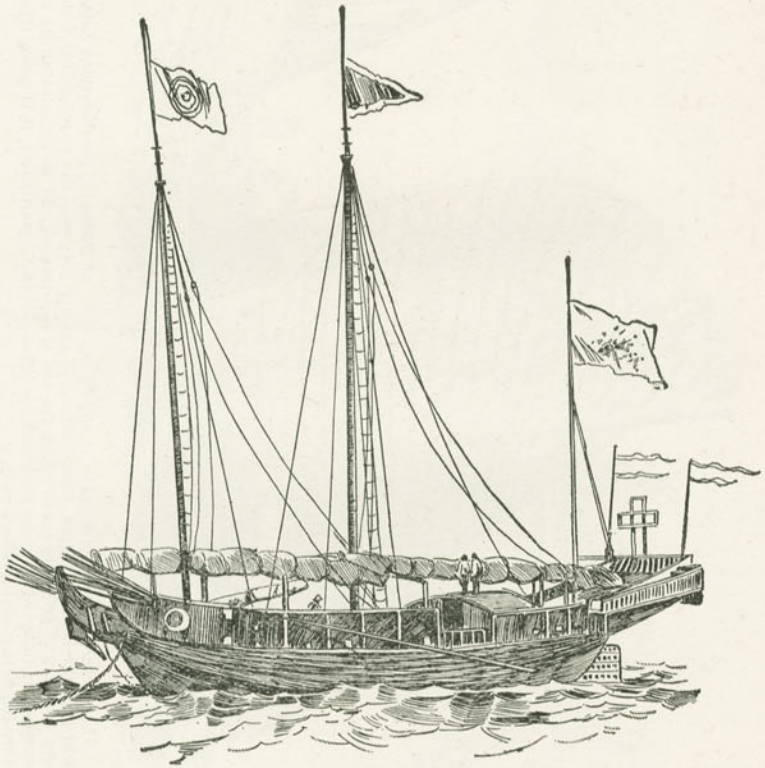
On the Yang-tse-Kiang River. On the upper portion of this river navigation is not possible except for light crafts, on account of the rapids in the deep mountain gorges.



Another form of house boat.



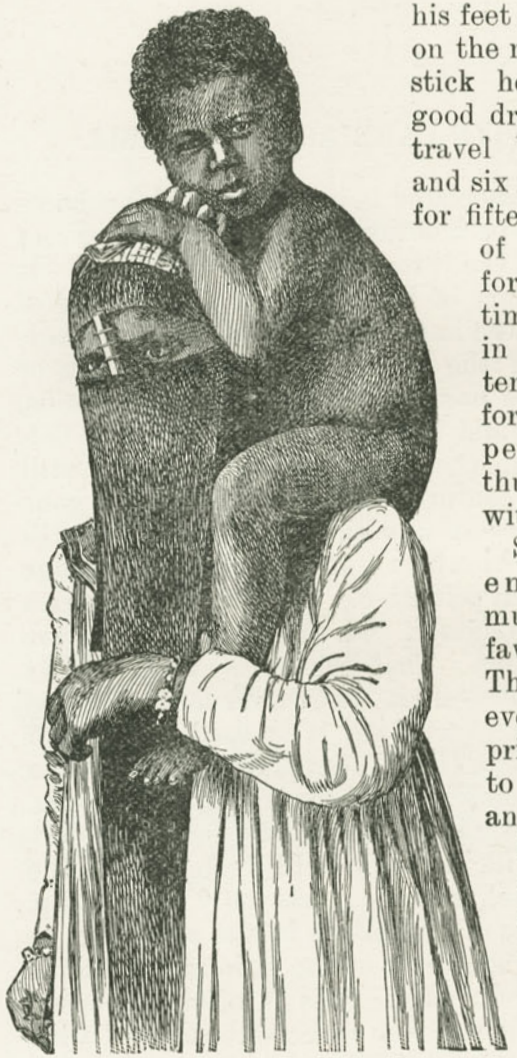
This picture represents a phase of life in the Gulf of Tonquin, South-eastern Asia. Primitive in the highest degree, these crafts still answer very well the purposes for which they are used. The principle upon which the sail is constructed and its especial utility are not esteemed or followed by more advanced maritime people. Nevertheless, it is never likely to be changed in the locality where used.



A Chinese junk.

PRIMITIVE CARRIAGE IN ARABIA.

Arabia is associated in our minds with enchantment, romantic creations, golden dreams. From thence came the three wise men of the East. It is the sanctuary of Moslemism, the birthplace of Mohammed, the haunt of the Bedouin and robber, the home of the camel, the breeding place of incomparable horses; a region of fertile plains, barren rocks and burning sands. There the Caliphs reigned; there the patriarchal state still exists. The centuries that have come and gone have here passed unnoticed. Its ways are still the ways of Abraham. Its methods of carriage are altogether primitive. The camel is here an indispensable factor. Of this animal there are many varieties. That which is most highly esteemed, however, is the dromedary. Strong, docile and fleet of foot, it is used mainly for carrying passengers. The common camel, slower and less tractable, is used for transporting goods. The flesh of the camel is used for food as we use beef. Its milk is also highly esteemed. The Arabian camel, so-called, has only one hump. This increases or diminishes in size according to the physical condition of the animal. A halter is the only rein used. This is often dispensed with by the driver, who directs the animal with



his feet or by a blow on the neck with the stick he carries. A good dromedary will travel between five and six miles an hour for fifteen hours out of twenty-four for a week at a time. Six days in summer and ten in winter form the longest period he can thus continue without water.

Singularly enough, the mule is in disfavor in Arabia. The ass, however, is highly prized and grows to a great size, and vies with the horse in speed and endurance. It is still found here in a wild state as in the days of

A bridal procession in Arabia.

Xenophon, B. C. 400. The horse is the animal par excellence of Arabia. It is claimed to be indigenous. However that may be, it here attains its greatest beauty. It is perfect in form and docility and exceeds all other horses in the world in endurance. Horses are never tied by the neck or head in Arabia, but picketed with a rope by the foot. Oxen are much used for tillage purposes and carriage in the fixed settlements of the country. Two-thirds of Arabia is made up of desert wastes and barren rocks. The carriers of this inhospitable region are Bedouins (nomads of the desert, tent-dwellers), roaming shepherds and herdsmen—always robbers.

The Arabs are especially alive to the advantages of commerce and trade. It is said no Arab undertakes a journey, if only from one village to another, without taking with him some object for exchange or sale, and he will sooner trade off the handkerchief on his head or the camel which he rides than return without having effected something in this direction.

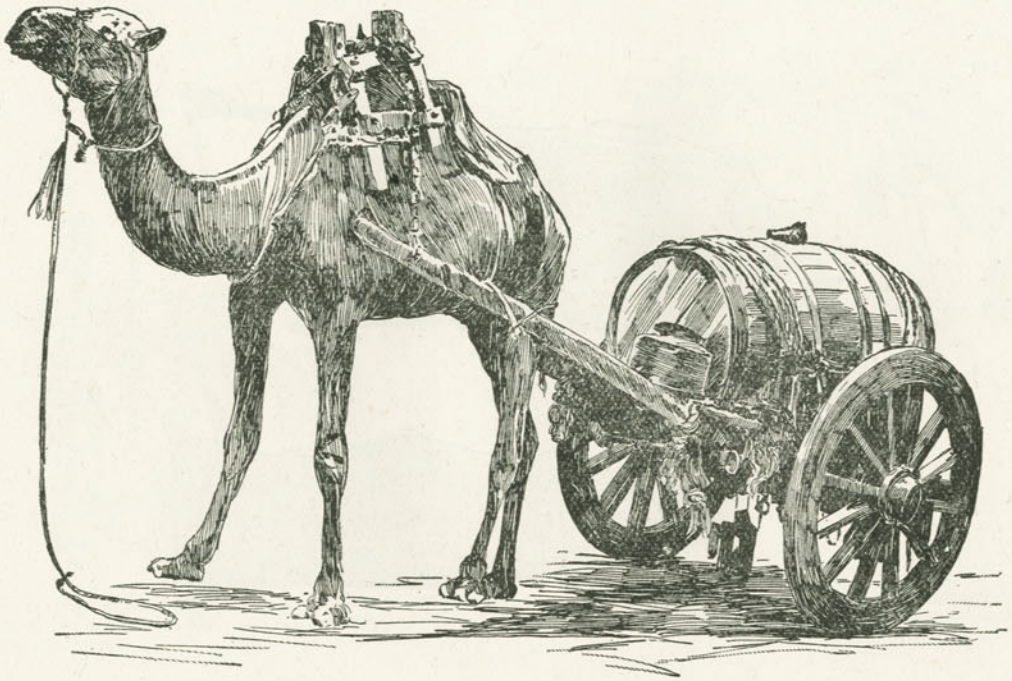
The peninsula of Arabia lies in the extreme southwestern part of Asia and is encompassed on three sides by the sea. It is about thirteen hundred miles in length, and has an average breadth about half as great. Its area is about nine hundred twenty thousand miles square miles. Taken as a whole, the country may be said to be a sunburnt desert, with here and there spots of arable land seldom exceeding twenty miles in width. Arabia has no large and scarcely any permanent

rivers. Primitive methods of carriage prevail for general as well as local traffic. The population of Arabia is estimated to be between eight and nine millions.

A scene in Aden.

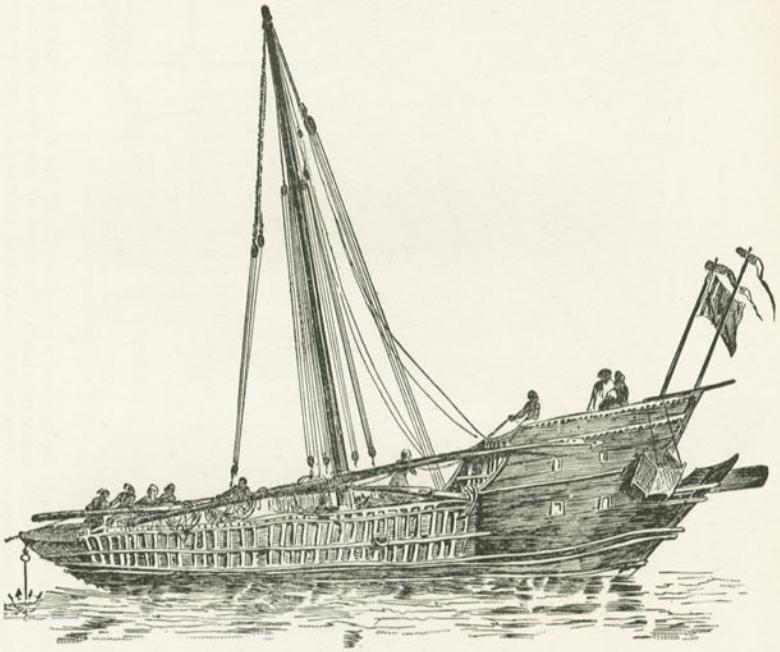
A Caravan entering Aden. This city is one of the oldest in Arabia and has been known from the most remote antiquity. It is situated on the southwestern border of the country and is a coaling station for steamers between India and Suez.

An Arabian and his steed.



Primitive method of distributing water practiced in Arabia.

This picture of carriage in Oman shows the intercommunication of methods between India and Arabia. The vehicle with its driver and oxen might easily be mistaken for those of the former country. There is nothing primitive about the establishment or driver except from the standpoint of the western world.



Freight transport off the coast of Arabia. The bow of the boat is two stories high and used for living quarters by the crew, the cargo being carried in the center of the vessel. Arabia possesses neither war ships nor commercial vessels. The tastes of the community do not run in such directions. Moreover, none of the local governments that dominate the country, have facilities for such ventures.

PRIMITIVE CARRIAGE IN EGYPT.

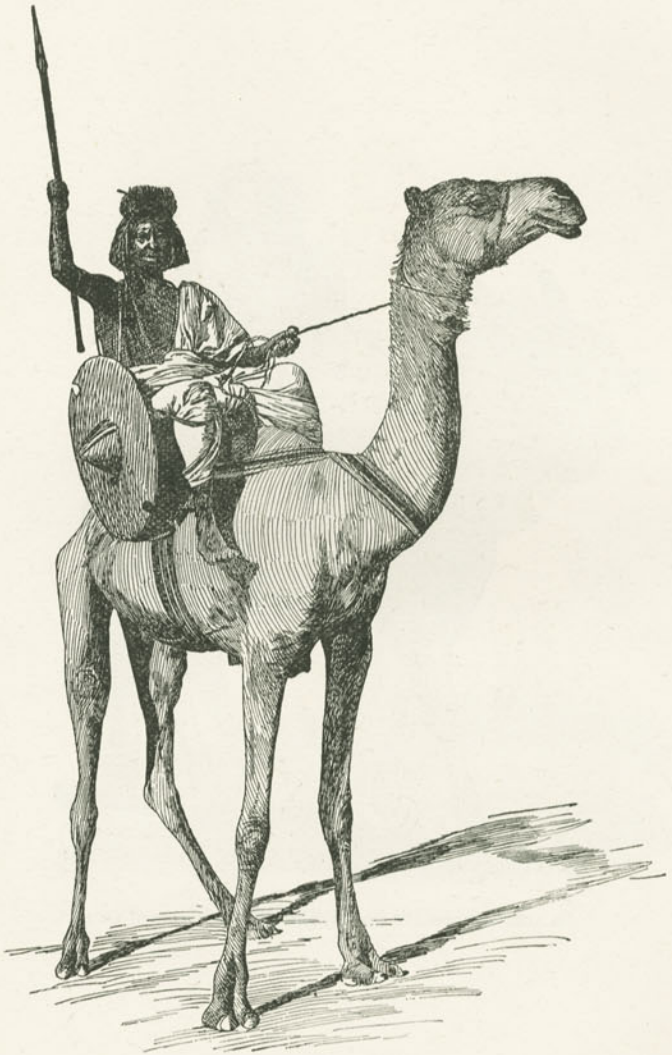
This country, while it is so far as we know, much older than India, its methods of transportation fall behind the later in variety and picturesqueness. They may be called commonplace if we except the Nile boat with its far-spreading sail, peculiar mast, and long-protruding boom. It is the presence of the Nile, and the subordination of every part of the country to it, that render specimens of primitive land carriage in Egypt meager. In ancient times the population pressed on the river, and men and women bore the drudgery of carriage on land. It was not oppressive. Asses, camels and oxen were introduced later. Nothing has ever been so common, plentiful and cheap in Egypt as men and women. The donkey and camel are favored means of local carriage at the present time. The same reasons that make the former a favorite in other parts of the world operate here.

An Egyptian plowman.

The great deserts that border on Egypt make the camel valuable. Here as elsewhere it is the docile creature of man's exactions and bears its burdens uncomplainingly, albeit without intelligence or cheerfulness. Railways and other new avenues of transportation make the camel less a factor than formerly. Before the construction of the Suez Canal the coal used on the steam vessels on the Red Sea was carried across the isthmus on the backs of these animals. The considerable commerce that ebbed and flowed across the strip of sand, now pierced by the canal, was also handled formerly on the backs of camels.

Egypt occupies the northeastern extremity of Africa. It is bordered by the waters of the Mediterranean on the north, and by the Red Sea on the east. It is bounded by Nubia on the south and by the Great Desert of Sahara on the west. The area of Egypt is in the neighborhood of one hundred and seventy-five thousand square miles. It has a population of about seven millions. Through the country from south to north flows the Nile River, which annually overflows its banks, thus fertilizing the valley, some eight miles wide and eight hundred miles long. This valley, with its subsidiary plains, forms the agricultural resource of the country, as there are no rains.

A Bedouin. These people live in tents in the desert and are nomadic. They regard the plundering of caravans as taking the place of passports or custom dues required elsewhere. They look upon travelers as trespassers upon their property.



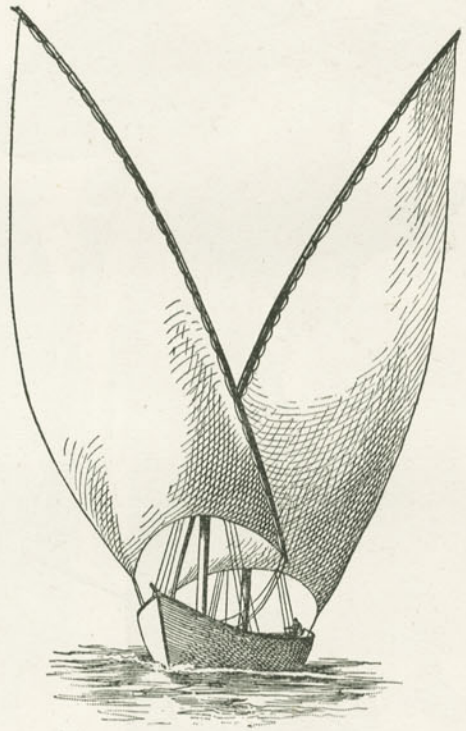
A Soudanese warrior.

An Arab lady making her way through the streets of Cairo.

A primitive carrier of the Upper Nile.

Picturesque water carriers of Alexandria. The tube or cylinder reaching from the nose to the center of the forehead, according to Mohammedan tradition, is the instrument through which celestial communication is made, should the wearer be so favored.

An Egyptian water carrier.

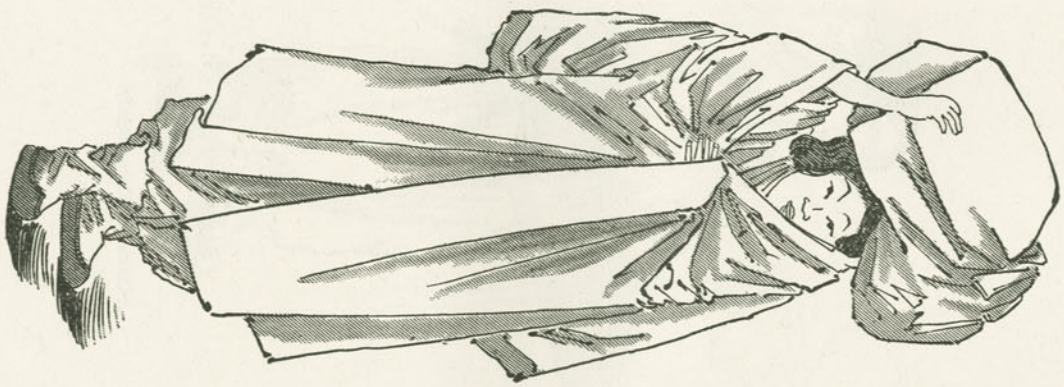


A Nile boat. The sail is very large and is fastened to a boom, which crosses and is attached to the mast.

PRIMITIVE CARRIAGE IN COREA.

Corea is a semi-independent kingdom lying to the northwest of Japan on a peninsula jutting out from the Chinese coast. It has an area of about ninety thousand square miles, and a population estimated at about nine millions. The peninsula is some five hundred miles long and has an average width of one hundred and forty miles. Corea has no railroads and there are but three ways of traveling, namely, in chairs, on horseback and on foot. Travelers usually take their food with them, and if they do not take bedding, they are compelled to sleep on the floor, as the inns are not provided with beds. Accommodations for travelers are very primitive. The people are, however, kindly and peaceful.

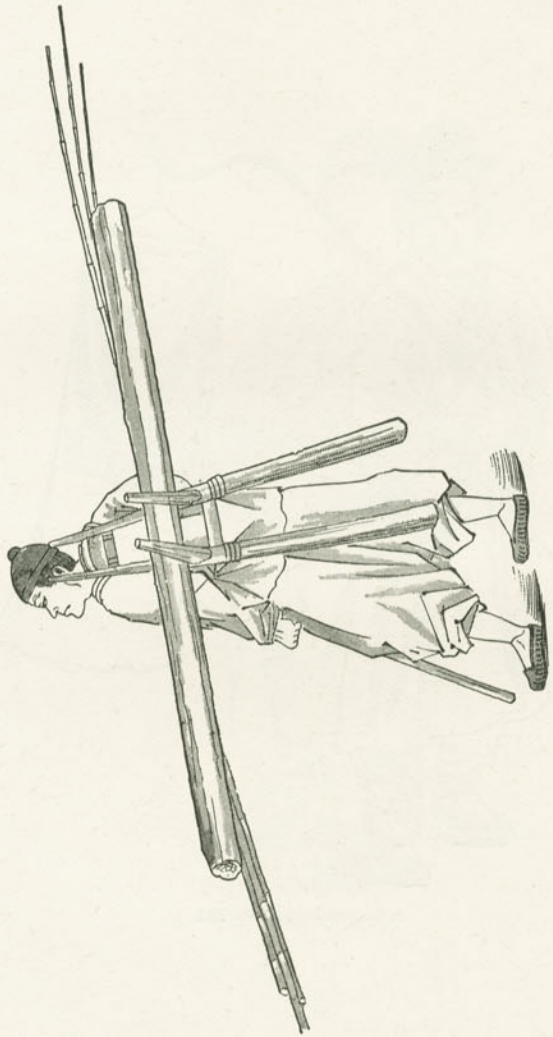
These pictures of primitive carriage in Corea were, with one or two exceptions, drawn by a Japanese artist, engaged for the purpose by the author of this book, at the time of the war between Japan and China in 1894-95. The methods of primitive carriage in this little known country very much resemble those of older and current times in Japan. The above illustration represents Corean parents carrying their children.



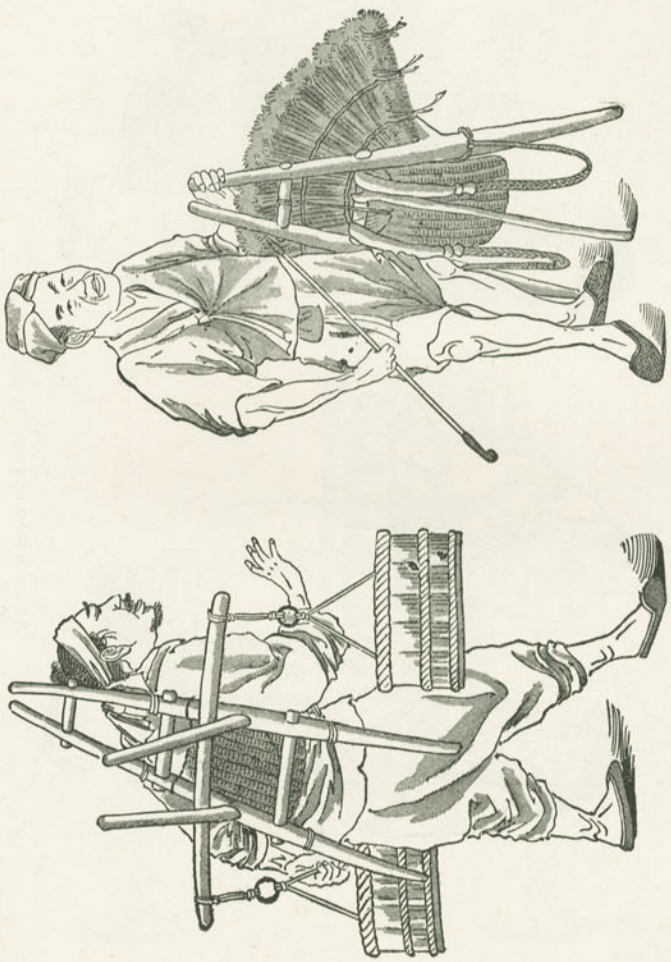
A Corean laundress going to the river to wash.

A Corean vender of candy.

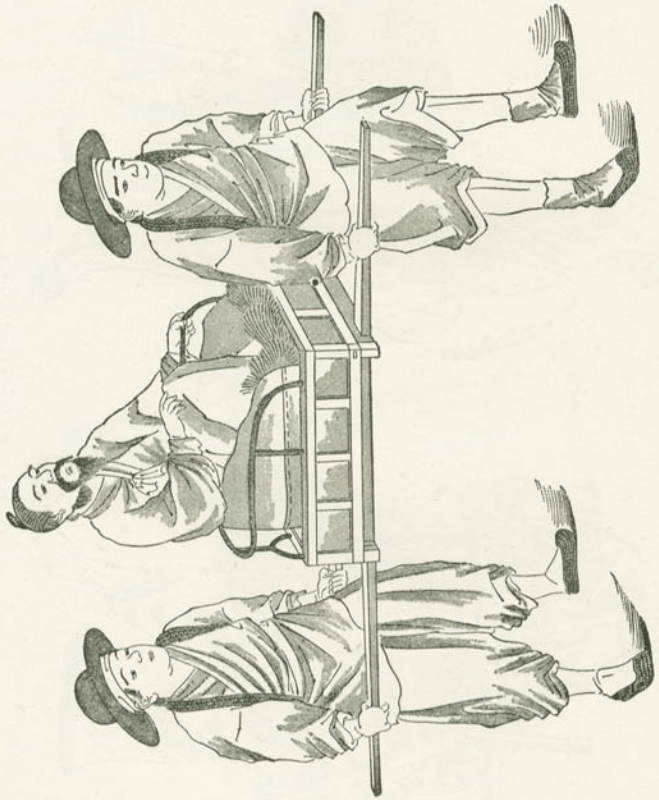
A Corean lantern carrier.



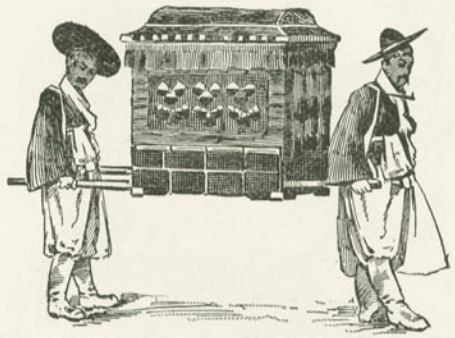
A Corean timber carrier.



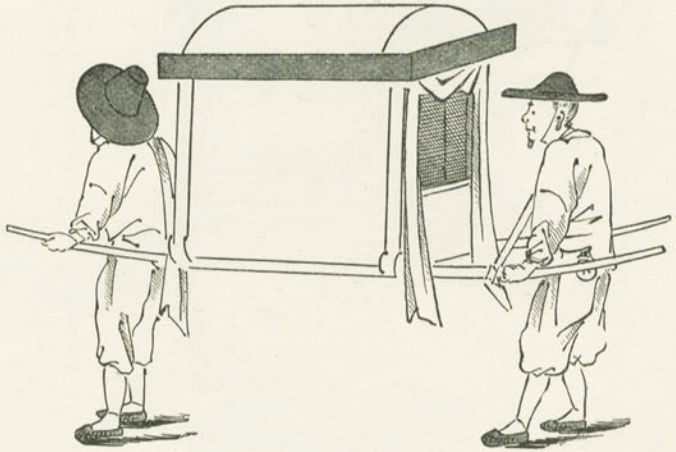
A Corean water carrier and laborer.



A Corean form of primitive carriage.



A Corean palanquin.

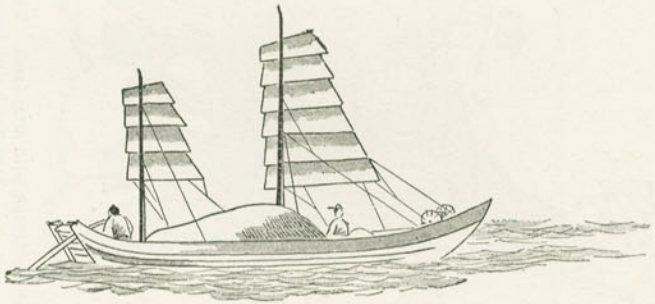


A sedan chair used by the higher class.

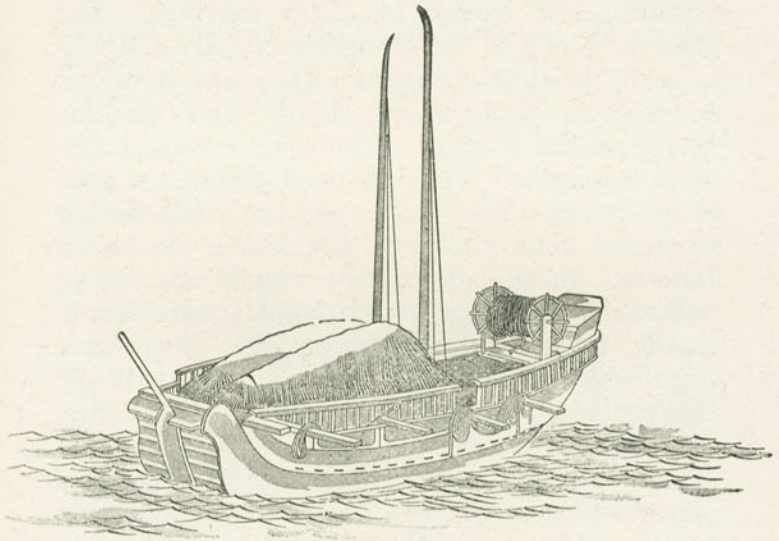
A Corean monocycle or chair. The weight of the passenger is borne by the wheel, which is kept erect by the coolies.

An ancient Corean nobleman with attendants. The footman at the left carries a supply of straw sandals on his back, fresh ones being necessary at frequent intervals.

A Corean boat.



A Corean junk under way.

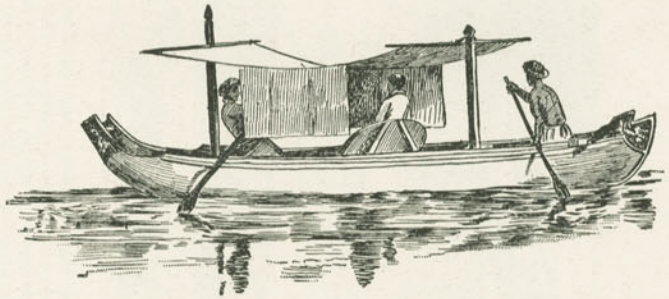


A Corean junk in harbor.

PRIMITIVE CARRIAGE IN MALAYSIA.

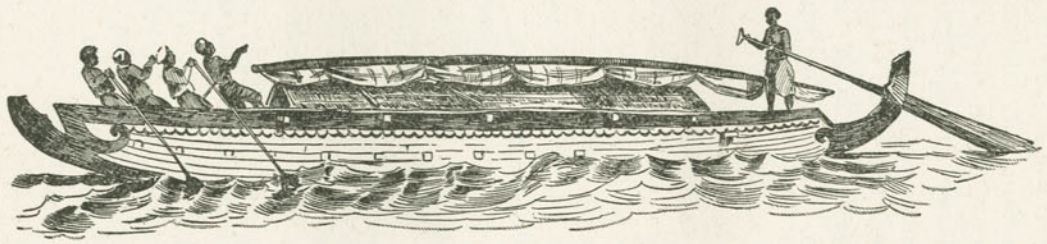
Methods of transportation in this region, sometimes called the Indian Archipelago, present nothing new except in water carriage. The Malays belong to the Mongolian family and partake of its characteristics. They are, however, courageous, venturesome, hardy and warlike. Living on the borders of the sea, they are much upon its waters. They are good sailors, but poor constructors. Their ideas are but little farther advanced than those of the North American Indians. In the main, their vessels are canoes hollowed out of logs with balancing outriders to steady them. In this latter idea they have improved on the dug-out of the Red men. While the people of Europe or America would hardly venture to sea in vessels considered of the highest order in Malaysia, we concede their craft a picturesqueness that we do not accord our own vessels. But here commendation ceases. In connection with the larger islands making up the Malay Archipelago or Dutch East Indies (notably Sumatra, Java and Borneo), higher excellence in methods of carriage is attained than elsewhere. But even here it is very crude. The vessels are cumbersome and lacking in important essentials. Carriage on land is still more backward. The camel and ass do not thrive in this locality, and

the horse is a luxury rather than a staple article. The buffalo and Indian bullock of the Brahma species are the domesticated animals most in use. The Malay Archipelago is situated southeast of Asia between the Indian and Pacific Oceans, and embraces the most extensive group of islands in the world. Among them are Java, Sumatra, Borneo, Celebes, Philippine, Moluccas, Floris and Banda.

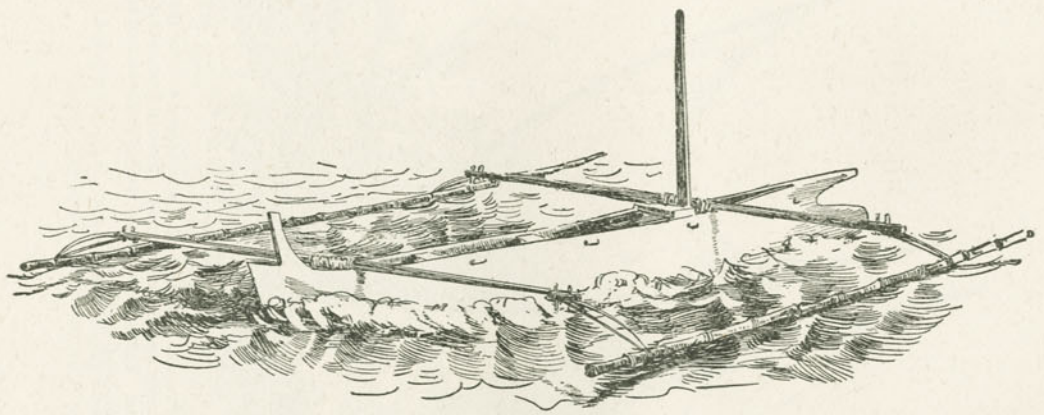


A Javanese craft. Nothing could seemingly be more cool and inviting than this. Yet it is probable that the thermometer is 100 degrees above zero.

Malaysian craft made of bamboo and covered with a thatched roof.



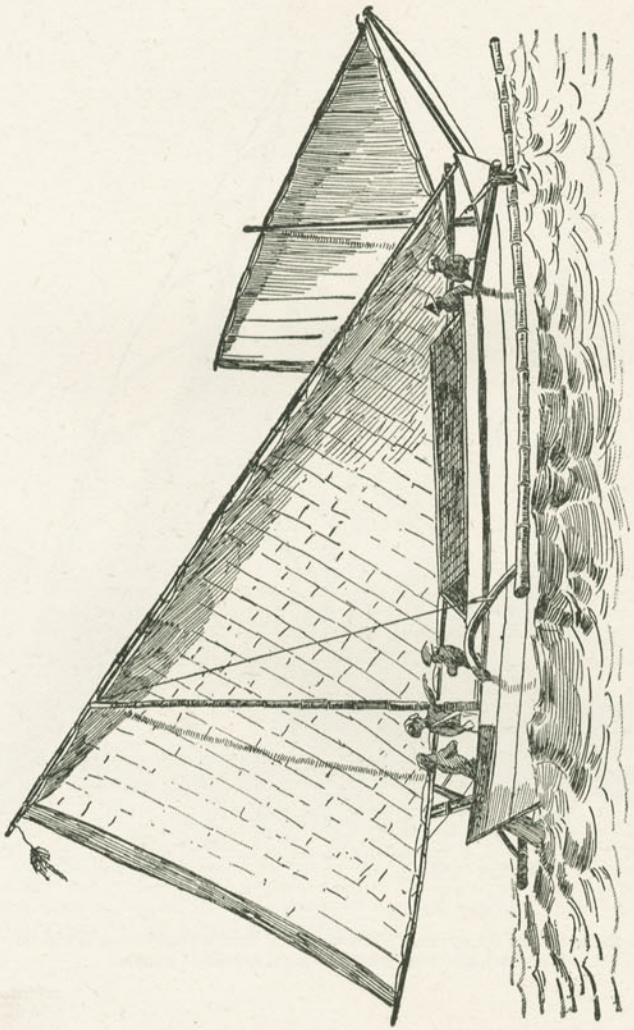
This Javanese vessel resembles our old-fashioned canal packet. It is, however, not so comfortable. Its thatched roof, while picturesque, affords only a frail protection. The bamboo mast with sail attached lies unused. The wide paddle of the steersman is crude. It would probably be impossible to find, outside of the semi-savage people of the southeastern seas, so crude a method of propelling a vessel of this size.



This delicate little craft is built with duplicate outriggers to preserve its balance. The idea of constructing a vessel broad enough to withstand rough weather does not seem to have occurred to the primitive people of the Malay Archipelago. The counterpoise here presented solved apparently the problem of a sea-going vessel and rendered further advance in naval architecture, in the opinion of the natives, unnecessary.

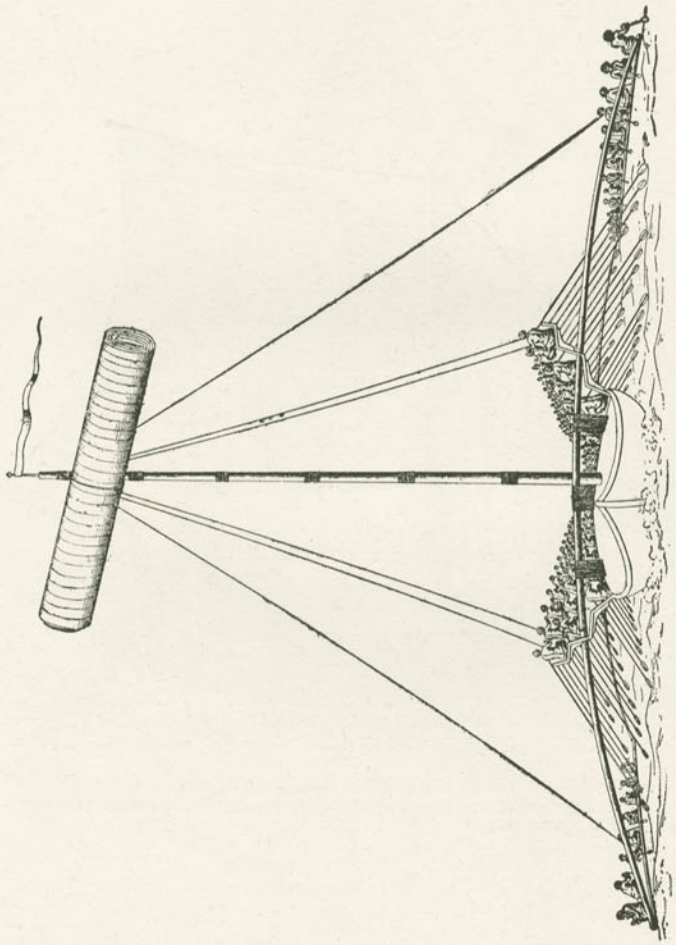
A primitive war vessel. The arm of the outrigger is used to carry the warriors and at the same time trim the vessel. The sail is made of skins fastened to bamboo poles. The end of the sail resting on the stern of the boat is held in place by guy ropes from the sides.

A characteristic Malay craft. The outrigger steadies the vessel, it will be noticed, and thus permits a great spread of canvas.



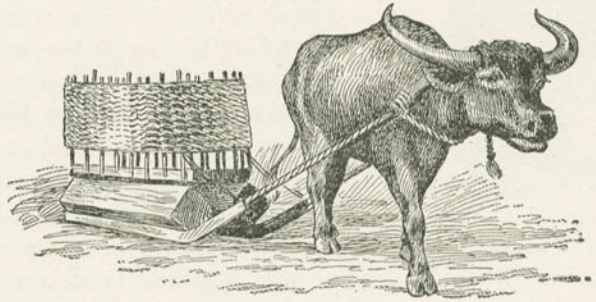
A Java passenger boat. A bamboo outrigger is placed on each side of the vessel and the sail so arranged that a large surface is presented to the wind as low down as possible.

Off the coast of Java. It is said that the method of rigging sailing vessels in the classical period was the same as the above, namely, one mast with two yards and a square sail.



Malay vessel. The sail is rolled up like a mast. The craft is steadied and aided by the men on the outriggers. While the illustration is defective, it portrays the arrangement of different banks of oars, three in all.

A Borneo peddler.



Carriage in the Philippine Islands.

PRIMITIVE CARRIAGE IN TURKEY AND ARMENIA.

These countries, about which we hear so much the greater part of which is unjust to their rulers, contains within their widely extended and irregular boundaries many interesting monuments of events that have been of vast consequence to the human race in the past.

The site of ancient Troy is but a few hours' ride from Constantinople. Sardis, Crœsus' capital, where money is said to have been first coined, is but a little further. The subjects of Turkey tend their flocks on the sites of ancient Nineveh and Babylon. The Chaldeans, who were old before the Hebrew race existed or the Bible had been conceived, believed the ark to have rested on Jebel Judi, on the Upper Tigris. There were similar Syriac and Arabian traditions. The sites of Tarsus and opulent Antioch lie within

Turkish territory. The greatest voyagers, traffickers and maritime traders of antiquity, the Phœnicians, had their home at Tyre and Sidon, along the eastern shore of the Mediterranean, in what is now known as Asiatic Turkey. Jerusalem and Palestine lie immediately east. Still further on lies Chaldea, the birthplace of the human race in the estimation of many, and from whence sprung the culture of the west. It is now desolate and its people have passed away, but the Tigris and the Euphrates

remain, and by their aid we are able to identify the spot. Upon these streams little change has occurred. The same circular boats, the same curious rafts borne upon inflated skins that Herodotus described twenty-three hundred years ago, are to-day the principal means of carriage. Greece, the theme of poets, philosophers and scholars, was until recently a part of European Turkey. The country where Carthage stood has rendered Turkey tribute. Macedonia, where Philip reigned and from whence Alexander

started on his conquest of Asia, still forms a part of Turkey. Egypt, the country of the Nile and old beyond calculation, now renders it tribute. Such is Turkey. All the great events of extreme antiquity, it will thus be seen, occurred within its jurisdiction.

Everything about the country savors of ancient times, of primitive conditions. Opposite Constantinople on the southern shores of the Euxine (Black Sea) the greatest of primitive carriers, the mule, was first bred, Herodotus tells us. No minor event in ancient history surpassed this in practical importance. Turkey embraces so many distinct forms of primitive carriage that a description of them covers methods of transportation in many other quarters of the world. In Syria (the battlefield in ancient times of the Hittites, Aramaneans, Assyrians, Egyptians, Chaldeans and Hebrews), the camel and ass are the prominent factors;

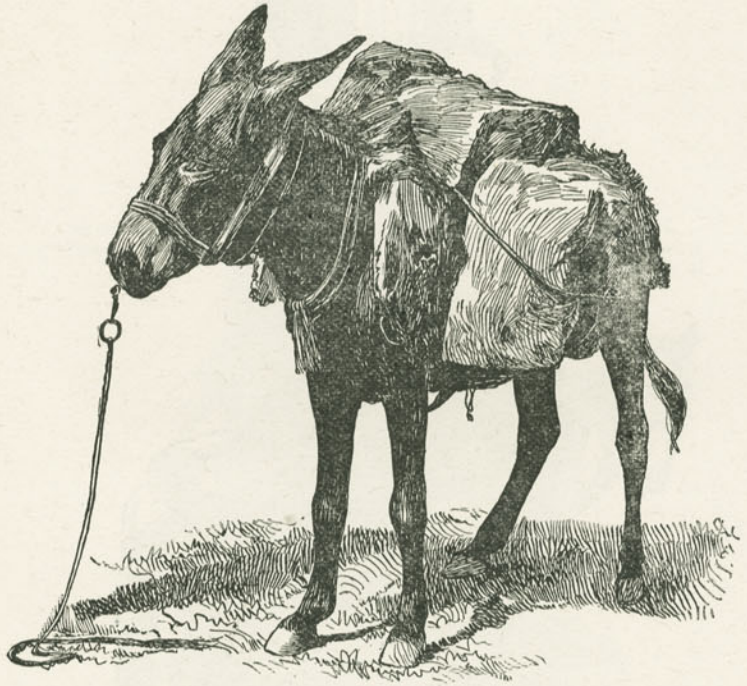
and as we are familiar with their nature as illustrated elsewhere herein they need not be repeated here. Old forms of carriage are everywhere maintained throughout Turkey.

Constantinople is distinctly oriental. Many of its streets are so narrow that animals and vehicles are excluded, the burdens of carriage being borne wholly by men. Outside of Constantinople, in European Turkey, however, methods of transportation are rather European than oriental.

They are, however, simple and primitive. This territory covers what is known as ancient Thrace. It has been a battlefield from the earliest ages. Its savage tribes have never responded kindly to civilizing influences. When Greece and Rome were the centers of culture, Thrace was the scene of tumult and savage warfare. The advancement that follows security and order maintained over a long period has never been known in this region. The truth of this is shown in the

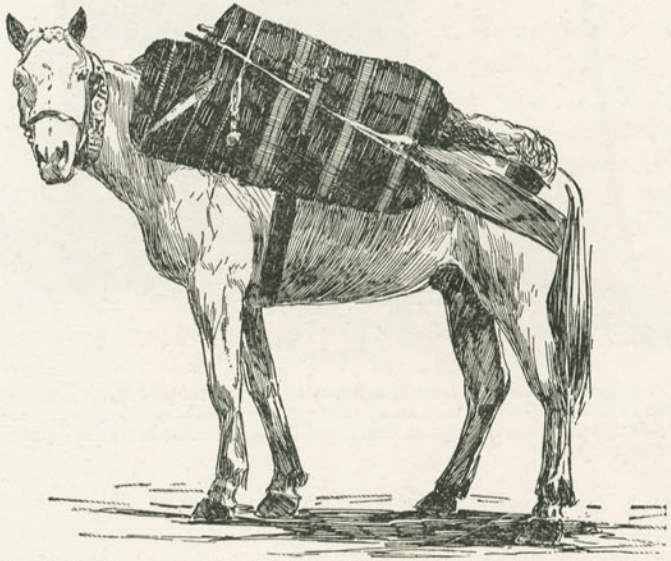
poverty of the people and their rude forms of carriage.

The Mohammedans of the Turkish Empire incline to agricultural or pastoral life. The Christians and Jews are traders. Pioneer railroads are forming in Turkey, but the outlook is not hopeful for their general introduction. The agricultural and commercial interests of the empire do not warrant it. Turkey, or the Ottoman Empire, has an area of over a million square miles, occupying the southeastern corner of Europe and the western portion of Asia, omitting Arabia and part of ancient Armenia. Its population is estimated to be about twenty-one millions. Egypt is nominally a dependency of Turkey. Armenia, a country formerly comprising so extensive a portion of Western Asia, is now divided between Russia, Turkey and Persia. The Armenia of ancient times is no more. It occupied an elevated tableland high above the level of the sea, culminating in the peak of Ararat. It was watered by the Euphrates. Tigris and tributary streams, and abounded in romantic scenery and luxurious pasture land.



A Syrian carrier. It is estimated that the transit trade of Syria employs eighty thousand beasts and about thirty thousand drivers. Lack of good roads is a great impediment to commerce, those that exist being mere mule or camel tracks.

This form of carriage, so frequently to be met with in Bagdad and in the vicinity of the Mesopotamian Valley, was the fashionable form of conveyance in that locality four thousand years ago.



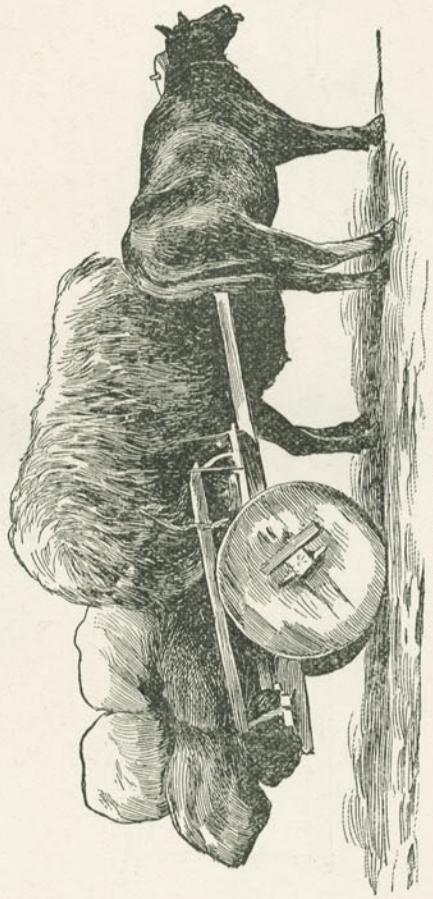
Carriage in Erzeroum. This city is the chief halting station for caravans from Teheran, the capital of Persia, to Palestine and the Arabian peninsula.

A Kurdish chief. These people are only semi-civilized and are much given to brigandage.

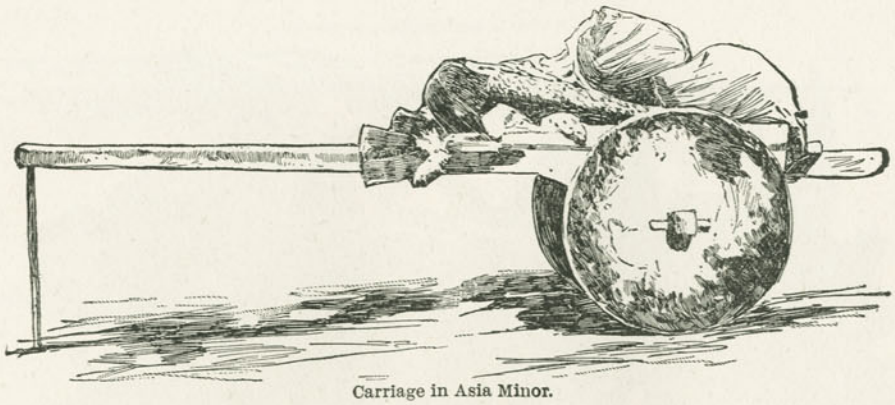
A Kurd.

Carriage in Armenia.

On a country road in Asiatic Turkey.



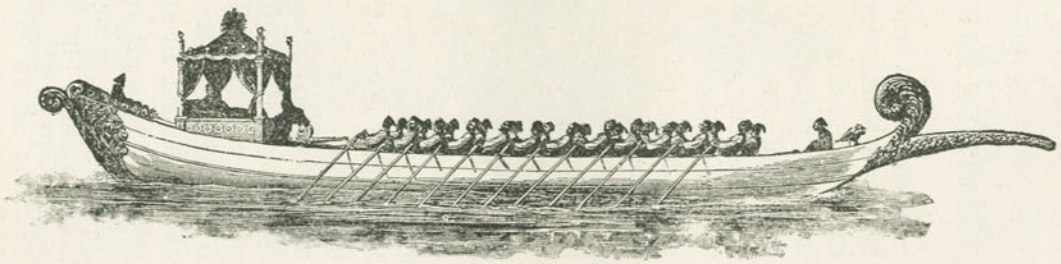
Carriage of merchandise in Asia Minor.



Carriage in Asia Minor.

Raft of inflated skins on the Tigris river. Only a small portion of this river is navigable for steamers. Rafts are used almost wholly above Bagdad. The current is so rapid that the traffic is all down stream, the craft being broken up at Bagdad and transported up the river by land. Little, if any, progress has been made in the last two thousand years. On land, the dense population, the highly cultivated fields, the great cities of which Babylon and Nineveh were the queens (the culture that thousands of years had slowly evolved) are gone, and in their place there is a desert given over to nomads, who find thereon a scant pasturage for their herds.

Water craft on the Tigris. It is made of rushes woven together and strongly braced and smeared on both sides with pitch. These vessels are exceedingly light and have relatively an enormous carrying capacity.



A barge of the Sultan of Turkey.

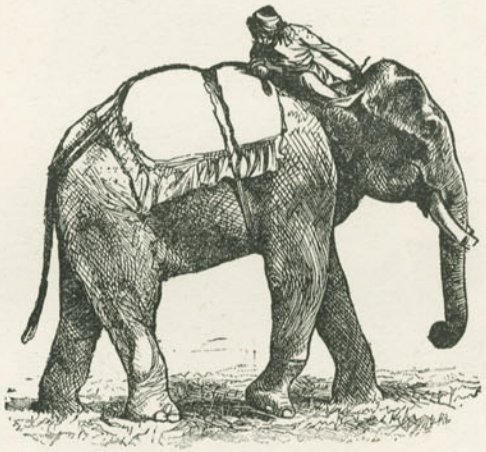
PRIMITIVE CARRIAGE IN AFGHANISTAN.

Afghanistan comprises the mountainous region between Northwestern India and Eastern Persia, its extreme dimensions being about six hundred miles miles north and south and a like distance east and west. Its roads are few and poorly maintained, as in all semi-civilized countries. The precursor of the public highway, the narrow path of the primitive savage, is the chief avenue of commerce. Along its narrow way commerce drifts through the valleys and in and out among the gorges and mountain passes. The country is rugged and mountainous. Its population is divided into settled communities and tent dwellers or semi-nomadics. The great wealth of the latter consists of herds. While Afghanistan has a central ruler, the community is made up of tribes and clans as in the early ages of a people's development. The Afghans have fine physiques, and are said to be extremely vain of their history, persons and acquirements. They are said to possess cruelty and love of bloodshed, characteristics of semi-savage people. The Afghan is characterized as a "bird of prey," and while he may not himself rob his guest, will suggest it to others. The camel is the principal carrier of Afghanistan. It is more rugged than that of India. The horses of the country are small.

Many, however, are raised for export. In the wars of Afghanistan with India the elephant has been an important adjunct. The humpback ox

of India is frequently to be met with in Afghanistan. The chief reliance of the country, however, is the Arabian (single hump) camel. As there are no great lakes or water courses in

Afghanistan, water crafts are few and meager in design. In the mountain streams the raft borne by inflated skins is to be met with. Indeed, it may be possible that here is where it came from in the first place. The people of Afghanistan believe that man originated in their country and it has been claimed to have been the original home of the Aryan race. Afghanistan has an area of about two hundred and twenty-five thousand square miles and a population estimated at five millions.



In one of the wars of Afghanistan with India it was the province of this particular elephant to act as a scavenger in the removal of dead camels and other animals that accumulated on the battlefield and about the army.

Raft on the river at Jelalabad, Afghanistan, made of inflated skins covered with light boards.

Nomads of Afghanistan. The roving instincts and predatory raids of the inhabitants of Afghanistan have kept that country and surrounding nations in alarm from the earliest historical times. Warlike and courageous, war is their native element.

PRIMITIVE CARRIAGE IN TUNIS AND MOROCCO.

Tunis embraces within its territory the site of ancient Carthage, the seat of Carthaginian power for six hundred years. It is under the protectorate of France and lies to the northeast of Algiers, in an angle of the Mediterranean. The first account of it we have dates back to about B. C. 1100. Afterward, while dominated by the Carthaginians, it was under a high state of cultivation. Today it is but little, if any, further advanced than Arabia. The donkey and camel are the chief carriers. Bordering on the Great Desert, the camel is an important factor, and the commerce that is carried on with the Soudan country is handled on its back.

Morocco is even less advanced than Tunis. It has no railroads whatever, while Tunis is favored in this direction; albeit, but slightly. In Morocco

public roads which may be traversed by vehicles are unknown. It has paths only; those of the primitive savage. Along these, men, women and donkeys pursue their way as in the early history of man.

It is said that Tangier has only one cart, and that the carriages which have been presented to the emperor at various times, he is unable to use,

except in his own grounds. What an interesting country this must be to visit; quaint, primitive, slow-going, drowsy, mysterious. Morocco is the Mauretania of the ancients. It lies directly across the channel from Gibralter. Like Tunis and Algiers, it borders on the desert. This suggests the use of camels. They alone are able to traverse the great waste. Everywhere one goes in Morocco these patient, sad-eyed animals greet

him. The wealth of Morocco consists largely of herds. Trade and commerce, worthy to be thus named, hardly exist. Tunis is about four hundred and forty miles long and one hundred and sixty miles wide, having an estimated area of seventy thousand square miles. The inhabitants number about one and a half millions. Morocco is bounded on the north by the Mediterranean Sea, northeast by Algeria, east and south by the Great Desert, and west by the Atlantic Ocean. It has an area of about one hundred and ninety thousand five hundred square miles, and a population estimated at six millions.

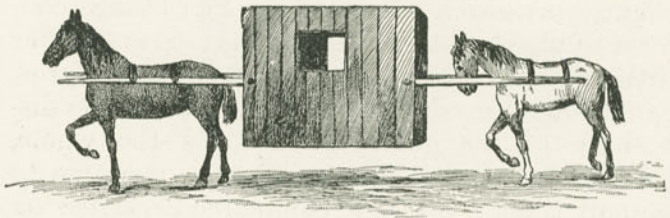
In Tangier.

In Morocco.

Moorish Warrior.

In Morocco.

A market scene.



A means of travel among the favored few in Morocco.

PRIMITIVE CARRIAGE IN PERSIA.

The name Persia conjures up many memories to the lover of ancient history. It recalls Cyrus the Great and his subjugation of Media, Babylon and Susa and the downfall of Crœsus, Xerxes' invasion of Greece, the Retreat of the Ten Thousand, and, finally, the conquest of the Persian Empire and the overthrow of the Great King by Alexander.

The Persia of our day is much larger than the diminutive kingdom out of which Cyrus first marched his army. But the people are not the people of Cyrus; they lack their enterprise, physique and homogeneity. Persia has a mixed population, such as we might expect to find in a country that has been a battlefield for thousands of years and the focus of many invasions and counter-invasions. Its methods of carriage conform to physical and social conditions and differ little from what they were in the time of Cyrus, twenty-four hundred years ago. While the disposition of the government is, on the whole, friendly to railroads, the country is not able to support them. Internal commerce is carried on by means of horses, mules and camels. Oxen are much used for agricultural purposes. The Persian camel is stronger than that of India or Afghanistan. It is said to be able to carry seven

hundred pounds. The Persians cross the Bactrian (two hump) camel with the Arabian (one hump) camel. The government is an absolute despotism under a Shah, who is the vice-regent of the

prophet. The population is divided into those who live in towns and villages, and those who live in tents. The latter generally live on the hills in summer, each having his particular

locality, and in the lowlands in winter. The Persians are kind, hospitable and obliging, and cleanly in their habits. Slavery is practiced, but it is said they treat their slaves as highly prized servants rather than mere creatures. Persia is bounded on the north by the Caspian Sea and the Russian Empire; on the east by Russia, Afghanistan and Beloochistan; on the south by the Arabian Sea and Persian Gulf, and on the west by Asiatic Turkey. It has an estimated population of about nine millions and an area of six hundred and thirty-five thousand square miles, much of which is tableland without water.

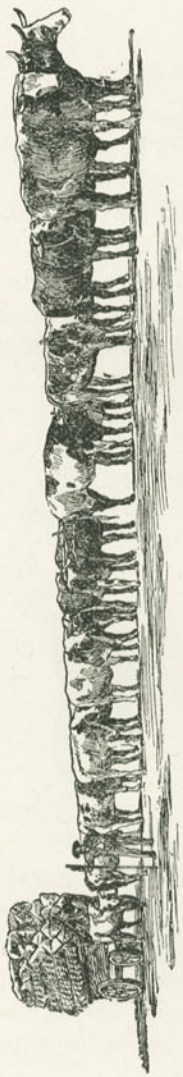
Crossing a stream.

Rural life in Persia.

On the move in Persia.

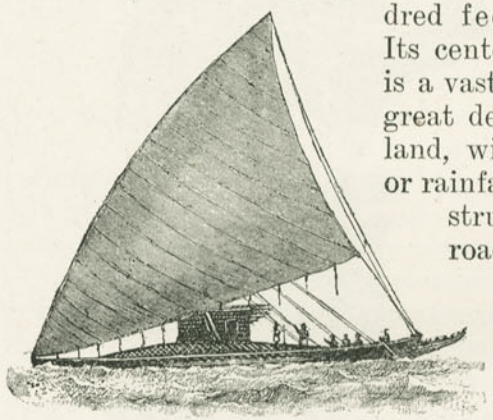
PRIMITIVE CARRIAGE IN AUSTRALASIA.

The widely separated islands constituting Australasia form a part of what is known as Oceanica. The aborigines were savage blacks. Because of their dark skin the territory has sometimes been called Melanesia. It comprises the islands between Malasia and Polynesia—namely, Australia, New Zealand, New Guinea, the Fijis, New Britain, Tasmania, etc. When discovered by white men no progress toward civilization had been made by the aborigines. The desire to possess property, the first indication of enlightenment—the cracking of the shell of savagery—they lacked. They were not familiar with agriculture, and the dog was the only domestic animal they possessed. They had in general no settled dwellings but lived in hovels. Their water craft were rude rafts or dug-outs, canoes hollowed out of logs; those intended for war purposes, however, were frequently of enormous size, in some instances being ninety feet long and carrying one

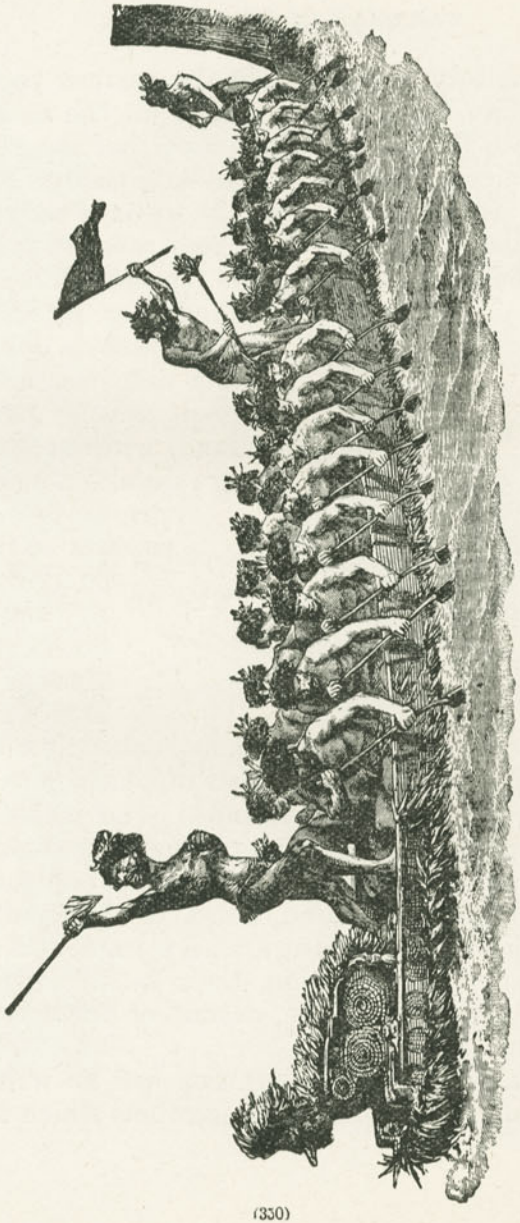


hundred and fifty men. Men and women, especially the latter, bore all the burdens of transportation. But there was little of the latter. Men looked for their food from day to day as do animals, giving little or no intelligent thought for the morrow. These primitive conditions still exist in the unexplored or little frequented parts of the territory. Like all savages, the men are lazy, idle and quarrelsome. They do the fighting. The women do the useful work and bear all the drudgery of life. Foreigners have introduced improved water craft, and, on the larger islands, domestic animals. In Australia the camel is found to thrive and to be especially useful in traversing the vast wastes of the interior. The first account we have of this great island, the largest in the group, and, indeed, the greatest in the world, is in 1598. It might more properly be called a continent. It is two thousand, five hundred miles from east to west and one thousand, nine hundred and fifty miles in breadth, containing some three million square miles. Its population is in the neighborhood of three millions.

The territory is situated in the eastern part of the Indian Ocean and bounded on the east by the South Pacific. It is supposed that the island was at a comparatively recent date the bed of an ocean. In its eastern part there is a range of mountains some one thousand, seven hundred miles long and averaging one thousand, five hundred feet in height. Its center or interior is a vast incognito, a great desert of waste land, without water or rainfall. The construction of railroads is actively encouraged by the government of Australia. The island is a colony of Great Britain, as is also New Zealand. The last named consists of what are called the North and South Islands. The islands of New Zealand have an area of about one hundred and five thousand square miles and a population of nearly seven hundred thousand. The natives are divided into tribes as are all savages at a certain period of evolution, their social progress being indicated by the nature of their tribal relations.



The aborigines of Australasia had no written laws, but, in some instances, customs which they



(350)

adhered to in a general way. In some cases particular tribes had fixed locations. This may be said to be a distinction which usually exists between a tribe and a horde. Respect and obedience were accorded the chief of the tribe. Their rule, however, was, in the main, based on personal prowess. Some progress has been made in New Guinea in the construction of railroads. This island is, next to Australia, the largest in the world. It has a length of one thousand, five hundred miles east and west, and is thirty to four hundred miles from north to south. Its area is estimated at from two hundred thousand to three hundred thousand square miles. Little, however, is known of its interior. The population consists of tribes with cannibalistic tendencies. This last peculiarity characterized the savages in the entire group at one time, as indeed it does all savages at a certain period of evolution. The primitive savages of the Fiji Islands are, in some respects, the most interesting of the group. About eighty of these islands, out of the two hundred and fifty, have been found to be inhabited. Inter-communication is, however, exceedingly dangerous. But the natives are as much at home in the water as on the land. They are, one and all, pronounced cannibals, and, despite the efforts of missionaries and others, cling with more or less tenacity to their old habits and appetites. Following the practices of the savages of whom we have account in Eastern Europe and Western Asia in early days, widows are put to

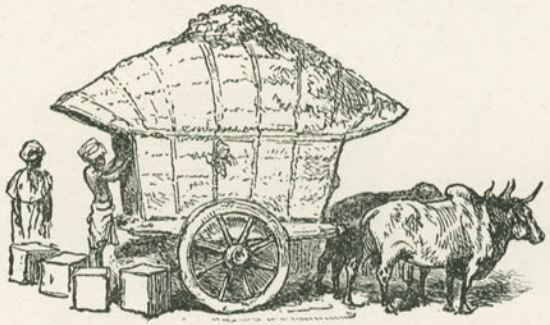
death on the demise of their husbands, and servants killed when their master dies. These practices tend to make the wives careful of their husbands and the servants regardful of their masters. The Fijis are said to be sensitive, proud, cleanly, hospitable and polite. These charming qualities are, however, only relative characteristics of the savage who breakfasts on his guest and dines off his enemy.

PRIMITIVE CARRIAGE IN CEYLON.

Black people are the natives of Ceylon. To these add other and still blacker people from the Indian Peninsula, who have gone to Ceylon to find work in the tea fields, and you have a

picture of the great bulk of the population. The governing class are Englishmen, theirs the capital. It is an exceedingly interesting country and takes on many of the picturesque features of India, by whom it was conquered fourteen hundred years ago. About that time an Indian

prince crossed over from the mainland, and the conquest of the aboriginal population of Ceylon followed. It was colonized by the Portugese in the sixteenth century. They were afterward driven out by the Dutch. The island is now in possession of the British. Here again we come across the elephant and the humpback ox of India. These two primitive carriers in themselves make the picture attractive. The ele-



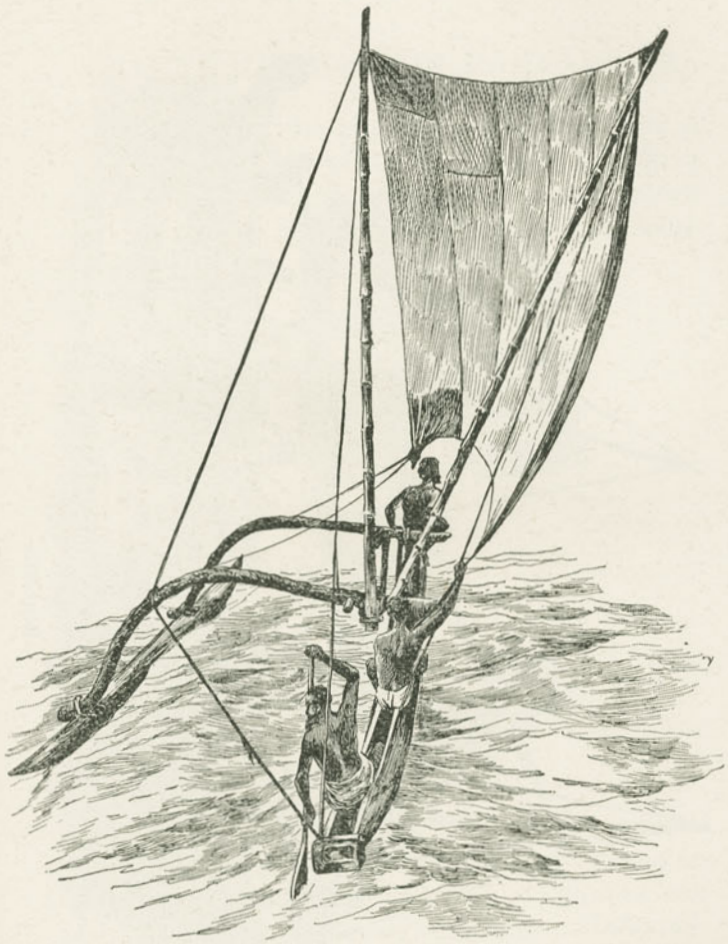
A local express.

phant is found in his native state in the almost impassable jungles of the interior. The great herds that at one time roamed through this district have been greatly diminished by hunters. The elephant is royal game, and the public only regrets that the animal's intelligence is not sufficient to enable it to exterminate those who assail it for sport merely. The pleasure of the sportsman in pursuing his quarry is not to be compared to the delight we should feel in seeing the quarry pursue the hunter.

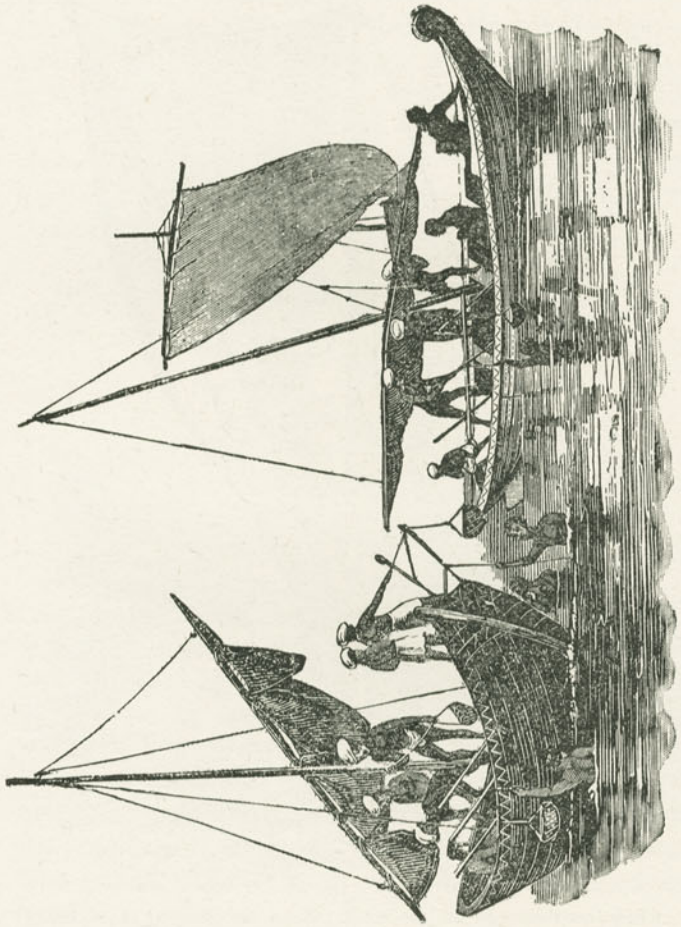
An interesting feature of Ceylon is its quaint methods of water transportation. The island inhabitants of the southeastern seas, including those who inhabit the Malay Peninsula, have their own fashions in water craft. These fashions, while interesting, would not prove adequate in the case of people whose commercial interests were great, or who were travelers. They are ample, however, to meet the simple wants of the South Sea Islanders.

On the Colombo River.

Ceylon is an island in the Indian Ocean, about one hundred miles from the southern extremity of India. It is two hundred and seventy-one miles in length, and its greatest breadth one hundred and thirty-seven miles. Its area is about twenty-four thousand square miles, and its population between three and four millions. The active construction of railways is encouraged.



Singhalese fishermen off the coast. When the outrigger is not heavy enough to hold the boat down, the weight of one or more of the crew is added to it.



Pearl fishing in Ceylon waters.

PRIMITIVE CARRIAGE IN MADAGASCAR.

In no country in the world, not excepting Africa, are methods of carriage more primitive than in this far off country in the southeastern seas. There are no highways—only rude paths.

Upon these the burdens of carriage are borne on the shoulders of stalwart natives. Vehicles can not be used except in local instances. Rude palanquins with canvas seats attached to poles carried on the shoulders of attending negroes are

the highest type of transportation the country affords. Madagascar has been known for a thousand years or more, but is still uncivilized, still undeveloped—much of it still unexplored. The aboriginal inhabitants are negroes. The island of Madagascar is situated in the Indian Ocean, some two hundred miles east of the mainland of Africa. It has an estimated area of two hundred and forty thousand square miles, and a population of about three and a half millions. The numerous rivers on the island afford only meager facilities for internal navigation. They spread into lakes in the low regions and are slow, shallow and feeble when they reach the seashore. Madagascar is noted for its india rubber and other valuable forest trees. The French claim a protectorate over the island.

This form of carriage, the highest known, is called a Filanzana.

A native carrier.

PRIMITIVE CARRIAGE IN CENTRAL ASIA.

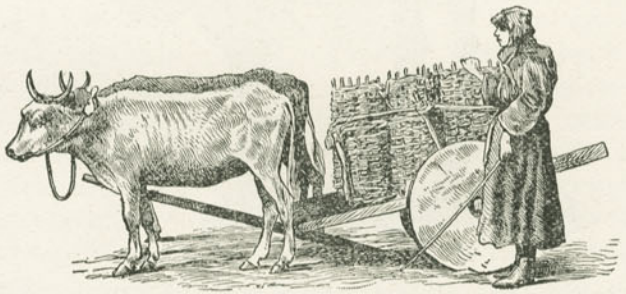
Central Asia has been the center of romantic interest in all ages. From this neighborhood the Huns, marshalled by the great Tartar leader, Attila, made their memorable raid into eastern Europe in A. D. 451. It was at one time thought to be the birth-place of the Aryan race. It is generally believed to be the original home of the horse and the ass, two of nature's greatest gifts to man, two of the greatest factors in the problem of transportation. The camel and Thibetan ox (yak) are still found here in a wild state.

The region of Central Asia or Turkestan (as it is often called) lies amidst gigantic mountain ranges without parallel in the world. A portion of it occupies an elevation so high and cold, and withal so dry, as to be uninhabitable. The plateau of Pamir has a mean elevation of sixteen thousand feet: that of Thibet fifteen thousand feet. Turkestan is aptly termed the backbone of Asia and the roof of the world. Its eastern and western sides are bordered by vast steppes, and these in turn by deserts still more vast. Its population is widely scattered and made up partly of nomadic

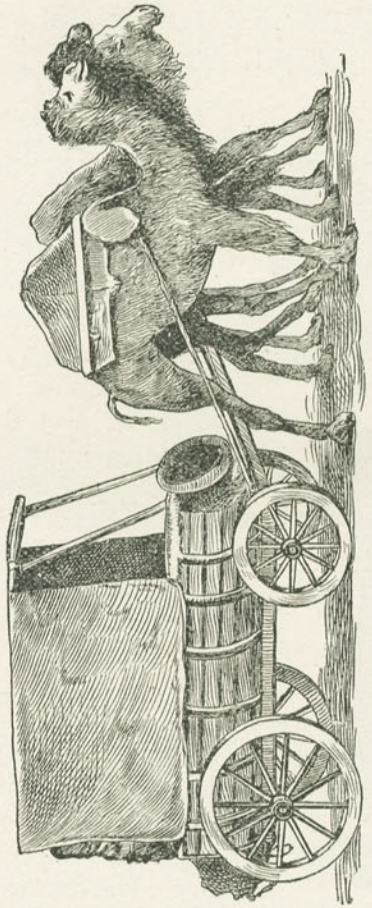
people, who take their flocks to the mountain valleys in summer and return with them to the villages in the foothills in winter. Methods of carriage in this inhospitable region are simple and primitive. Here the camel of the highlands differs from his fellows of the plains to the west

by taking on a heavy coat of wool as a protection against the high winds and extreme cold. In the western part of the country horses are large and highly bred; in the eastern section they are diminutive. The mule is much used in the lower country. There are no railroads in Central Asia if we except the Russian line that penetrates the

Caucasus. The area of Central Asia can not be defined within particular metes and bounds as England or France can. Generally speaking it is the vast and little known district lying south of Siberia, east of the Caspian Sea and north of Persia and Afghanistan, and embracing a portion of the western part of the Chinese Empire. It comprises in the neighborhood of two millions of square miles, with an estimated population of about nine and a half millions.



On the steppes of Central Asia.



In Khiva.

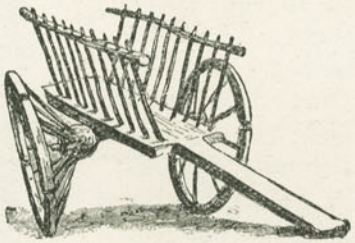
PRIMITIVE CARRIAGE IN ISLANDS—MISCELLANEOUS.

We naturally expect to find water craft predominating in island life. In the main the boats which belong to the islands of the north are modern, if we except the primitive dug-out of which several illustrations have already been given. In some cases the methods of land carriage are unique. Thus, in Madeira, passengers and freight are carried on sledges drawn by oxen, although the islanders never saw a snowflake. Palanquins are also used for carrying passengers. In Jamaica everything, practically, is carried on the heads of men and women. There are several great islands that deserve to be classed as continents. Many islands are embraced in the adjacent continent; this is so of Japan. Many stand out distinct. Others are grouped. The principal groups of the Atlantic, not to mention the British Isles, which form part of Europe,

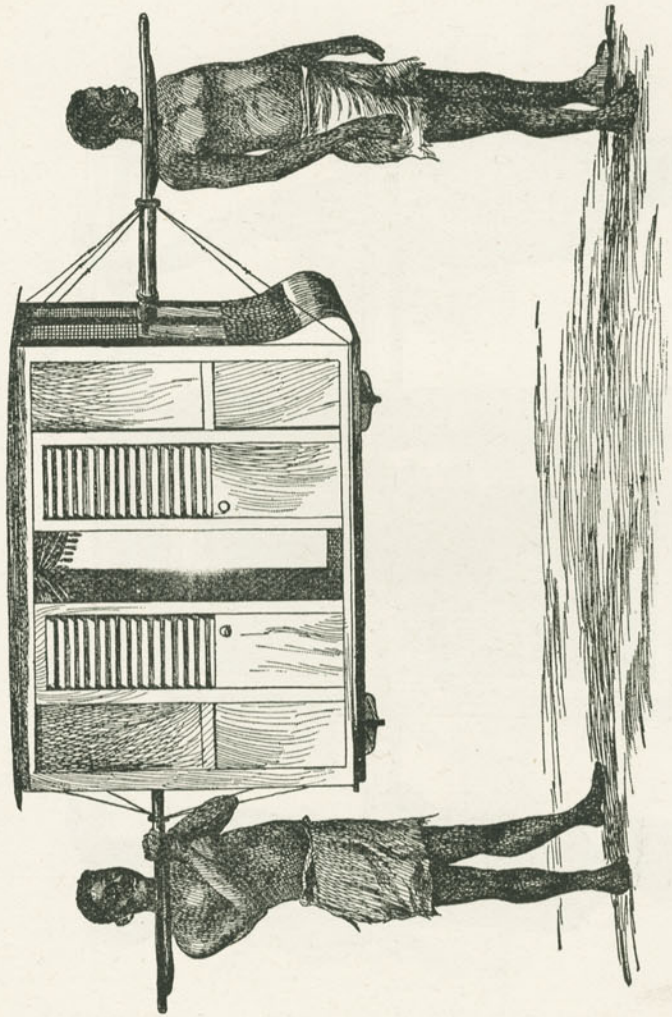
are the islands of the Greater Antilles, or West Indies, embracing, among others, Cuba, Jamaica, Hayti, and Porto Rico; the Bahamas, embracing about seven hundred islands, and, finally, Iceland and Newfoundland. The groups of the Pacific are the Kuril Islands, forming a part of the Japanese Empire; the Aleutians, off the extreme southwestern coast of Alaska; Queen Charlotte's, which forms a portion of British Columbia; the Hawaiian, or Sandwich Islands, in the line of commerce between California and China; eight groups in the Torrid Zone, as follows: The Carolinas, comprising a great archipelago; the Ladrones; the New Hebrides; the Fiji Islands; the Friendly Islands; the Society Islands; the Marquesas Islands; the New Zealand Islands, and, finally, the separate islands of New Guinea (Papua) and Australia, in the Southern Pacific.

Among the noted groups of the Indian Ocean are the East Indies, embracing Borneo, Sumatra, Java, Celebes, Luzon, and many other islands off the southeast coast of Asia; the Laccadive and Maldive group of coral islands; the Andaman

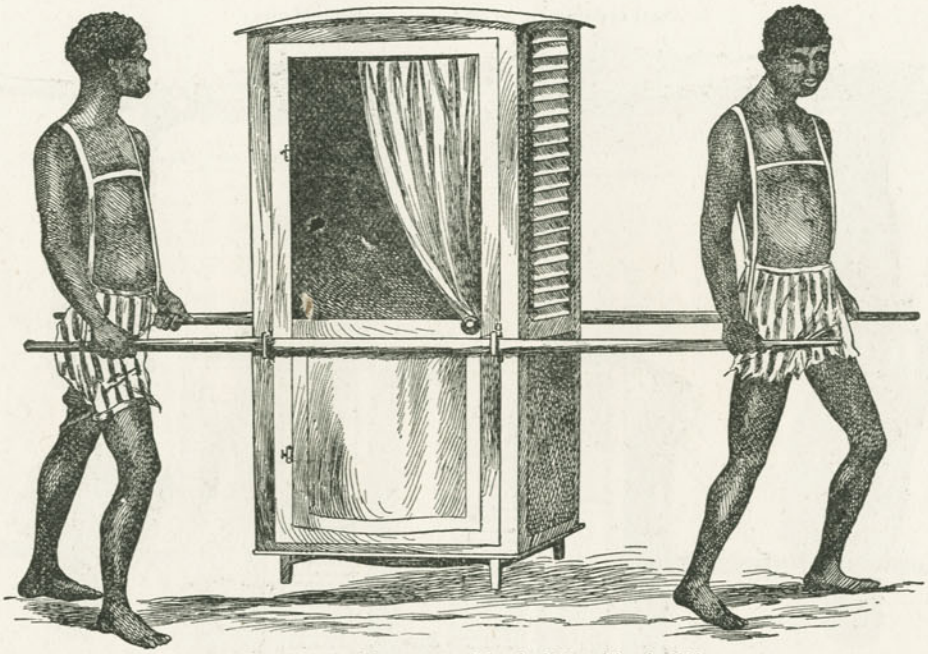
group in the Bay of Bengal; the Nicobar Islands lying farther south. The large single islands in the Indian Ocean are Madagascar, Mauritius, Bourbon, Socotra and Ceylon. In the Mediterranean Sea are the islands of Sicily and Sardinia, now included in the Italian kingdom; Cyprus and Malta, belonging to Great Britain; Rhodes and Crete, owned by the Ottoman Empire; Corsica, belonging to France; the Ionian group off the coast of Greece and owned by that country, and, finally, the Balearic Isles, under Spanish rule.



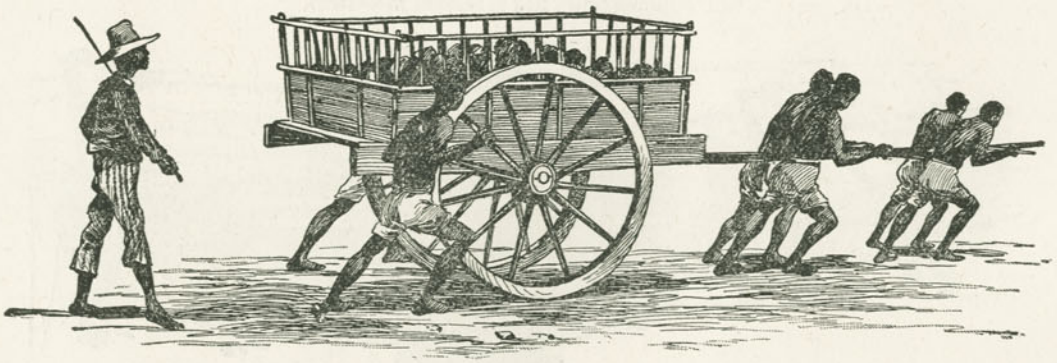
Primitive vehicle from the Island of Cyprus. This lonely island, lying fifty miles off the coast of the eastern Mediterranean, represents in its history greater vicissitudes of fortune, perhaps, than any other spot on earth. At one moment enriched, the center of a high civilization; at the next, its fortunes wrecked, it is the prey of one of the savage nations which surround it. Thus its fortunes have alternated many times. A few years ago it was dominated by the Mohammedan; to day it is under the beneficent rule of Great Britain. To-morrow it may be a province of Russia. Who can foretell its future or would wish to share its fortunes? Here many rude appliances of primitive ages have been discovered. In the early history of the Assyrian Empire, and before it contemplated the conquests which at once aggrandized and ruined it, we have an account of an Assyrian king who, visiting the Mediterranean (they called it the Sea of the Setting Sun, because it was to the west and supposed to be the end of the world), made an excursion to Cyprus. Afterward the island passed under the dominion of his savage descendants.



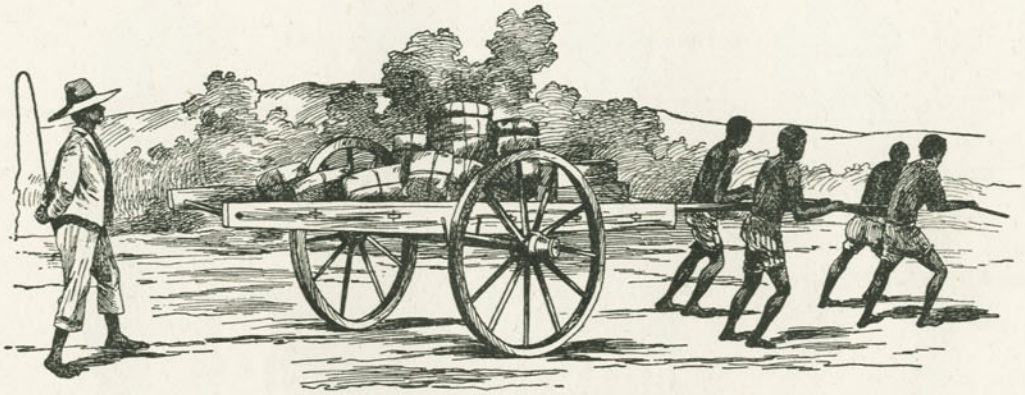
Palanquin used in the Island of Mauritius in 1728.



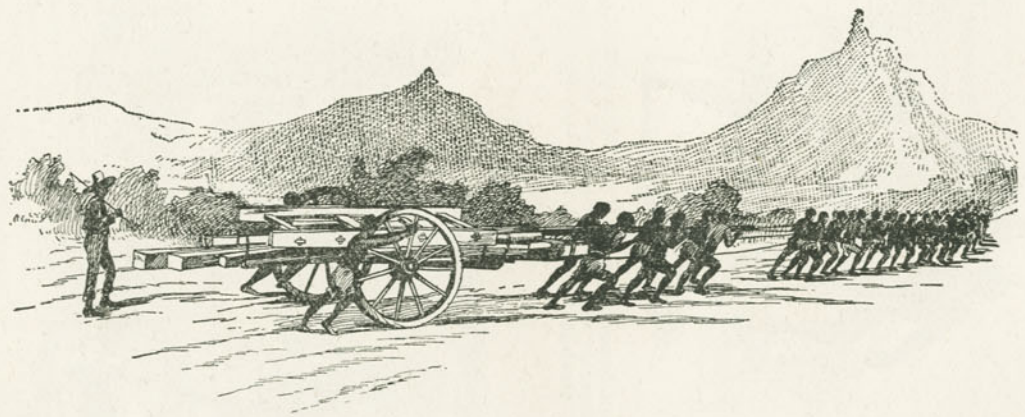
Sedan chair used by women, Island of Mauritius in 1728.



Farm cart hauled by slaves, Island of Mauritius, 1730.

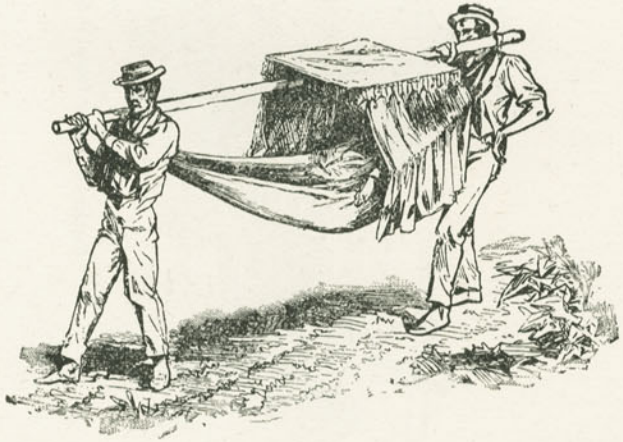


Carriage of baggage in Port Louis, Mauritius, 1725.

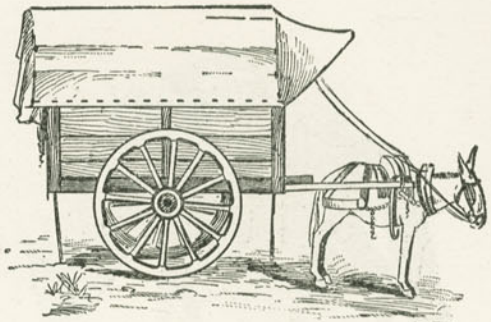


Carriage of timber from the forest to the dock, Island of Mauritius, 1732.

In New Castle, Jamaica. The city is situated on a ridge of mountains five thousand feet above sea level. The carriers, it will be noticed, rest the burden on their heads. This is the favorite method of carrying a burden in Jamaica.

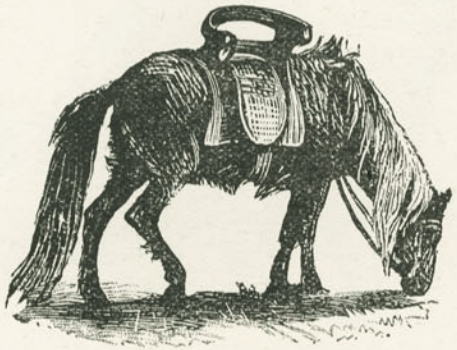


Carriage in Madeira.



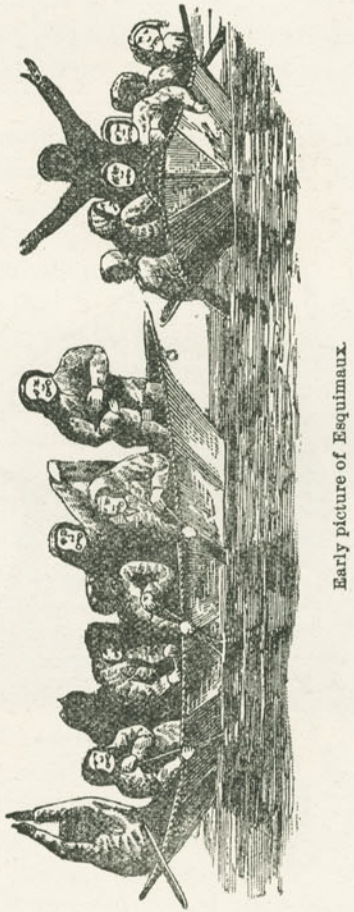
In Havana, Cuba.

A favorite vehicle in Madeira. The runners are shod with iron, to which an attendant applies a greased rag from time to time. The roads are paved with small stones, and have become so smooth with time and use that they render coasting possible on the hillsides. Carriages and similar vehicles are not used on the island, sleds taking their places.



Icelandic saddle horse for ladies.

Carriage in the Society Islands.



Early picture of Esquimaux.

A Polynesian craft.

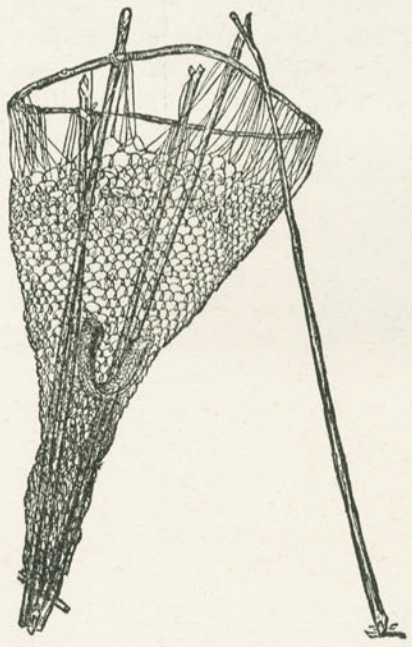
PRIMITIVE CARRIAGE IN THE UNITED STATES AND CANADA.

For four hundred years emigrants have pushed westward from the Atlantic, seeking homes in the New World of North America. The picturesque wagon train, drawn by oxen, carrying the hardy explorer and his family, are no longer to be seen; or, at best, but seldom. The land has been spied out to its utmost limit, and when it is necessary to reach the interior, other and cheaper means of travel than the ox train are present. Every means of primitive carriage is still more or less practiced in North America. In the far north, the reindeer and dog are factors; while in the mountains of the west the rude contrivances of the Indian are still to be met with. The horse, ox and mule are actively employed in connection with both local and through carriage. The ox is used

in the south and far west more than elsewhere. It answers the purpose, and is cheaper and more easily maintained than the horse. Moreover, when no longer useful, it may be fattened and killed. Where the ox is not used in the south, the mule stands in high favor. The camel promises to be a factor in some parts of the United States in the near future. It has been found especially adapted to the hot climate and deserts of Arizona. Nothing could be more primitive than many of the vehicles used in the interior of North America, away from the great cities. As a rule, new countries have little of interest about them except their natural scenery. But in North America the aborigines are objects of especial interest. Of noble bearing, virile, courageous and cruel, they will forever stand for ideal savages. Those who have succeeded them lack in picturesqueness, and their methods of carriage are new and commonplace. An old medieval cart excites interest; but a modern wagon, freshly painted, with the name of the manufacturer blazoned on its side, has nothing quaint or interesting to recommend it. While the great continent of North America affords a wide range of carriage, the forms now in general use are so familiar that it would be tiresome to reproduce them here. They are therefore omitted, except in so far as they are old and unique. The accompanying pictures, in the main, emphasize the life of the Indian and the period that attends

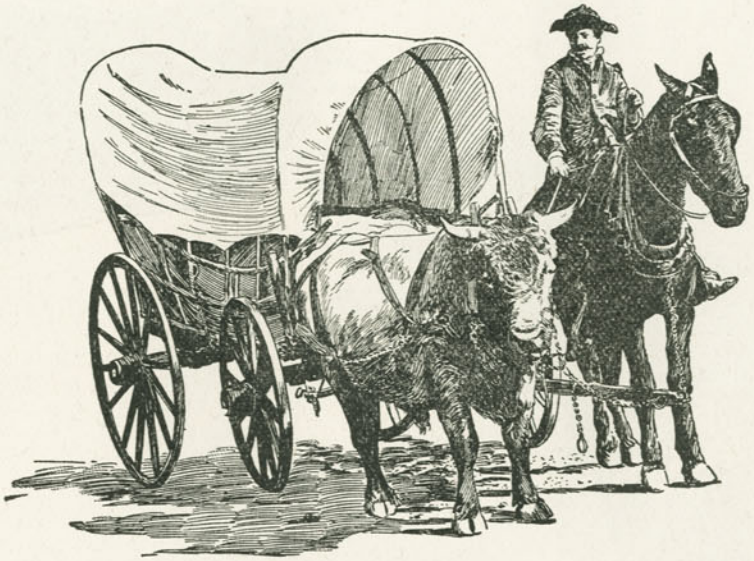
the opening up of a new country to civilizing influences.

Methods of carriage among the savage Indians of America are exceedingly crude. The basket is a favorite medium and many different forms are used. Each tribe has a basket peculiar to itself. In some instances these are strapped on the back, in others carried upon the head. They are made by the women of the tribe out of such materials as are most convenient for the purpose: the most common are willow, birch and other tough bark, grass, rushes, etc. The basket is a favorite means of carriage with savage people and has been in all ages, but not probably in any instance to the extent which it has been favored by the Indians of North America. Methods of carriage in Canada, bordering the United States on the north, do not differ materially from those of the United States.

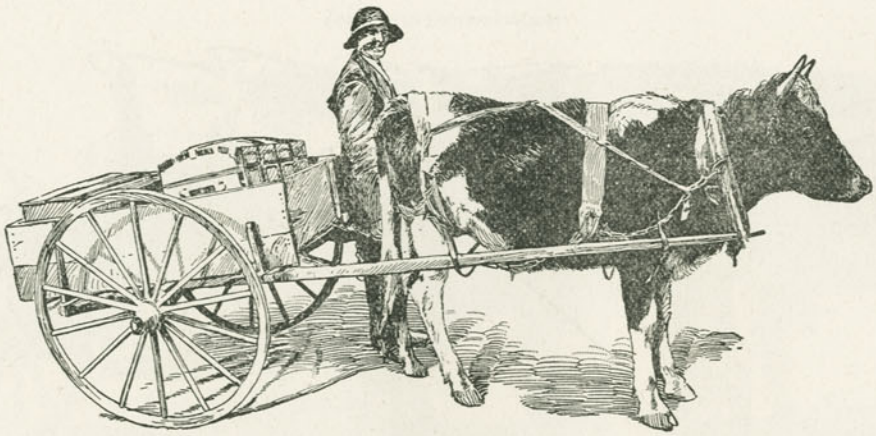


North America is bounded on the north by the Arctic Ocean; on the east by the Atlantic Ocean; on the south by the Gulf of Mexico; on the west and southwest by the Pacific Ocean. Its area covers nearly eight million square miles, and its population is in the neighborhood of eighty-eight millions. The area of the United States is three million six hundred and two thousand square miles, its population over sixty-three millions. The area of Canada is three and one-half million square miles, its population five millions.

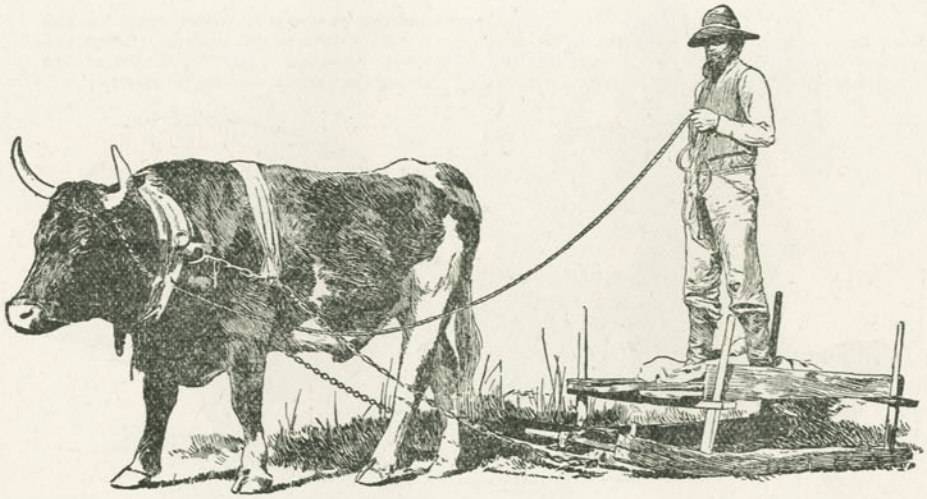
Carriage in the mountain district of North Carolina.



A scene in the streets of Asheville.

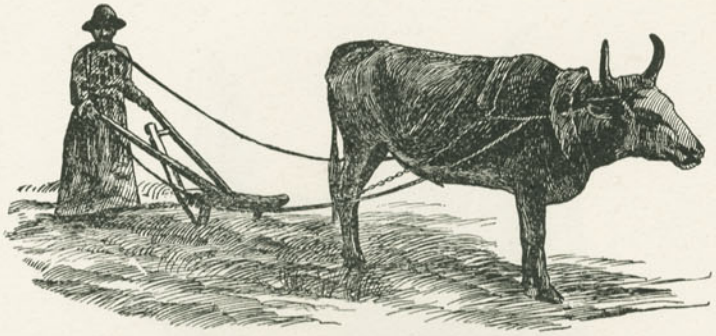


Carriage of baggage in the Blue Range. The rugged nature of the country and its isolation have perpetuated primitive methods. The ox is more frequently to be met with than the horse. The attractiveness of this section is very much enhanced by the great variety and, in many instances, quaintness of its means of transportation.



Carriage in South Carolina.

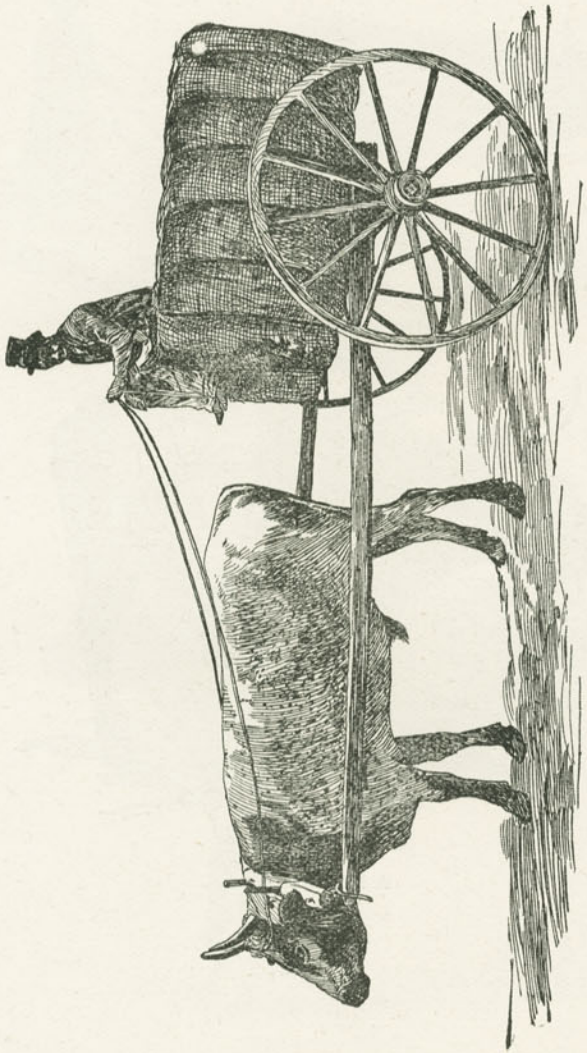
Market day in Georgia.



Farming in rural Georgia.

A scene in Alabama.

A Florida farmer.

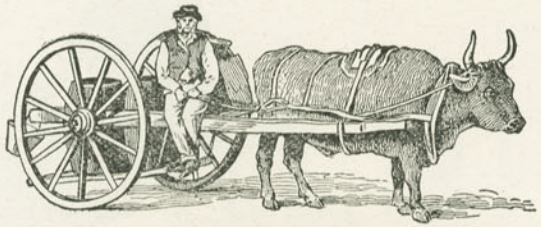


Marketing cotton in the South.

Another form of primitive carriage in the South.

Florida farmers. In carrying a load the person on the horse usually rides astride, sitting with the feet on the thills to prevent the cart from tipping backward.

Carriage in Manitoba in winter.



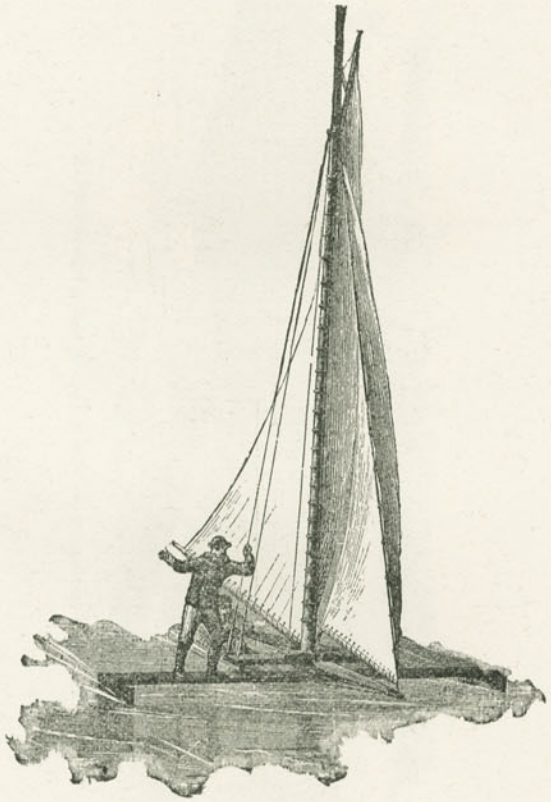
Water carrier of Winnipeg.

In the Red-river Country of the North.

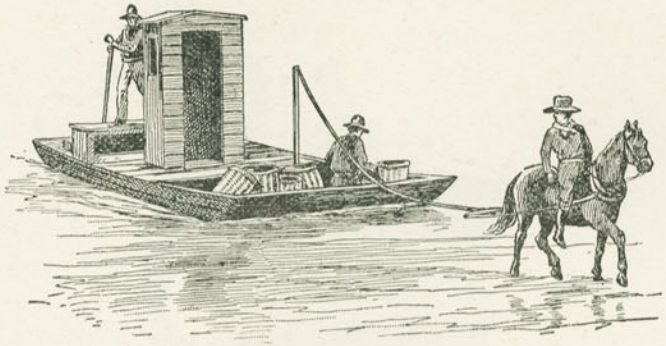
Old-world forms revived in the new.

Carriage in Arizona.

Primitive carriage on the Mississippi. Floating logs to market.



Ice yacht on the Hudson.



On the Allegheny river, Pennsylvania.

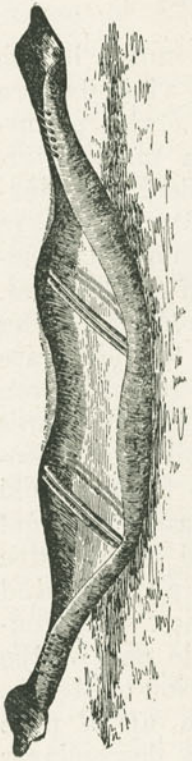
The North American Indian is at home on the war path or in the chase. Elsewhere he is inert and lazy.

Breaking a wild horse. Horses were introduced into North America by the Spaniards. They multiplied, and for many years vast herds, wild and untamed, roamed the interior wastes of the country. Many were caught and subdued by the Indians. There is a natural affinity between an Indian and a horse, and no better horsemen exist.

Water carrier. Her jar is made of twigs woven together and calked with hot pitch. Loops are fastened to the sides, to which the head-band of buck-skin is tied.

When Indians are on the march or have a great distance to traverse, two sacks or receptacles containing papooses (Indian children) are sometimes fastened together and thrown across the back of a pony, one on either side, like paniers. Usually, however, the squaws (Indian women) are compelled to trudge along carrying their children, following after the Indian bucks (men) and youth on horseback.

A North American Indian. Like all savages, the red man has no regard whatever for woman. Their relations are those of animals. An ancient Greek said that woman was delightful to man on his wedding day and on the day on which she was buried. This is an extreme way of looking at it, but the natural way for a savage. Affection and love are the outgrowth of high cultivation.



A piece of bark sewed together at the ends and spread in the center was one of the early devices of Indian savages for water carriage. It was light and could be made to skim over the water with great rapidity under the dexterous hand of its occupant.

An Indian birch bark canoe.

PRIMITIVE CARRIAGE IN MEXICO AND CENTRAL AMERICA.

No country in the world affords the lover of the picturesque a more interesting field than Mexico. Its ways are ideal from the standpoint of the traveler. Railroads are doing much to obliterate this, but off from these thoroughfares the habits of the people are those of old Spain and Portugal mingled with Aztec peculiarities and memories. A considerable part of the population of Mexico is made up of pure Indians, descendants of the mysterious races which held sway there in prehistoric times. Methods of

carriage in Mexico differ radically from those of her northern neighbors. They are partly modeled after those in vogue when the country was conquered by Cortez, partly after those of Spain. The traveler is continually reminded of the less frequented parts of the latter country. Mexican men and women are natural burden bearers, the most sturdy and dexterous in the world. Theirs is the acquired skill of many centuries, for before Cortez the natives had never seen an animal carry a burden. They had been in the habit of availing themselves of water carriage so far as possible, but on land the whole burden fell on men and women, and as the population was dense and civilization far advanced, the labor was a great one. The vehicles of Mexico are, in the main, similar to those of Spain. In the United States wagons with four wheels are the rule; in Mexico such vehicles are almost unknown, carts being used. The Mexicans are fond of horses and noted for their fine horsemanship. They have all the love of the Spaniard for finery in connection with the trappings of their steeds. Diminutive burros, (asses) with big heads, stout legs and compact bodies, outnumber many times all other kinds of Mexican carriers. The trains of these little animals that are to be met with every-

where continually remind the traveler of Palestine and Egypt. Indeed there is much besides to suggest the latter country. The donkey trains and picturesque Mexicans with their many-colored serapes and solemn oriental manners remind one more of the east than of the west.

Primitive carriage in Central America is not so full as in Mexico. The methods are largely those of new countries fashioned after modern forms. The community is not lacking in thrift and ingenuity, but it has not the picturesqueness of Mexico. Few countries have. Mexico, formerly called New Spain, lies in the southern part of North America. The country is a great ridge between two oceans. It has an area of about seven hundred and forty-one thousand square miles, and a population in the neighborhood of eleven millions. Central America is an irregular country lying between Mexico and South America, bounded on the east by the Carribean Sea and on the west by the Pacific Ocean. Its area is about one hundred and seventy-three thousand eight hundred square miles. and its population in the neighborhood of two millions seven hundred thousand. It is a mountainous region containing many high plateaus and volcanoes. The country is subject to earthquakes. The colony of Balize is governed by the British. Central America is republican. The names of the countries of which it is constituted

and their estimated area and population are as follows: Balize, seven thousand five hundred and sixty square miles, population thirty-one thousand, five hundred; Costa Rica, twenty-one thousand, four hundred and ninety-five square miles, population two hundred and thirty-eight thousand, eight hundred; Guatemala, forty thousand, seven hundred and seventy-seven square miles, population one million, two hundred and twenty-five thousand; Honduras, forty-seven thousand and ninety square miles, population four hundred and thirty-two thousand; Nicaragua, forty-nine thousand, five hundred square miles, population two hundred and eighty-three thousand; San Salvador, seven thousand, three hundred and thirty-five square miles, population four hundred and thirty-five thousand.

Mexico, for so many centuries downtrodden and misgoverned, owes its recuperation, present stability, growing trade and bright outlook to the firmness and wise political action of its great President, Porfirio Diaz.

Mexican aquador or water carrier. The native woman of Mexico works in the field as well as in the house, ever patient, hardy and industrious.

Mexican butcher delivering meat from a basket of woven split cane. A heavy pad under the basket serves as a protection to his back.

Carriage in Mexico.

A Mexican carrier.

A primitive Mexican vehicle.

A primitive form of carriage in Mexico.

Primitive Mexican ox cart.

A farm cart.

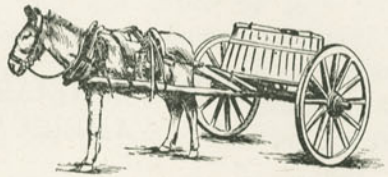
A strong team.

In rural Mexico.

A Mexican carrier.

A Mexican burro.

An early stage in the evolution of transportation.



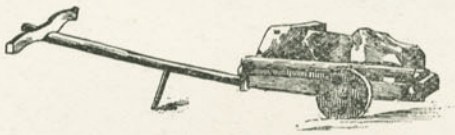
Carriage of water in Mexico.

In the Cordillera mountains of Honduras.

In the highlands of Central America.

PRIMITIVE CARRIAGE IN SOUTH AMERICA.

While North America did not contain a single primitive beast of burden when the continent was discovered four hundred years ago, South America possessed the llama, which the natives used for purposes of carriage, and still use. In some respects it resembles the camel, but is diminutive and a poor substitute for either the camel, ox or horse. The accompanying illustrations of carriage in South America are interesting and varied, considering the newness of everything.



One can not but be impressed with the vastness of the country and the devices that have been brought into play for cheapening and expediting primitive methods of carriage. Railroads are everywhere encouraged. The two wheeled cart, so seldom seen in the far north, is here a favorite vehicle, not only in the cities but on the vast pampas of the interior. In Brazil, which has a large negro population, many of the simple devices of equatorial Africa are noticed. The methods of carriage of the Peruvians are, on the whole, the most attractive of any. They resemble those of

Mexico somewhat, and are more or less permeated with the spirit of the ancient civilization of the Incas. They suggest the connection, impossible to define, between the civilization of a remote past and the present. In this far-off

country we are surprised to find vessels and rafts made of inflated skins, the same in idea as those used by the people of Central Asia three thousand years before our era. Is the coincidence a chance one; if not, whence the avenue of connection? In South America, as in other countries, every

device that can be made serviceable to facilitate and cheapen carriage is brought into play. In the vast unsettled portions of the country, as in North America, the bullock stands as the chief of carriers. Docile, he is easily kept, and when no longer useful will furnish his owner food.

This happy conjunction has made him a favorite in every age, and will so long as man possesses a stomach and has need of beasts of burden. South America is a great triangular peninsula connected with North America on the northwest by the Isthmus of Panama. It is bounded on the north by the Carribean Sea, on the east by the Atlantic Ocean, on the west by the Pacific Ocean, and on the south by the Antarctic Ocean. It is about four thousand eight hundred miles in extent from north to south, and its greatest breadth is about three thousand two hundred miles. Its estimated area is six millions eight hundred thousand square miles, and its population about thirty-five millions. Within its boundaries lies the

Amazon, the largest river in the world, four thousand miles long. British Guiana, Dutch Guiana and French Guiana are governed respectively by the British, Dutch and French. All the rest of the countries of South America are republics. The names of the various countries with their estimated area and population are as follows: Argentine Republic, one million one hundred and twenty-five thousand square miles, population, four million fifty thousand; Bolivia, seven hundred and eighty-four thousand five hundred and fifty-four square miles, population, two millions three hundred and fifty thousand; Brazil, three millions two hundred and nine thousand eight hundred and seventy-eight square miles, population, fourteen millions; Chile, two hundred and ninety-three thousand nine hundred and seventy square miles, population, two millions eight hundred thousand; Colombia, five hundred and thirty-three thousand two hundred and thirty-eight square miles, population, three millions eight hundred and seventy-eight thousand; Ecuador, one hundred and eighteen thousand six hundred and thirty square miles, population, one million one hundred thousand; Guiana, British, eighty-five thousand four hundred and twenty-two square miles, population, two hundred and eighty-four thousand nine hundred; Guiana, Dutch, forty thousand square miles, population, sixty-nine thousand three hundred; Guiana, French, twenty-seven thousand five hundred and sixty square miles, population, twenty-five

thousand; Paraguay, ninety-eight thousand square miles, population, one million, four hundred thousand; Peru, four hundred and eighty thousand square miles, population, two millions, seven hundred thousand; Uruguay, seventy-one thousand, seven hundred and forty square miles, population, five hundred and ninety-five thousand; Venezuela, six hundred and thirty-two thousand, six hundred and ninety-five square miles, population, two millions, one hundred and fifty thousand.

It is said that the llama was the only animal on the American continent, at the time of its discovery, that could be utilized as a carrier. The aborigines of South America thus used it. It is not only available as a beast of burden, but is also valuable for its flesh, hide and wool. These animals were often compared to sheep by the early writers. They were used in Peru before the Spanish conquest.

A Brazilian horse. Vast numbers of horses, sprung from the original European stock, roam in a wild state over the extensive plains of Southern Brazil.

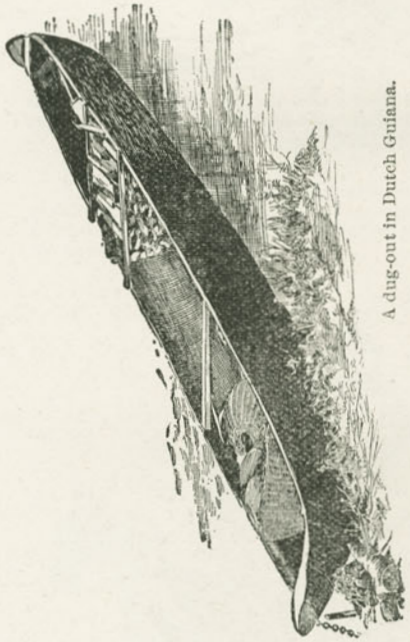
A traveler in Uruguay.

This illustrates a peculiar arrangement or panier, used in transporting passengers and freight in Chile. The goods are stowed away in the ample hampers at the sides, while the passenger sits between them on the back of the animal.

The "caleza," an old-fashioned Peruvian carriage.

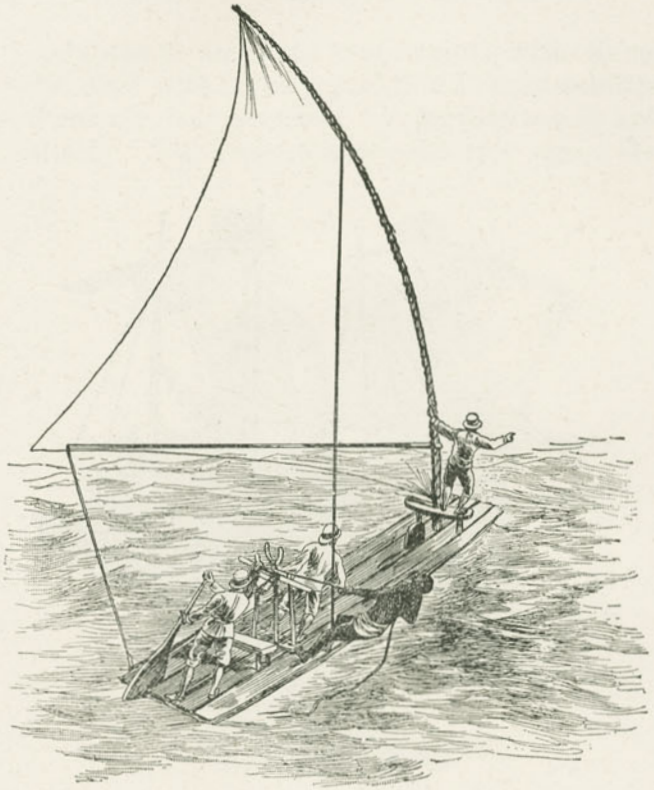
Cart used for the carriage of freight over the mountains and across the vast plains of South America. The thatched roof is at once cheap, effective and durable.

A picturesque form of carriage in Peruvian waters.

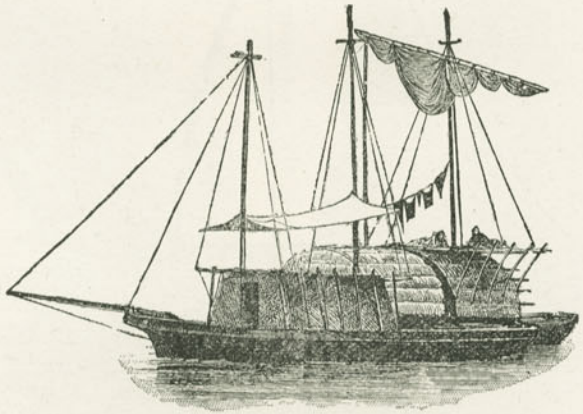


A dug-out in Dutch Guiana.

Flotilla of canoes in Dutch Guiana.



A jangada or light raft made of logs on which are fixed long masts with triangular sails. In these vessels the natives of northern Brazil sail through the surf, balancing the boat with skill, hanging on to the ropes and leaning over on the windward side.



Old picture of carriage on the Amazon River.

PRIMITIVE CARRIAGE IN ITALY.

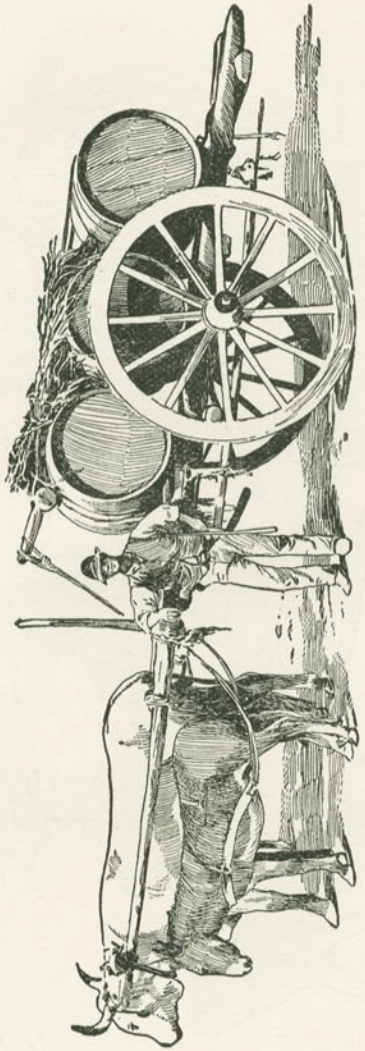
Italy was at one time synonymous with Rome and shared with it the reputation Roman soldiers and citizens had acquired for aggressiveness and brutality. This was many centuries ago. We

know the Italians and Romans of the present time to be the most amiable and lovable of mankind, much given to the soft pleasures of life and not at all actuated by a desire to tyrannize over

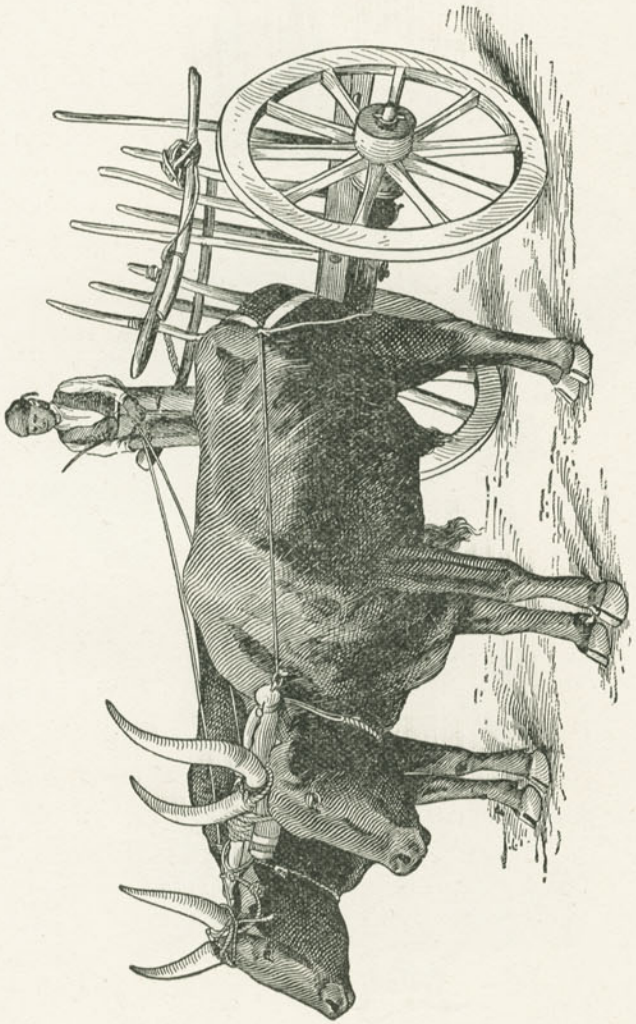
the world, or influence it unduly. No country in Europe, it is probable, save Spain, affords the traveler greater contrasts or more pleasurable sensations than Italy. The mild manners of its people go hand in hand with its climate. No harsh contrasts disturb the sensitive observer, and the people have lived under too many forms of government to allow mere matters of misgovernment to disturb their serenity or lighten the laughter with which they welcome the fast recurring holidays. Wide contrasts in methods of carriage present themselves in Italy as elsewhere. Beside her well managed railroads the peasant trudges contentedly with his burden, an uncomplaining competitor. Forms of primitive carriage are not plentiful. The gondola of Venice, the great bullock cart of Sicily and the huge vehicle of Rome, while interesting, are not new. The curious must look elsewhere for primitive forms.

Italy is a long and narrow peninsula lying in the southern part of Europe, separated from the rest of the continent by the Alps. It borders on the Mediterranean, Adriatic and Ionian Seas, and is traversed throughout its length by the Appennines mountains. Its area is about one hundred and fourteen thousand square miles and its population in the neighborhood of thirty millions. Sicily now forms a part of the Italian Kingdom.

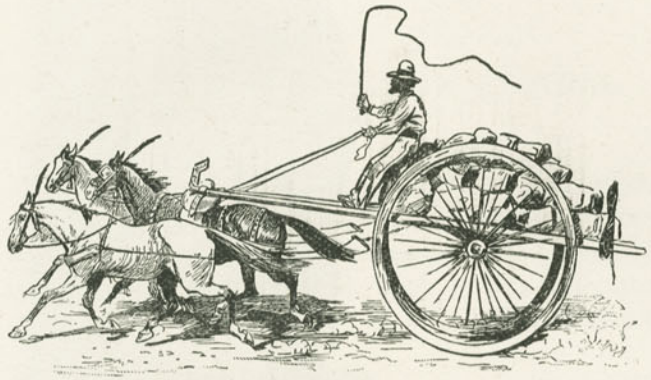
A Sicilian carrier.



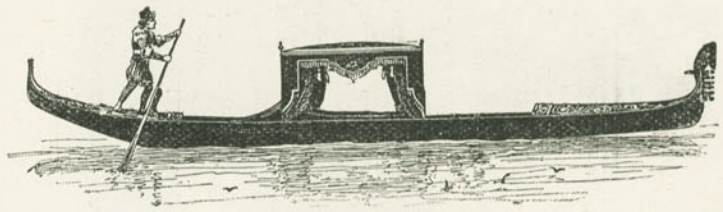
In Naples.



A Sicilian ox cart.



These carts, so noticeable in the cities of Italy, are like the huge vehicles used for hauling merchandise across the vast pampas of South America. A primitive cart somewhat similar to this, and drawn by three animals, is also used in central Asia, and is called an "araba."



A Venetian Gondola.

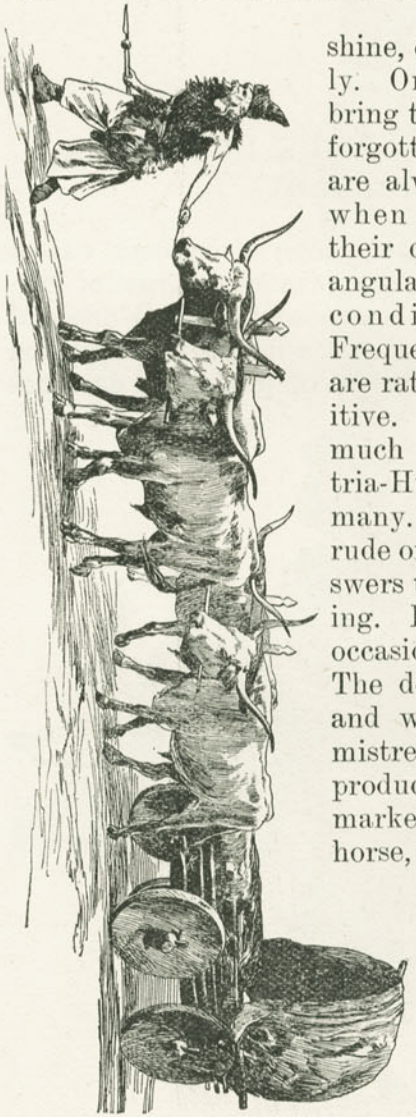
(436)

Going to market in Venice.

PRIMITIVE CARRIAGE IN AUSTRIA-HUNGARY.

In countries where a high civilization exists, as in Austria-Hungary, primitive forms of carriage due to the earlier conceptions and needs of men are only to be met with in unfrequented spots where the sunlight of prosperity does not

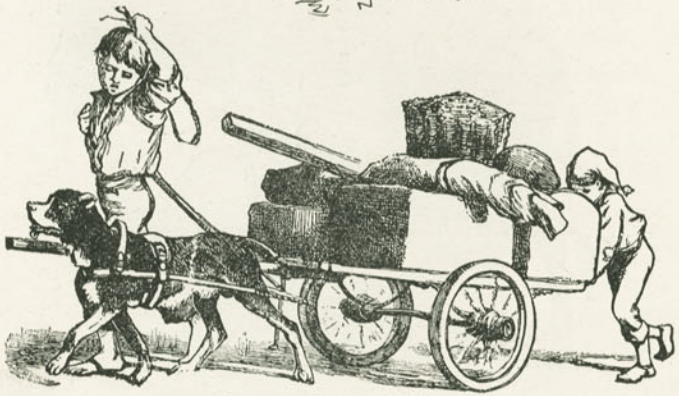
(437)



shine, or shines but faintly. Only research will bring to light these long-forgotten methods. They are always interesting when found, because of their quaintness and the angularity of thought and condition they suggest. Frequently, however, they are rather odd than primitive. Carriage is very much the same in Austria-Hungary and in Germany. No form is too rude or too simple, if it answers the purpose of saving. Even the pig is, on occasion, made to do duty. The dog is also a factor, and with his master or mistress helps to draw the products of the country to market. The ox, mule and horse, the great primitive agents of civilization in all ages, do duty here, as elsewhere, under like circumstances. Many of the forms of carriage portrayed, while primitive, are also stable.

The Austro-Hungarian empire is in Central Europe, and has an area of nearly two hundred and fifty thousand square miles. Its population is about forty-two millions. It abounds in picturesque scenery and contains numerous large rivers, the most important of which is the Danube. On account of its inland position and limited sea coast, the empire is not favorably situated for commerce. This obstacle is being rapidly overcome, however, by the general introduction of railways.

In the Tyrol.



A heavy load and a light team.

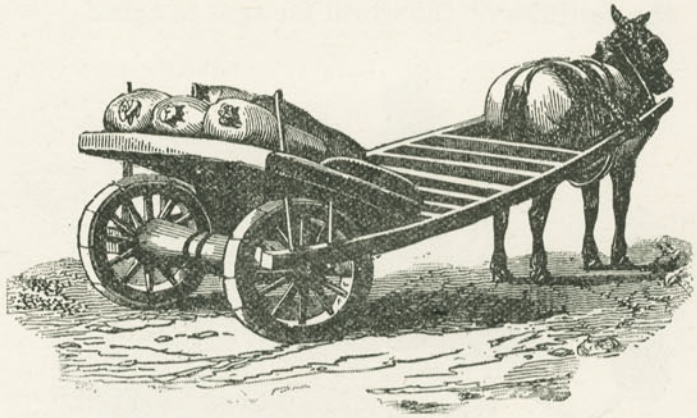
PRIMITIVE CARRIAGE IN THE BRITISH ISLES.

The same evolution in carriage has occurred in the British Isles as elsewhere, but evidences of the fact are not so plentiful. Old methods have given place to those that are new. A country so rich, progressive and enterprising turns instinctively to appliances of the highest utility. While

it may treasure things that are old because of associations or esthetic tastes, it has in matters connected with the humdrum affairs of life no sentiment. Utility governs in everything. The thrift and practical good sense of the people of the British Isles, in the long ages of comparative

peace that have blesssed them, have had full headway. In matters of carriage the comparative level of the country renders the general use of vehicles practicable so that such a thing as a pack-horse is hardly known at the present day, though they were common enough in the middle ages. Because of this we must not look to the British Isles for anything quaint in the way of transportation. One little city in Mexico will furnish the curious street observer with more picturesque specimens of carriage than London. The vehicles of Great Britain and the draft horses partake of the sturdiness of the British character. The great lumbering, shorthorn mammoth, ox, so popular in England, enjoys no such popularity elsewhere; other people want something more sprightly, something that can get along faster and that does not consume so much. But this animal just suits an Englishman. In everything pertaining to transportation the British are ahead of their neighbors on the continent. Their roads are better and there are more of them. Their vehicles are also better, as are their horses, railways and facilities generally. They were better two hundred years ago. The prosperity of the British Isles lies along common-sense lines and is based on a regard for material things, the only real foundation for prosperity. The United Kingdom of

Great Britain and Ireland forms an archipelago of islands and rocks separated from the western shores of Central Europe by the North Sea, the Strait of Dover and the English Channel. The area of the United Kingdom is about one hundred and twenty-one thousand square miles, and the population in the neighborhood of forty millions.

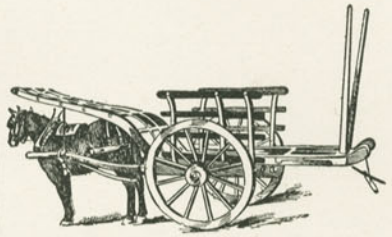


A Yarmouth cart.

The British Empire is the greatest in the world and the most splendid ever known to man. It extends into every zone and climate, and includes one-sixth of the land of the globe. We have no knowledge of any people, past or present, the equals of the English in the art of governing; in knowledge of good government, in enforcement of necessary checks and safeguards, or possessing their power of self-restraint, without which good government is impossible. The Victorian Era is

the greatest, thus far, in the history of man. Great Britain has shared in an especial degree in the prosperity that has attended it. How far the benefits mankind have received have been due to the wisdom and virtues of Queen Victoria, we can not tell, but that they have been great, no one will question, any more than they will the fact that her gracious personality will favorably influence the destinies of the world for ages to come.

Going to market in Connemara, Ireland. The temperament of the Irish people is generous, highly imaginative and poetical. The most glaring contrasts exist between the Irishman and his English brother. This dissimilarity has existed from the earliest times. Climate and food have had much to do with it, for when they come to the United States the difference disappears and one cannot be distinguished from the other. They both become Americans —and the best of Americans.

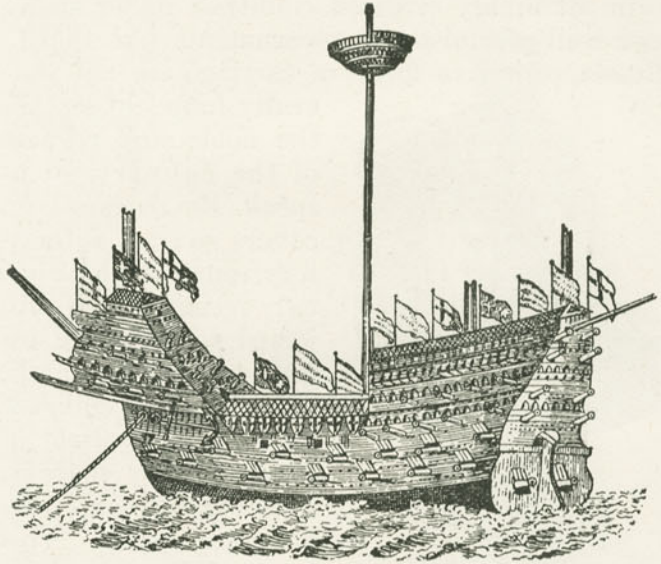


In the Island of Jersey.

The form of rack for baggage on the rear of this vehicle was introduced in 1616. In the early part of the seventeenth century coaches came into general use among the nobility and gentry of London, much to the disgust, it is said, of the watermen.

A state carriage in Queen Anne's time.

An ice boat on Loch Cobbinshaw.



Man-of-war, sixteenth century.

PRIMITIVE CARRIAGE IN RUSSIA AND SIBERIA.

In all highly civilized countries under stable and well administered governments like that of Russia, primitive forms of carriage are not generally found except in the nooks and corners of the country, so to speak. Russia, however, covers so vast a territory, much of which has only recently been subjected to civilizing influences, that her methods of carriage embrace an unusual variety of forms. Every country, however, has some predominating idea. This is so of Russia. It is the sledge. The long winters and superabundance of snow make this a means of carriage par excellence. The great rivers of Russia have, however, always been favorite avenues of communication and trade. While railroads are actively encouraged, the

extent of the country and its comparative newness and scant population prevent their general introduction. This necessitates other forms of carriage, and, in the main, primitive. The government encourages, and, in many instances, maintains, post horses and routes. It is said there are over one hundred thousand miles of post roads in Russia, and five thousand stations connected therewith, maintained by the government. In Siberia and the East the raising of horses, cattle and sheep is the principal industry. Forms of transportation conform, generally, thereto. Because of the extreme cold in Northern Siberia, dogs and reindeer are much used. Horses and cattle can not withstand the severe climate. In the Caucasus the camel is the favorite. In Russia proper the people are agriculturists, and as the industry is oftentimes barely self-sustaining, forms of carriage are necessarily the most

economical that can be devised. Russia, the largest state in the world, comprises the whole of the northern part of Europe and Asia. It has an area of nearly eight and a half million square miles, and a population of about one hundred millions. European Russia is bounded on the north by Norway and the Arctic Ocean, on the east by Siberia and the Caspian Sea, on the south by Persia, the Black Sea and the Ottoman Empire, on the west by Austria, Prussia, the Baltic Sea and Sweden. Its surface is a vast plain, enclosed on the east, south and a portion of the west by mountain chains. Siberia is included in Asiatic Rusia and extends from the Ural Mountains on the west to the Pacific Ocean on the east. It is bounded on the north by the Arctic Ocean and on the south by the Chinese Empire and Turkestan. In the western portion of Siberia are extensive steppes inhabited by the Cossack tribes, while in the north is a vast desert region peopled by tribes in the lowest state of barbarism.

Peasant women carrying rocks.

Circassian carriers.

In old Russia.

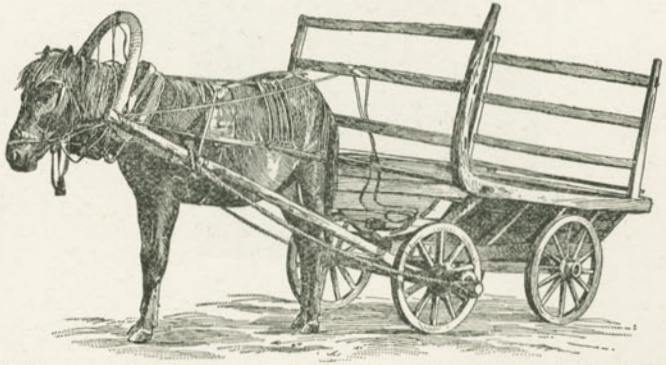
A common form of carriage.

In Moscow.

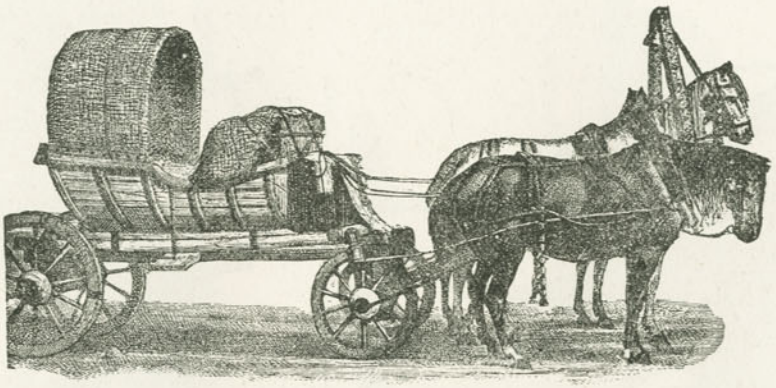
A common form of carriage in winter.

A farmer's outfit in eastern Russia.

A passenger carrier of the Caucasus.



By the use of the high circular yoke (duga), so universal in Russia, the shafts to which it is attached become fixed, making the whole a rigid frame.



A Russian telega, or a vehicle in which imperial couriers and travelers, who have not made other provision, are carried.

Carrying the mails between Kars and Alexandropol, Russia. The mail bags are carried behind the driver. An armed guard rides ahead.

Carriage in Georgia. The Georgians are distinguished for their high mental qualities, personal courage and love of music. The women are bold riders and sit astride the animals.

PRIMITIVE CARRIAGE IN GERMANY.

Primitive carriage rapidly gives place to forms less interesting in countries so much the center of interest and animation as Germany has been for many years past and promises to be for many years to come. In the by-ways of the empire, however, the Genesis of transportation may still be studied. Here we find the cow and horse yoked complacently together, or in their place, perhaps, the stalwart, honest-hearted peasant woman and the not less stout and patient ox or donkey. Dogs are utilized where the roads permit. They draw the carts, and when their strength fails man supplements it with his own. No one is idle. In the north in winter ice-craft, in a measure, take the place of the boats used in summer. On the Rhine and other waters many heavy, slow-going vessels, modeled on old lines, ply back and forth. Among the hard-working and saving people nothing is frittered away, and the forms of carriage that

Of primitive forms of carriage of the present day, there are some exceedingly interesting and unique which were unknown to the ancient people. Thus, the dog as a carrier was not used in primitive times, while to-day, in some portions of Europe, he renders general and effective service. This is especially true in Germany, from whence the above picture was obtained.

their gains render possible, or ingenuity or economical habits suggest, are employed. Mere sentiment is not allowed to interfere. The necessity of the situation is too great; the struggle for life too severe.

Germany is bounded on the north by the North Sea, Denmark and the Baltic Sea; on the east by Russia and Austria; on the west by France, Belgium and Holland; and on the south by Austria and Switzerland. It has an area of about two hundred eight and a half thousand square miles and a population in the neighborhood of fifty millions. The central part of Germany is a region of plateaus; in the south the country is mountainous; in the north low.

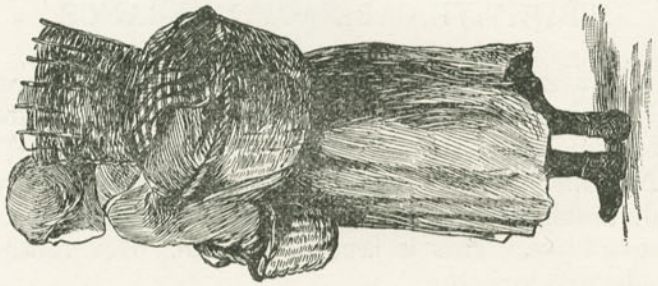
German karen, used in the early part of the sixteenth century.

Carriage in Saxony, A. D. 1584.

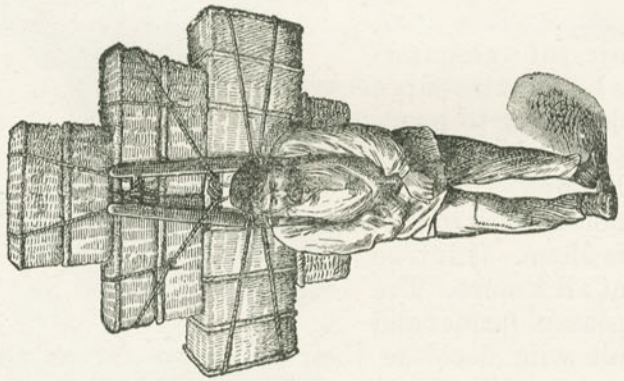
A Frankfort-on-the-Main coach, A. D. 1667.

PRIMITIVE CARRIAGE IN FRANCE.

If a man were to drop from the clouds upon French soil the first cart he saw would lead him to exclaim, "I am in Europe—probably in France!" Nations have a distinct personality, not clearly definable always, but nevertheless real, just as men have. This is true of France. Her methods are original. Those connected with carriage are especially so. They are in everything effective. Plain and simple, there is an air of elegance about them; a deference to men's taste peculiarly French. This is not confined to Paris alone. It is true of all France. The peasant farmer and his wife decorate their steed, so far as their means will permit, as conscientiously as they do their own persons. The good taste of the French people makes everything they attempt of



In Nancy.



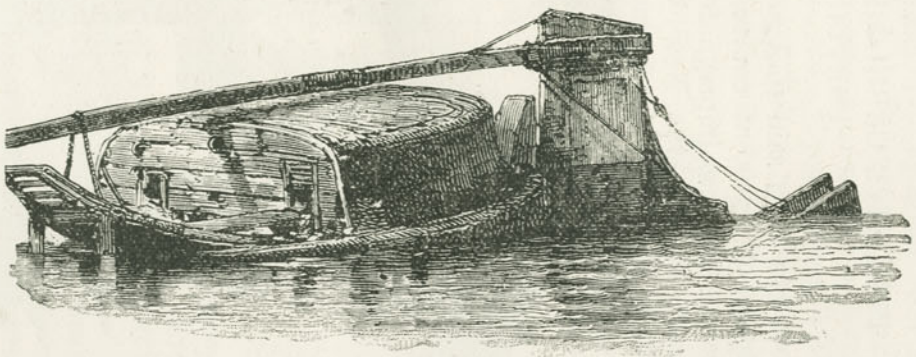
A Parisian porter.

a decorative nature effective. Devices of primitive carriage are not plentiful in France. Indeed, even the evidences of initiatory processes were long ago swallowed up in the changes and wars that have occurred. Make-shifts are not lacking, but they are not primitive.

French men and women are great burden bearers. All saving men and women are. It is probable the French peasantry are the most economical in the world, and necessarily so. No saving is too small. On such accumulations they build up great fortunes, and the nation great wealth. From a picturesque point of view we could wish there were more reminders of ancient Gaul among the methods of carriage in use to-day. While they might not be useful they would be interesting. But these evidences of the past have been swept away; have given place to more effective devices of the present time. The French are impatient of obsolete things; everything must conform to the progressive ideas of a prosperous, wealthy, saving and alert people. France is situated in south-western Europe. It is bounded on the north by the English Channel, the Straits of Dover, and Belgium; on the east by Italy, Switzerland and the German Empire; on the south by Spain and the Mediterranean Sea, and on the west by the Atlantic Ocean. It covers an area of two hundred and seven thousand, one hundred and seven square miles, and has a population of about thirty-eight millions of people.

A French diligence in the Pyrenees mountains. These vehicles consist of three compartments: the front, called the *coupe*, for three persons; the second, called the *interieur*, for six persons; and the *rotonde*, entered from the rear, for six persons. Above in front is the *banquette*, where the conductor is seated, and behind this, underneath a thick leather covering, passengers are sometimes huddled among the baggage.

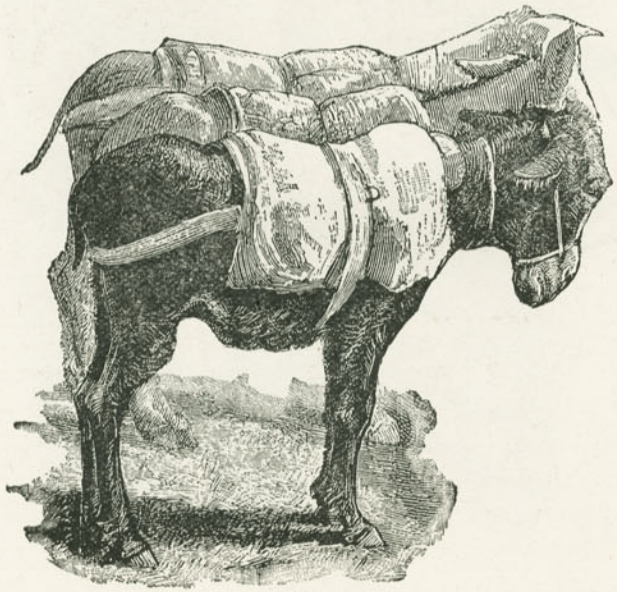
A cart of the time of the great king, Louis XIV.



A barge on the Seine.

PRIMITIVE CARRIAGE IN SPAIN AND PORTUGAL.

It has been said that no one ever hurries in Spain. This is, of course, not true. But that people are less impregnated with the frenzy of haste than in the New World is so, without doubt. Everything, including railroad trains, goes forward in a dignified way. The Spanish people are exceedingly picturesque and their



(468)

dress noticeably so. The peasantry, while restricted in their wardrobe, nevertheless in its arrangement and coloring, obtain the best effects. Not satisfied with carefully decorating himself, the Spaniard displays even greater zeal in decorating his steed. His saddle is resplendent with gorgeous trappings, his bridle a mass of ornamentation. The despised mule of other countries is here a royal animal, covered with tinsel and rich cloths. But there is no greater zeal displayed in getting work out of him than there is in getting work out of railroad trains. Everything is done with due deliberation. What matters it—looking back through the dim vistas of time to the Iberian kingdom and the conquests of Hasdrubal and Hannibal, what has Spain ever gained by haste? Therefore, no Spaniard will hurry. He wraps his cloak about him and meditatively pursues his way.

Carriage is much more interesting in Spain than in England or France. On every street and highway we observe highly wrought pictures; the blending of attractively dressed men and women in active and animated life. Man and

wife are one here in their efforts to keep the wolf from the door. Indeed, there is a snap and vigor about the Spanish women that is oftentimes lacking in the men.

The Portuguese are much like the Spaniards in their methods of transportation. There is the same love for the donkey, though less disposition to decorate him. The same rude carts, the same slow gait. But going further back than Spain, the palanquin of other days is still a favorite in Portugal.

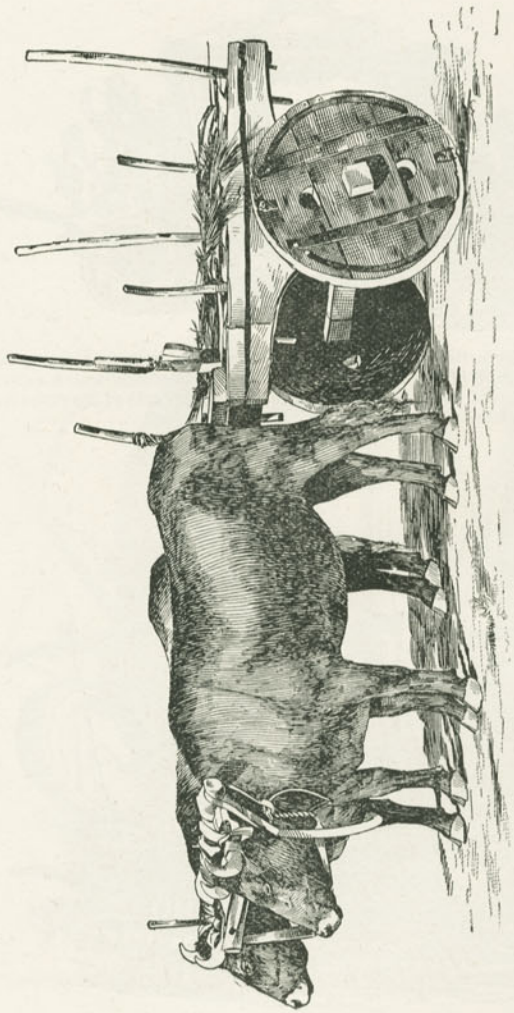
Spain and Portugal are situated in the southwestern part of Europe and together constitute what is known as the Spanish Peninsula. This peninsula is bounded on the north by the Pyrenees Mountains and the Bay of Biscay, on the east and south by the Mediterranean Sea and on the west by the Atlantic Ocean. The area of Spain is about one hundred and ninety-seven thousand square miles, and its population nearly seventeen millions. Portugal occupies the western part of the peninsula. It is a parallelogram in shape, three hundred and

forty-five miles long and one hundred and forty miles wide, having an area of thirty-four thousand five hundred square miles. Its population is said to be about four millions.

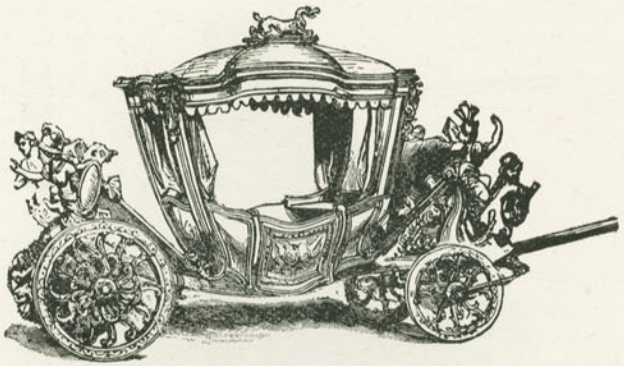
Carriage in Estella.

On the road in Andalusia.

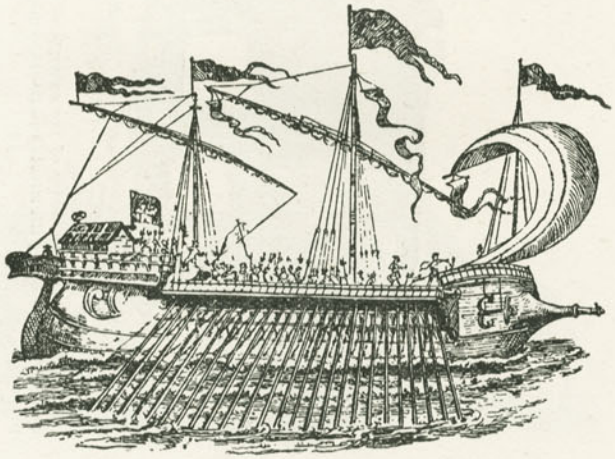
Carriage in the mountainous districts of Portugal.



A Portugese cart. Some of the customs of the Portugese people are peculiar. Thus, the milk peddlers drive their cows along the streets and milk the quantity required at each door as they proceed. Thus is distrust prevented.



The state carriages of the seventeenth century represent, it may be said, the introduction of the many different forms of carriages which exist at the present time, and which make the streets and boulevards of our cities marvels of animated life and social splendor.



A Spanish war vessel, 1588.

The "Santa Maria," the boat in which Columbus sailed to America in 1492.

An old Spanish Galleon

PRIMITIVE CARRIAGE IN EUROPE—MISCELLANEOUS.

Primitive carriage is common in Europe only in the sense that men and women still bear burdens. Many methods of carriage are quaint and picturesque, and wide contrasts exist. In the extreme north the reindeer and dog are the great factors. The use of snow-shoes is there necessary to those who seek to get across the country on foot. Many things have undergone little change for thousands of years in Switzerland. On the steep hillsides men draw rude plows as they have always done. The combination vehicle—half sled and half wagon—is still to be met with. In Bulgaria and thereabouts the vehicles are picturesque, primitive and poor—dilapidated, in fact; so old and forlorn as to be attractive.

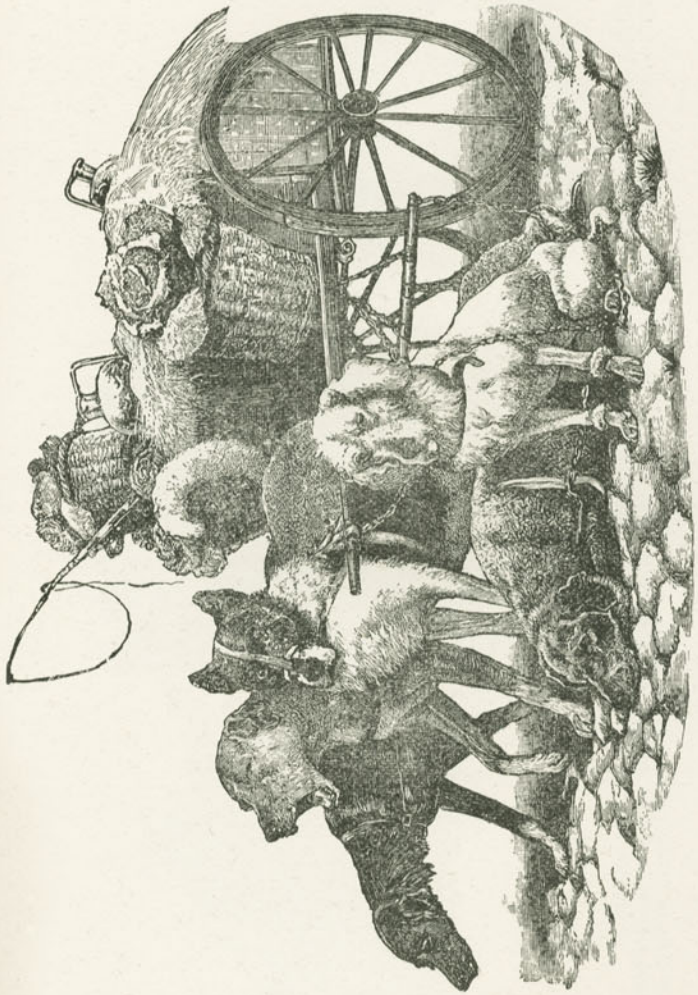
An interesting feature of carriage on the continent of Europe, to Americans at least, is the general use of dogs as draft animals. This would not be possible in either of the Americas, where highways are notoriously bad, but in Europe the dog renders effective service. The accompanying illustrations of primitive carriage in Europe, in countries that have not been given separate headings, are more attractive than would be supposed. Utility seems to be sought by the inhabitants, and outlay for ornamentation avoided.

Economy is the governing principle. The gorgeous trappings of Spain, the smart trimmings of France, and the heavy appliances of England are noticeably absent.

The Laplander. The country is sparsely peopled. There are no towns, and the villages are shifted about according to the exigencies of fodder or fuel. The reindeer of Lapland corresponds to the horse in England. When, however, it is no longer serviceable or convenience prompts, it may be eaten. It is more hardy and requires less food than the horse. It is somewhat like the camel in its ability to get along without man's aid.

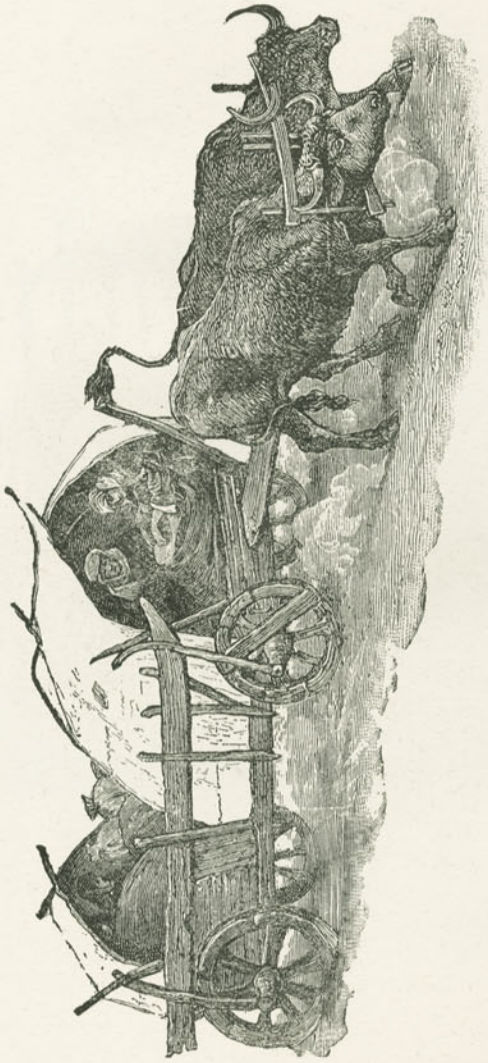
Snow shoes, or skees, similar to the above have been found the most available implements that can be used for traversing on foot the vast snow fields of the north.

On a down grade in Lapland.

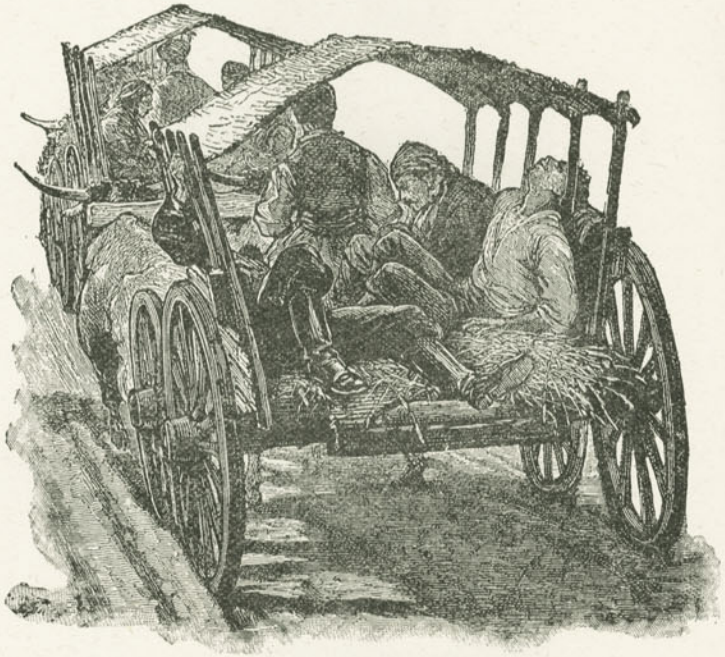


A vegetable cart in Antwerp, Belgium. The use of dogs for drawing vehicles, milk, vegetables and light burdens is very general in central and northwestern Europe.

A passenger coach in Holland.



In Bulgaria. Improvements have been retarded in this country by constantly recurring wars and political disturbances during the whole course of its history. The roads are bad, and the vehicles used are in the majority of instances primitive in the highest degree.

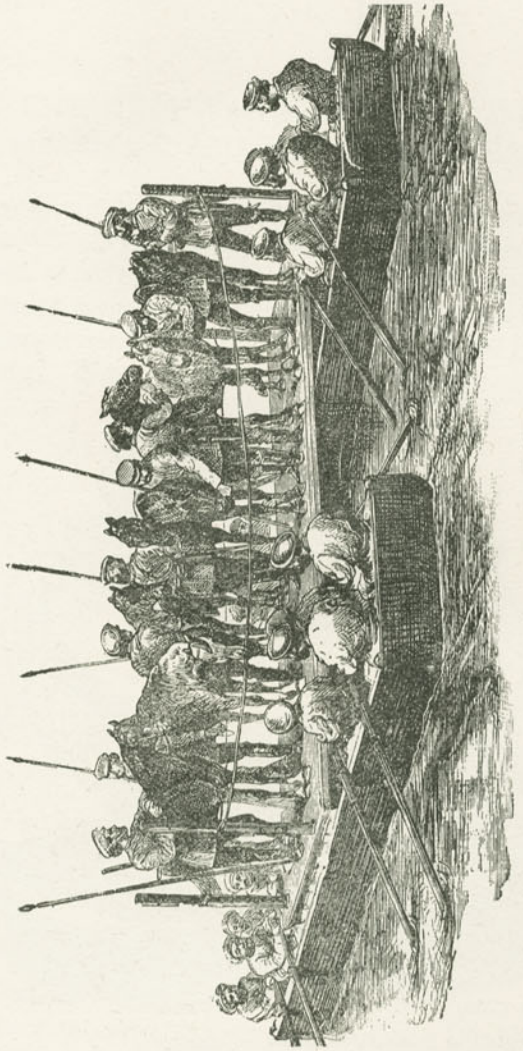


A scene in Servia.

A Servian wagon. It is constructed wholly of wood except a rude metal spring. The octagon and oblong wheels to be met with in western China vie with the above in oddity.

On the road near Rustchuk, Bulgaria.

In Dutchland.



Russian troops crossing the Danube.

On the Maas River, Holland.

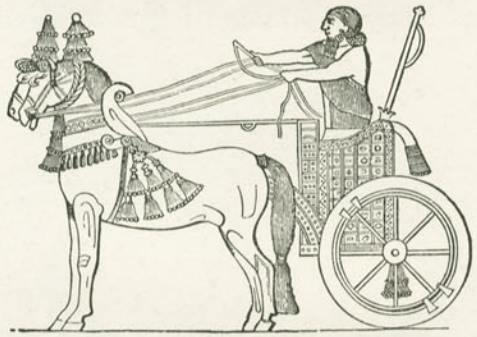
Going to market in Holland.

ANCIENT, MEDIEVAL AND MYTHOLOGICAL FORMS OF PRIMITIVE CARRIAGE.

The ancients (the first people of whom we have any account) had made considerable progress in the art of carriage-building. The Assyrians were the most expert of their time. They possessed constructive ability and considerable taste in decorating. They dominated for several centuries

the region about the Tigris. No more bloodthirsty or avaricious people ever lived. Their cruelty was as great as that of the wild Indian. They were overthrown about B. C. 625. The Assyrian chariots were modeled after those of the Chaldeans.

The first of the latter of which we have mention were those of a king of Agade about B. C. 3800. The Chaldeans were in some respects the most interesting people of extreme antiquity. From them came, it is thought, the enlightenment of the West. They were peculiarly mild and amiable, fond of trade, withal, and much given to religious speculation and star-gazing. Like all people who have been great conquerors, the Assyrians were fond of horses. The Persians



had a similar liking. So had the Greeks and Romans. The chariots of the Egyptians were copied after those of the East. Among ancient illustrations of carriage, we have one of an Elamite cart B. C. 700. The chariot was a readaptation of the cart. Four-wheeled vehicles came later. The so-called Persian carriage was merely a stout covered wagon without springs. It was, however, esteemed a kingly luxury. It is unfortunate that the drawings we have of the chariots

of ancient Assyria and Egypt affords us, in many instances, only a rough outline. Details would be exceedingly interesting. The pictures were not drawn, however, to illustrate carriage. That was a minor incident.

The ass is associated with the most ancient illustrations we have of carriage. It is probable

it was tamed before the horse. So far as we know, they both had the same Asiatic origin. Coming down to medieval times, we find the chariot and rude wagon have become a heavy coach. But little progress had been made, however. The coach too often lacked the decorations and artistic lines of the ancient chariot.

Mankind rested content for ages, making little progress. The last sixty years have wrought greater changes than the preceding five thousand.

The war chariots of ancient times were also used for carrying passengers and merchandise. Later on they were used in the great races of Greece and Rome. Of all the sports of ancient times chariot racing was the most splendid and the most popular.

The people of medieval times were scarcely more enlightened than the ancients. To be sure, they no longer exposed the hopelessly sick by the wayside, hoping that some passer-by might suggest a remedy. Nor did they light fires to drive away pestilential miasmas, as in the days of Pericles. They were, however, as absurd in other things, but nothing that we know of the ancients exceeds in grotesqueness or horror the burning of witches in the eighteenth century, or the persecution of men for religious beliefs in our day. The people of the medieval age were scarcely less savage than the Thracians of ancient times, nor were

their rulers hardly less oppressive than the Assyrian kings.

Until the nineteenth century progress in carriage building was retarded by poor roads, the narrow streets of cities, the poverty of the people, the general insecurity that existed and the lack of an exalted idea. Extended travel was impossible in the classical and medieval ages. Traffic on land was light and confined to neighborhoods. On the water it was more extended.

The pirates that infested the sea might be evaded or fought off. But land pirates (the robber barons of the middle ages among them) were not to be evaded. They robbed all alike. And as they left little to the wayfarer, extended intercourse was impossible.

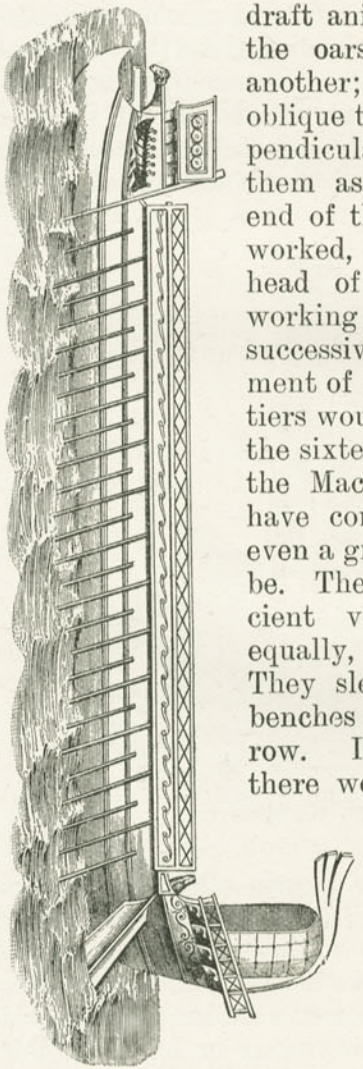
The Phœnicians were, so far as we know, the first to make extended journeyings for the purpose of trade. The Chaldeans also carried on a more or less extended trade with surrounding countries. But aside from these instances there

was but little trading except along the Mediterranean and Red seas. The vessels of the Assyrians and neighboring people were exceedingly crude. It is not until we reach the Mediterranean that we come in contact with a maritime people—a people who displayed the same taste and ingenuity in fashioning water craft that the carriage maker of to-day displays in constructing his vehicles. The people of the Tigris and Euphrates were satisfied to float on inflated skins, their bodies immersed in water; or, if luxurious and powerful, were carried in rude boats or on rafts. The people of the Mediterranean. on the other hand, grasped the art of shipbuilding as we understand it.

From discoveries in the tombs of Egypt we know row boats to have been used there as far back as B. C. 2500. We have also representations of vessels used on the Mediterranean B. C. 1200. These latter had from twelve to twenty-two oars apiece. In some instances the vessel had as high as forty. The Phœnicians had ships with two banks of oars as early as B. C. 700. Herodotus speaks of Egyptian ships with three banks of oars as early as B. C. 610. Alexander the Great constructed vessels with ten banks of oars, and at the time of his death had just finished a fleet of ships with seven banks of oars each designed for use along the Persian Gulf. The Macedonians are said to have constructed ships with sixteen banks of oars about B. C. 170.

Much confusion exists among naval archæologists and others who have given the subject thought as to just how the oarsmen were arranged in these ancient vessels. Some writers, indeed, go so far as to assert that no one can now tell what a bank of oars consisted of. It is

probable — indeed, we know — that the rowers were not arranged the same in different vessels. There was, it is probable, the same difference in regard to this that there is to-day in the manner in which people in different sections of the world hang the sails on their vessels or harness their



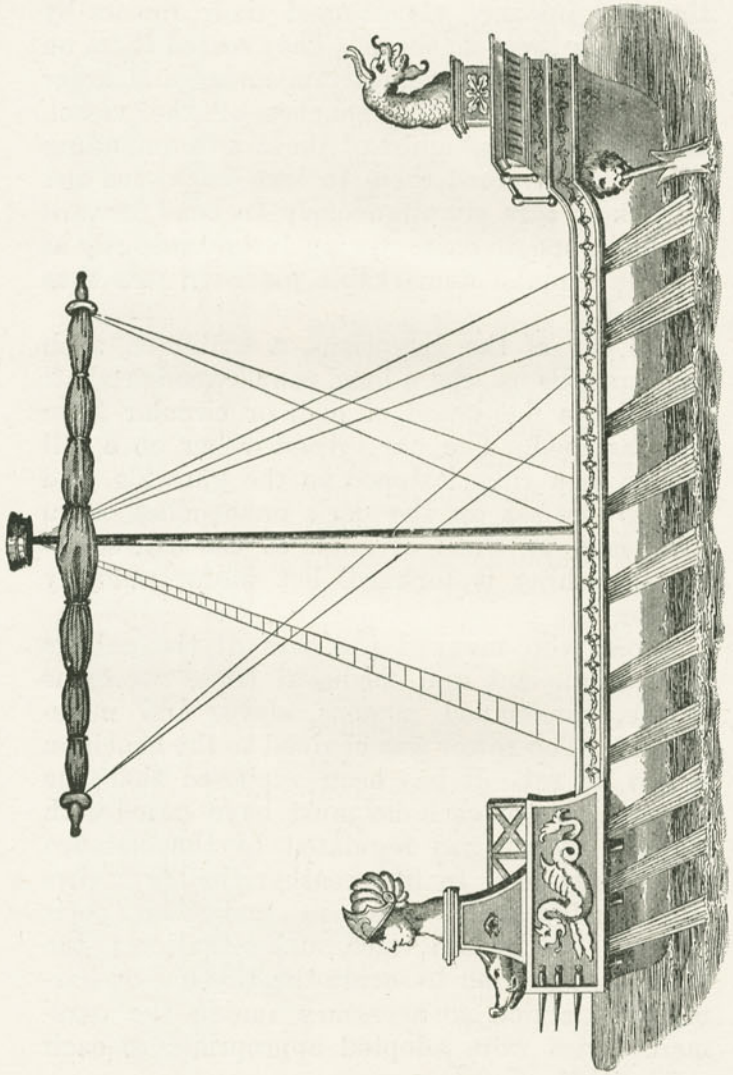
draft animals. In some cases the oarsmen sat one above another; in other instances in oblique tiers "with such a perpendicular distance between them as to allow the inner end of the second oar, being worked, to pass clear of the head of the man who was working the first; and so on successively." The arrangement of the rowers in oblique tiers would render practicable the sixteen banks of oars that the Macedonians are said to have constructed, or, indeed, even a greater number if need be. The oarsmen on the ancient vessels were divided equally, half on each side. They slept and lived on the benches on which they sat to row. It is said that while there were oftentimes many tiers of rowers in a vessel and some oars were longer than others, there was only one strokesman to each vessel.

Polybius relates that the Romans in

the first instance accustomed their rowers by exercising them on shore. They seated them on the beach in the same arrangement and order they occupied on the benches of the vessel, and placed in the midst of them a commanding officer, who trained them to lean backward and pull their oars simultaneously, to bend forward together, and to cease rowing instantaneously at a given signal. Remarkable precision was thus reached.

The oar of the Egyptians, a writer on such matters tells us, was a long, round wooden shaft to which a flat board of oval or circular form was fastened. The oar turned either on a toll pin or in a ring fastened to the gunwale, and the rowers sat on the deck on benches or on low seats, or stood or knelt to the oar, sometimes pushing it forward, but more generally pulling it.

Those who manned the oars of the galleys both in ancient and medieval times were, as a rule, condemned persons, slaves and malefactors. The rower was chained to the bench on which he sat. It has been supposed that the force of men on each oar must have varied with its size, which was regulated by the distance from the water. In bad weather the lower oars were undoubtedly taken in and their ports closed. The human voice, and oftentimes the trumpet, was used to secure the rhythm or harmony of action so necessary among the oarsmen. Cries were adopted appropriate to each

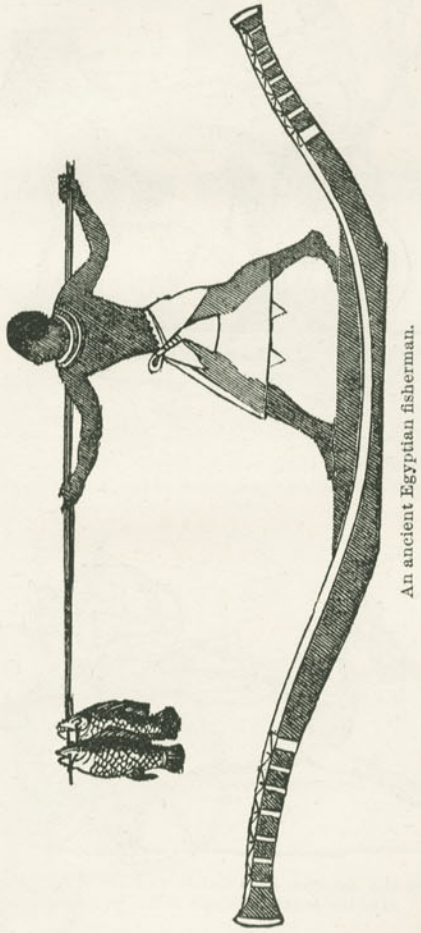


maneuver of the vessel. The Greeks, in many cases, regulated the movement of their oars by singing or music of the flute or harp.

Thus while we have been able to trace the progress of transportation in the past, it is impossible to foretell its future. But the experience of the last fifty years leads us to expect a great deal. Continued improvement is, however, dependent upon many things, above all upon the security afforded. And this is only to be attained under a strong and enlightened government that protects the individual as well as the community; that encourages the citizen to accumulate property, and having accumulated it, protects him in its enjoyment and use.

As I have pointed out elsewhere the ancients were, in their religious beliefs, in the habit of applying the known to the unknown. Thus they believed that the clouds, the trees, streams, rocks, mountains, hills, in fact every material thing, had the same consciousness, the same sensibility that man had. They believed that mankind sprung

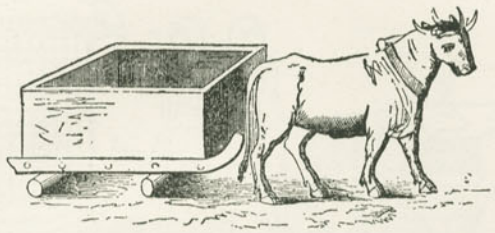
from the trees and rocks. Every evil that afflicted them they traced to malevolent demons. These they strove to propitiate by prayers and offerings. The belief in good spirits grew up later. The mythology of races differed, although each borrowed more or less from the other. The Greeks' conception of the gods was especially poetic. They believed, however, that these deities had the same passions that man possessed; the same jealousy, love of strife, intrigue and power. In fixing the abode of the gods their imagination ran riot. They located them in the clouds, in the tops of great mountains like Olympia and Mount Ida, in lonely caves and the caverns of the deep sea. When the gods had occasion to travel abroad, their vehicles were such as the ancients themselves used, but instead of oxen and donkeys for steeds they used tigers, doves, swans, griffins, and so on. Among the childish delusions of the ancients, they also believed vehicles were necessary to the movements of the planets.



An ancient Egyptian fisherman.

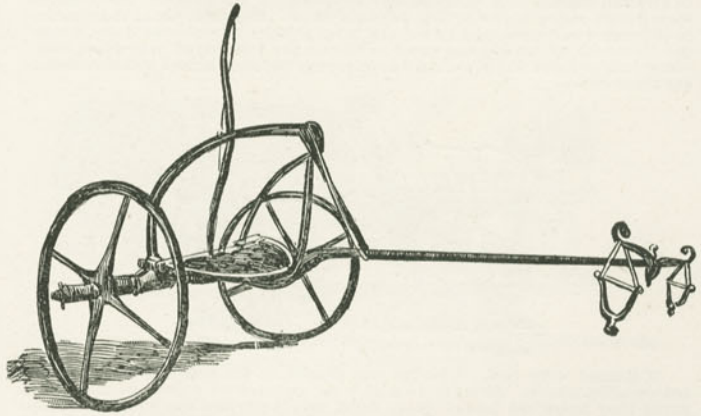
An Assyrian chariot.

In this picture the Assyrian king stands with his bow strung, the charioteer and the guard holding a shield as a defense.

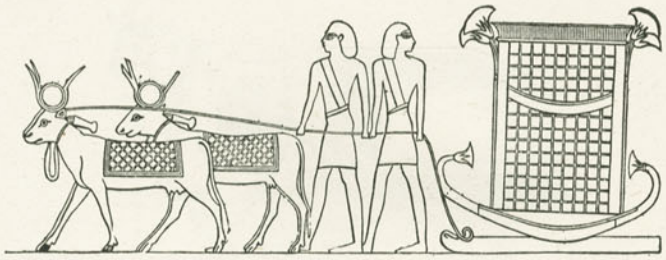


A primitive vehicle pictured on the walls of the ancient temple of Luxor in the ruins of Thebes, B. C. 1300. It undoubtedly illustrates the conception of a much earlier period.

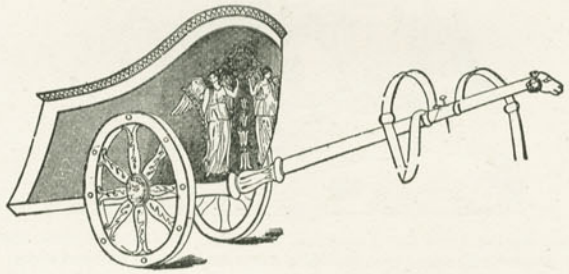
Elamites fleeing from the Assyrians, B. C. 630. The wheels were high and contained twelve spokes, while Assyrian chariots had but eight.



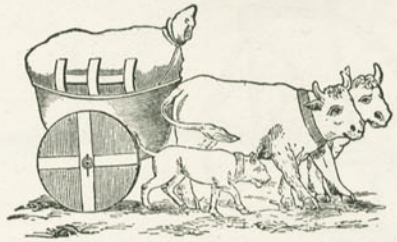
An Egyptian chariot, supposed to belong to the Ptolemaic age, B. C. 300. It was built of birch and iron, the floor being made of woven rushes or flags.



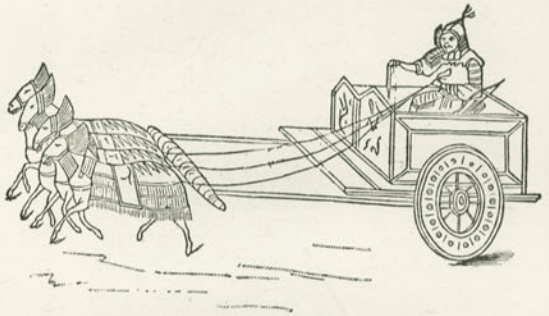
Ancient Egyptian hearse drawn by sacred cattle.



A racing chariot of ancient Greece. Chariot races were the most popular of Grecian games, and occupied the attention of all classes. The chariots were drawn either by two or four horses abreast. The position of the chariots in the race was determined by lot, and after a certain number of times around the circus he whose chariot came in first on the last round was proclaimed victor. Enormous sums were spent to secure superior horses and accessories for these races.

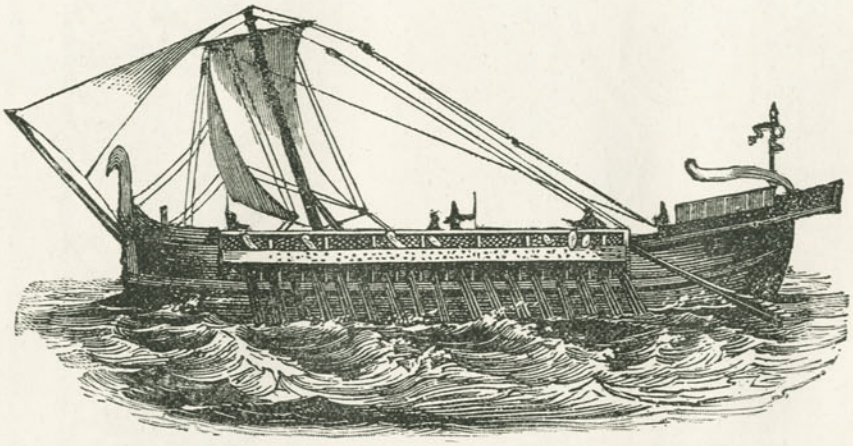


A Roman wine cart. A basket was placed on the platform of the wagon between the wheels. Skins filled with wine were placed within, so that in the event they burst, the basket, being tight, would prevent the liquid escaping. Bags were used in the carriage of wine and olive oil and were made of goat skins, with the hair turned inside.

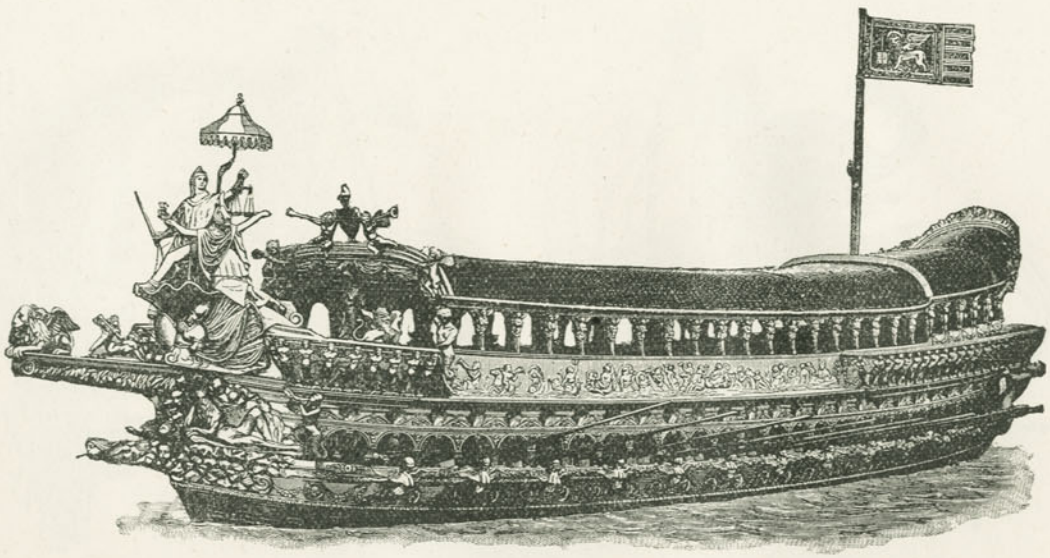


Car of Chinese royalty in the eleventh century. Vehicles having four wheels were also sometimes used on state occasions.

An Italian cochio, or vehicle of the thirteenth century. The women sat in the front of the carriage and the men in the rear.

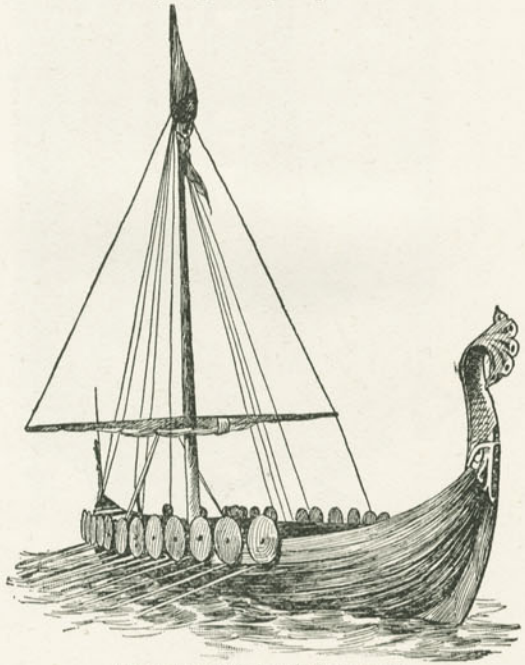


Ancient galley of Herculaneum. The vessel is steered from the side, as was the ancient custom.

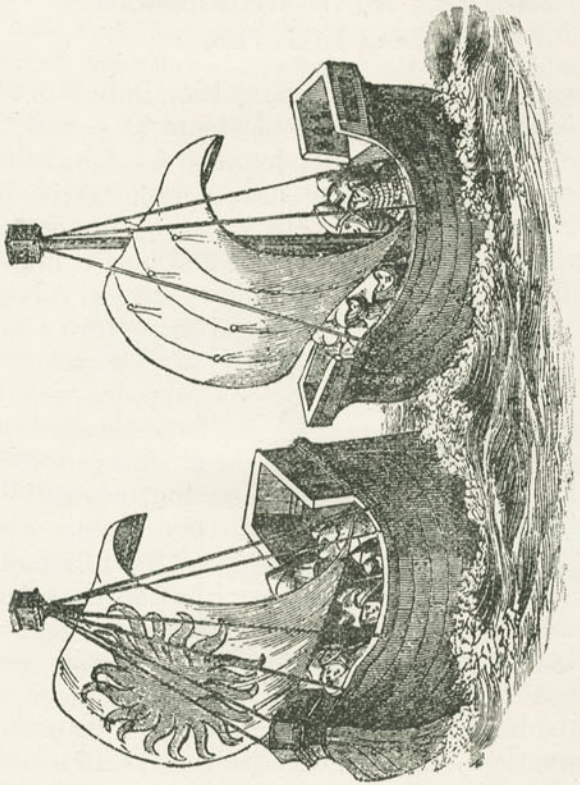


The Buccentaur, a state galley in which the Doges of Venice are said to have sailed out every year to sink a ring in the Adriatic, to wed it in token of perpetual sovereignty.

An early English ship of quaint build.



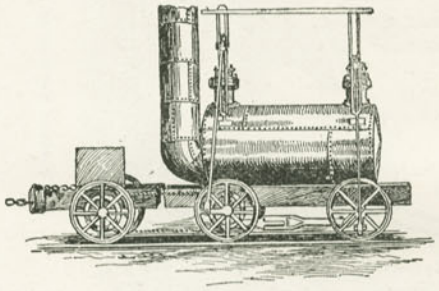
A Norse ship of the ninth century.



Sail boats of the time of Richard II.

PRIMITIVE APPLICATION OF STEAM TO ENGINES, ROAD WAGONS AND LOCOMOTIVES.

The ancients seemed to have been imbued with a conception of the value of steam as a motive power. Thus, in the city founded by Alexander the Great, Hero is said to have demonstrated its power about B. C. 130. He wrote a treatise on the subject explaining its force and how it might be utilized by the use of cylinders, pistons, valves, etc. Hero's advanced idea presupposes prior investigation, or at least discussion, in regard to the value and utility of steam; but we have no authoritative knowledge on the subject. Hero's device was followed from time to time by others more or less advanced in thought, but still lacking essential practical features necessary to their use in every day life. Thus, we have an account of an engine constructed as far back as 1629.



Coming down to the eighteenth century, it is said that a Doctor Robinson suggested, in 1759,

that steam might be utilized for propelling wagons or carriages upon the public highways. Following out his idea, models were made by James Watt. In 1769 and 1771 other machines having the same object in view were constructed. These were followed by the construction, in different workshops, of many other machines, of different patterns, designed for similar use. Defects in theory and application, coupled with excessive cost of operation and the poor roads of the country, prevented any of these engines being of practical use.

However, in 1803, a great and all important discovery was made when Trevithick invented the locomotive and had one built for use on the railroad, or tramway, of the time. It was successful in every respect except that of cost of operation. In this respect it was found to be more expensive than horse power and was, accordingly; not given extended use. This was, however, a mere detail. The objection of excessive cost of operation was overcome in 1811 by John Blenkinsop, who constructed two locomotives for use in the Middleton Colliery, of which he was the proprietor. Following these ventures, George Stephenson, in 1814, put into operation his first locomotive, the "Blucher." Thus,

this great man, who is reputed to be the father of the locomotive, really first carried out an idea discovered eleven years before and put into successful operation two years prior to the launching of his machine.

Parallel with the developments we have described, investigations were being carried on looking to the utilization of steam in connection with the propelling of vessels on the water. These ideas finally took shape in the launching of the "Charlotte Dundas," by William Symmington, in 1801, and in the successful operation of Robert Fulton's steamboat in 1807.

An early railway carriage.

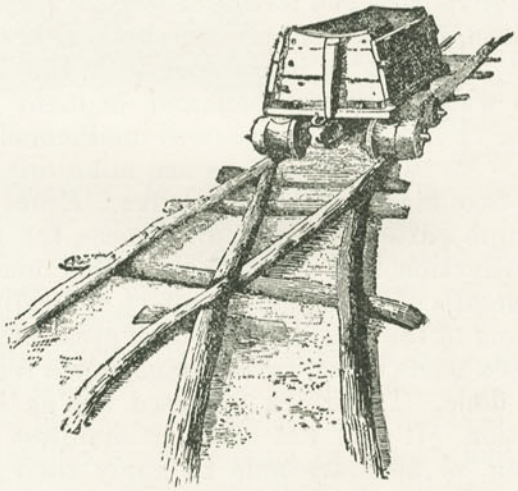
Thus were introduced the modern forms of carriage in contra-distinction to the primitive forms before existing.

In reference to one of these forms, the locomotive, its evolution since Trevithick's time is interesting and instructive. It is only when we compare the first locomotive and its simple appliances with the gigantic machine of to-day and its myriad fixtures, that we get a glimpse of the progress that has been made. To most of us all locomotives are alike. They pull their load amidst much puffing of smoke and noisy ringing of bells, and that is all we know. Important distinctions, such as weight, relative consumption of fuel, speed, load, facility in

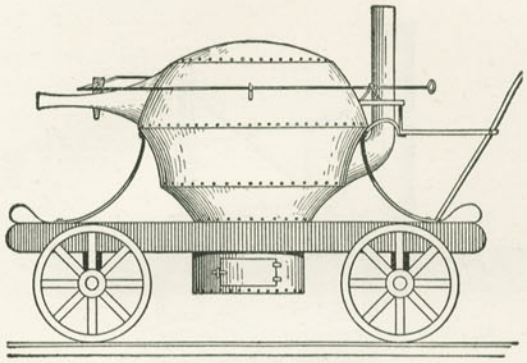
making steam, wear and tear, and other important considerations, we know nothing about. The accompanying pictures are intended simply to point out some primitive types. They are quaint and old-fashioned to us; but to those who used them, they represented all that was worth knowing, or likely ever to be known.

The evolution of locomotives has been attended by improvements in cars, track and other appliances, but not to the same extent, because less opportunity is offered. The locomotive is the key, the central idea, the fulcrum around which all other thoughts cluster. The use of steam, in its early application, was confined to moving the locomotive back and forth. To-day, it is utilized to warm the cars, apply the brakes, heat the water before it is introduced into the boiler, pump water, ring the bell and do many other things. Further advances will undoubtedly be made. No two locomotives are alike, any more than two faces are exactly alike. Even when the same pattern is used, differences, the result of contraction and expansion or other unavoidable details of construction, affect, radically, the economy of the machines. While great progress has been made in railway carriage, much remains to be done. Trevithick unloosed the genius of invention. It will not cease to manifest itself so long as men are able to apply their ideas in experimental effort. Every day sees some advance in railway construction and management, the outgrowth of added knowledge and

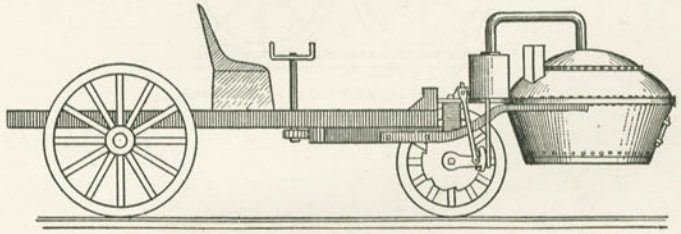
increased means. It is manifest in higher speed, greater safety, better appliances, and, quite as important, in a more scientific division of labor and increased responsibility upon the part of owners, officers and employes. Competition and the enlightened selfishness of the owners of railroads will finally carry these properties to the highest state of usefulness if these influences are allowed to have full play.



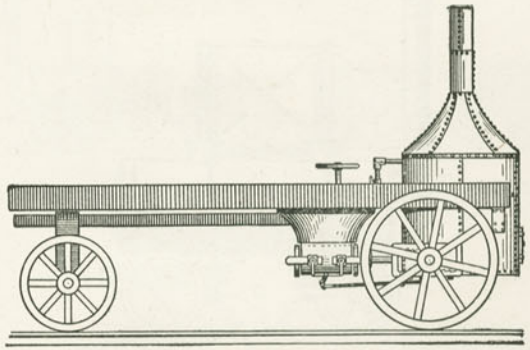
A railway track of the 17th century.



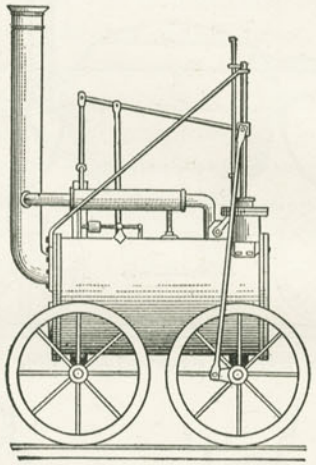
Newton's steam carriage. 1680.



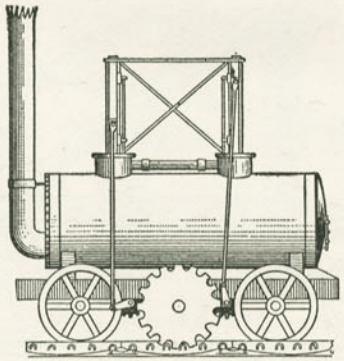
Cugnot's three-wheeled steam carriage. 1769.



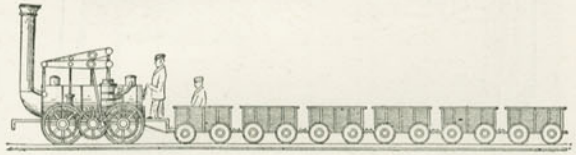
Read's steam carriage. 1794.



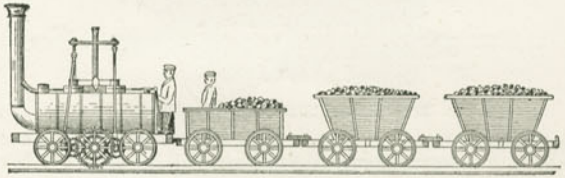
One of Trevithick's early locomotives.



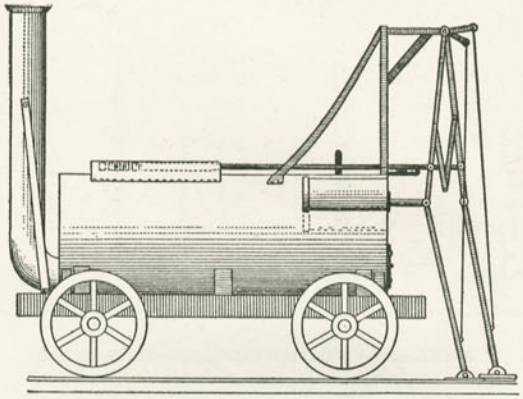
Blenkinsop's rack-rail locomotive. 1813.



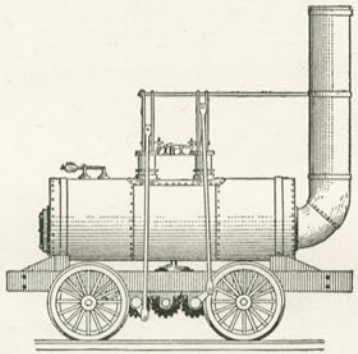
A train on the Wylane & Lamington railway in 1812.



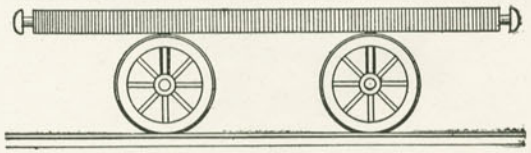
A train on the Middleton & Leeds railway, and Kenton & Fawdown Colliery railway. 1812-13.



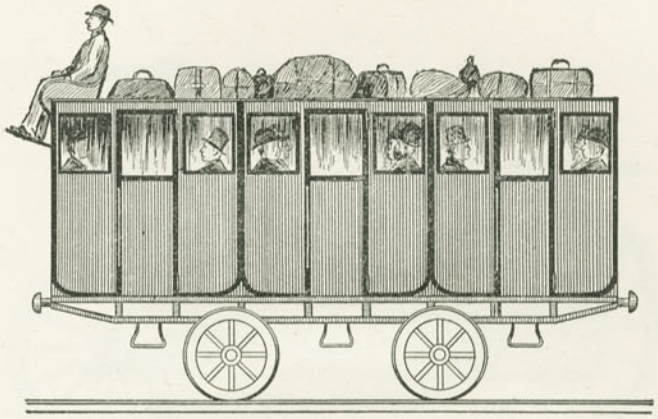
The "Mechanical Traveler" or "horse-leg" locomotive. 1813.



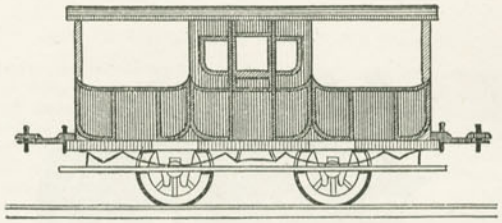
Stephenson's "Blucher." 1814. This is said to have been the first locomotive built by George Stephenson. Every part of it being made by hand and hammered into shape.



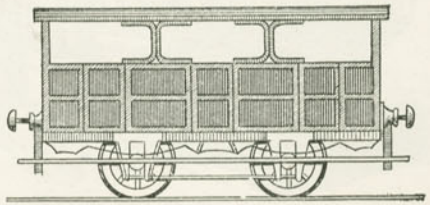
Goods wagon. 1830. Liverpool & Manchester railway.



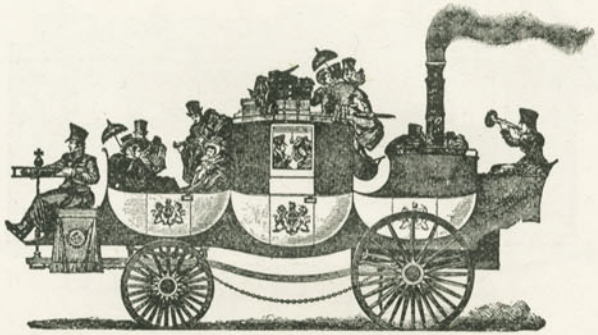
Inside passenger carriage, Liverpool & Manchester railway. 1830.



First- and second-class carriage, England. 1835.

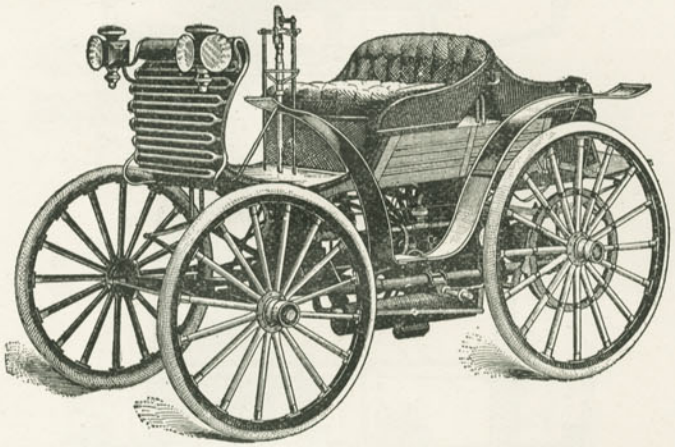


Third-class carriage, England. 1840.



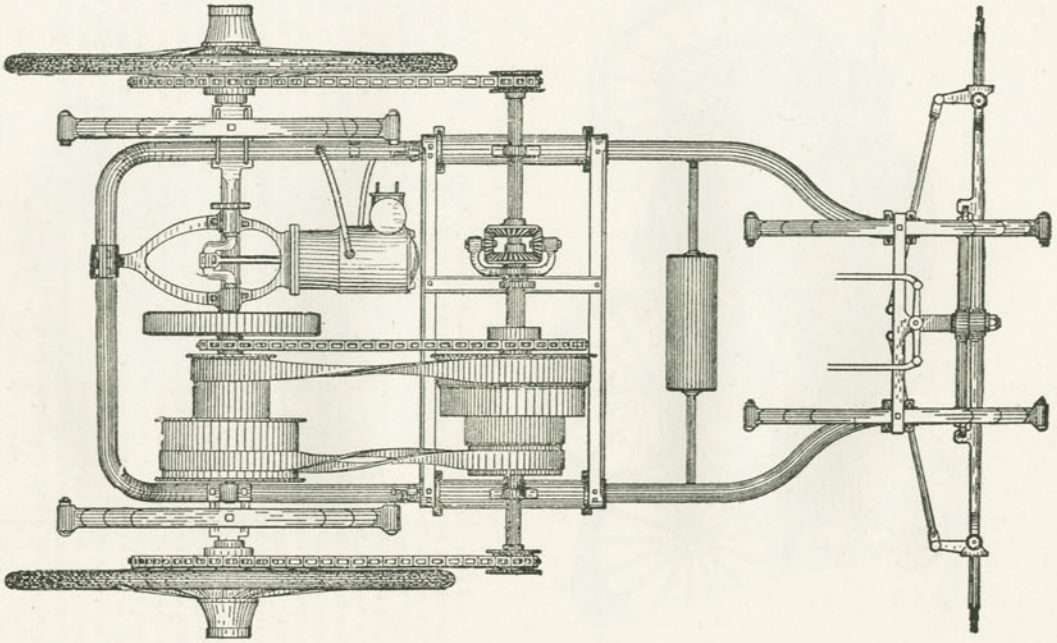
James' steam carriage for highways. 1832.

Church's steam locomotive for highways. 1832.

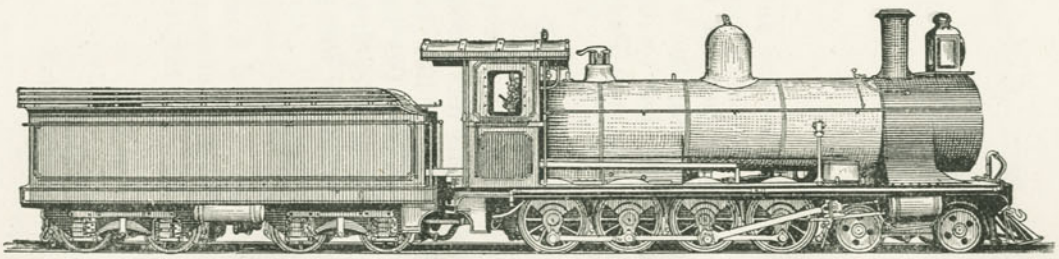


MOTOR VEHICLE OR HORSELESS WAGON.

The above illustration represents the modern Motor or Horseless Vehicle. The oil and water tanks with which it is supplied are placed under the seat. This vehicle has a power motor equal to four horses, the propelling force being furnished by petroleum. The style of motor vehicles varies, according to the ingenuity of the builder or the end sought to be achieved; in some cases it is a coach; in others a carriage, buggy or wagon. The propelling machinery may be attached to any kind of vehicle. In some instances the vehicle has three wheels, one in front and two behind; in other cases four, as in this instance. The wheels of the vehicle depicted above have pneumatic tires and roller bearings. The oil supply tank carries sufficient oil to travel on an average one hundred and ten miles. The rate of speed ranges from three to twenty miles per hour. The pipes crossing and re-crossing in front of the dash board are used for cooling the water of the cylinders. The balance of the machinery is located between the axles under the body of the wagon, as shown in the illustration which follows on the next page, depicting the mechanism of the vehicle in detail. There are many types of motors. The force in some cases is electricity; in others gas, oil, etc. The application of the motor to the common highway cannot be said to satisfactorily take the place of horses. There are many reasons for this, among others facility of movement, cost, weight, method of control, condition of the roads, etc. Its advocates, however, claim that with time every defect incident to it will be overcome, including that of poor roads.



Modern Motor Vehicle or Horseless Wagon. See explanation underneath the illustration preceding this. However, the machinery of different makers or patterns differs as in the case of locomotives, etc.



CULMINATION OF CARRIAGE.

In the foregoing pages we have seen the origin of transportation and its slow growth and evolution. Here, and finally, we see its culmination in the highest form of steam railway locomotive in use at the close of the nineteenth century. The origin and growth of carriage is co-existent with man. At the beginning, among primitive savages, whether isolated or congregated in hordes, woman was the carrier—the drudge. Afterwards animals in a measure lightened the burden she had to bear. Then vehicles drawn by horses or oxen. In our day steam and electricity have become the prime factors.

[NOTE.—The reader is referred to "Railway Equipment," (Volume I of the "Science of Railways," by Marshall M. Kirkman) for illustrations of Electrical Motive Power or uses made of Electricity for General Railway purposes. The equipment of cars and steam locomotives of railways is also minutely and exhaustively discussed in the volume in question.]

INDEX.

This volume is carefully Indexed, but for the convenience of the reader and to render the book easier to handle, the Index is included (with a full Index of the whole work) in volume Twelve under the title "GENERAL INDEX." This "GENERAL INDEX" is also, in a measure, an Encyclopedia of Railway Knowledge.

In all previous editions of the work each volume contained an Index, but as this was already embraced in the Twelfth Volume, it has been determined to change it in this edition (as indicated above) thus reducing the bulk of each volume, and making it more convenient for the reader to handle.

THE SCIENCE OF RAILWAYS.

IN TWELVE VOLUMES.

BY MARSHALL M. KIRKMAN.

REVISED AND ENLARGED EDITION.

"THE SCIENCE OF RAILWAYS" DESCRIBES THE METHODS AND PRINCIPLES CONNECTED WITH THE EQUIPMENT, SHOPS, ORGANIZATION, LOCATION, CAPITALIZATION, CONSTRUCTION, MAINTENANCE, OPERATION AND ADMINISTRATION OF RAILROADS.

This great work is everywhere commended for its thoroughness, vast research and impartial representation. While it treats of specific things, it does not reflect the methods of any particular property or country. A treasury of research and practical experience, it portrays truly and vividly the principles and practices of the great art of transportation in their highest and best forms. It is popular in every place where railroading has reached its highest development, and the endorsement it has received from railway men of the highest attainments is conclusive evidence of its value and trustworthiness.

PUBLISHED BY
THE WORLD RAILWAY PUBLISHING COMPANY,
CHICAGO, ILL.

"ORIGIN AND EVOLUTION OF TRANSPORTATION."

BY

MARSHALL M. KIRKMAN.

[NOTE.—The first chapter in this volume on the "Evolution of Man," has been incorporated since the commendatory notices of the distinguished men and women named below, were written. Originally the volume embraced only the chapters on the Ancients, and the pictures that accompanied the same.]

"For originality of design and thorough treatment of its subject, it is unique among books. Disraeli would have enshrined it among his 'Curiosities of Literature' as a stroke of genius."—Right Reverend WILLIAM E. MCLAREN, D. D., D. C. L., Bishop of Chicago.

"It is a work that has great value as a conspectus of the nomadic and other tribes of men, including their contrivances for locomotion. It fascinated me, and I spent the evening poring over its wonderful contents, which are most instructive as well as curious. Every great school, and every college in the world, should possess a book so peculiar and the result of so much research."—Right Reverend A. CLEVELAND COX, D. D., LL.D., late Bishop of Western New York.

"It was a most happy thought that conceived such a work, and in its execution it becomes a most instructive and suggestive contribution to our best literature."—Right Reverend HENRY C. POTTER, D. D., LL D., D. C. L., Bishop of New York.

"It treats well and artistically a comparatively new field of literature."—His Eminence JAMES CARDINAL GIBBONS, D. D., Archbishop of Baltimore.

"The Classical Portfolio is remarkable for the exact historical and geographical information which it imparts, and for the high art which is visible in its engravings. I can not but marvel at the patience, the vast erudition, the literary skill, the esthetic taste of which its pages from first to last give such indisputable evidences. The book instructs and delights. No sooner is it seen than it is appreciated."—Most Reverend JOHN IRELAND, D. D., Archbishop of St. Paul.

The august rulers of the world find the Portfolio quite as fascinating as do their more simple brethren. Love of art, it is thus apparent, knows no degree of rank. His Majesty, King Humbert of Italy, expresses, through his Minister of State, the pleasure the Portfolio has offorded him, and his high appreciation of its great merit. His Majesty, Leopold, King of Belgium, through his Chief of Cabinet, characterizes the Portfolio as a most remarkable and interesting publication and one that elicits his great admiration. His Majesty, the King of Greece, says of the Portfolio that it is at once an artistic, interesting and magnificent production. Many others have been so kind as to express their thanks to the author for the pleasure this rare and beautiful work of art has afforded them. Among the more exalted of these may be mentioned Her Most Gracious Majesty, The Queen of England, and His Imperial Majesty, The Czar of Russia

"A most interesting and valuable work."—NELSON A. MILES, Major General, Commanding United States Army.

"The work is a splendid one, both from artistic and literary points of view."—WESLEY MERRITT, Major General, U. S. A.

"Mr. Kirkman's researches have taken him into every quarter of the globe, and among every race of man. The illustrations depict every known method of carriage, . . . besides pictures of ancients, medieval and mythological means of carriage. . . . The value of this vast collection is greatly enhanced by the explanations and the dates that are affixed to most of the illustrations, and by the brief historical essays that are prefixed to the several subdivisions."—*New York Daily Tribune.*

"A superb volume, original in conception and unique in literature and art."—JOSEPH MEDILL, Proprietor *Chicago Tribune.*

"One of the most exhaustive and valuable books in the world in any given line. It is impossible to say too much in praise of this noble work. . . . Mr. Kirkman is a railroad man of great ability, but he is more, and that is a distinct benefactor to the learning of the world."—*The Boston Traveler.*

"A more interesting series of illustrations it would be difficult to imagine, or one that could give more clear and positive instruction in the history of humanity. Mr. Kirkman is a distinguished railroad man, and thus he came naturally to the studies which are embodied in this beautiful and comprehensive volume."—*New York Sun.*

"This volume is especially interesting by reason of its presentation of its subject through a progressive series of excellent pictures following the line of historical development."—Dr. TIMOTHY DWIGHT, President Yale University.

"A book prepared with great care and cost, and possessed of great merit in point of beauty; it is exceedingly interesting and instructive. I am glad to add my testimony to that of others with respect to its excellence."—Dr. FRANCIS L. PATTON, President Princeton College.

"Truly unique, instructive, beautiful and fascinating. I consider it a valuable contribution to literature."—HENRY WADE ROGERS, LL.D., President North-Western University.

"A magnificent volume, . . . most interesting and admirable. It is an illustrated study of the means of travel and transportation in every country in the world that has any; and from the most primitive times down to the present. The profusion of illustrations and their beauty render the work a mine of instructive enjoyment, and I find it interests all who see it."—JENNY CUNNINGHAM CROLY.

"Artistic and valuable, and, despite all traditionary statements to the contrary, something new under the sun."—ELIZABETH BOYNTON HARBERT.

"Exceedingly beautiful, and worthy of all the best words that can be said in its behalf."—MARY LOWE DICKINSON.

PARTICULARS IN REGARD TO THE SALE, DELIVERY, PAYMENT, ETC., OF THE

"SCIENCE OF RAILWAYS."

The work may be paid for in monthly installments. In such cases the books will be delivered as fast as paid for.

In all cases, however, the publishers reserve the right to deliver the books in advance of payment if they so elect.

Payments may be made according to the following plans, as may be agreed upon, viz:

1. In one payment.
2. By remitting draft or postoffice order to the publishers (or such person or persons as they may direct), for the amount of the installments.
3. In the case of those in the service of corporations, orders on the proper officer thereof will be accepted when the publishers are able to arrange with the company to collect the same.

Only those who are duly authorized in writing can collect money on account of the work.

The Publishing Company has had this edition electrotyped. Those who wish all the books delivered at one time may, therefore, expect to receive them without sensible delay. Those who wish them in single volumes from month to month may also confidently anticipate delivery at the time specified.

The work is sold only by subscription.

The World Railway Publishing Company,
79 Dearborn St., Chicago, Ill.