

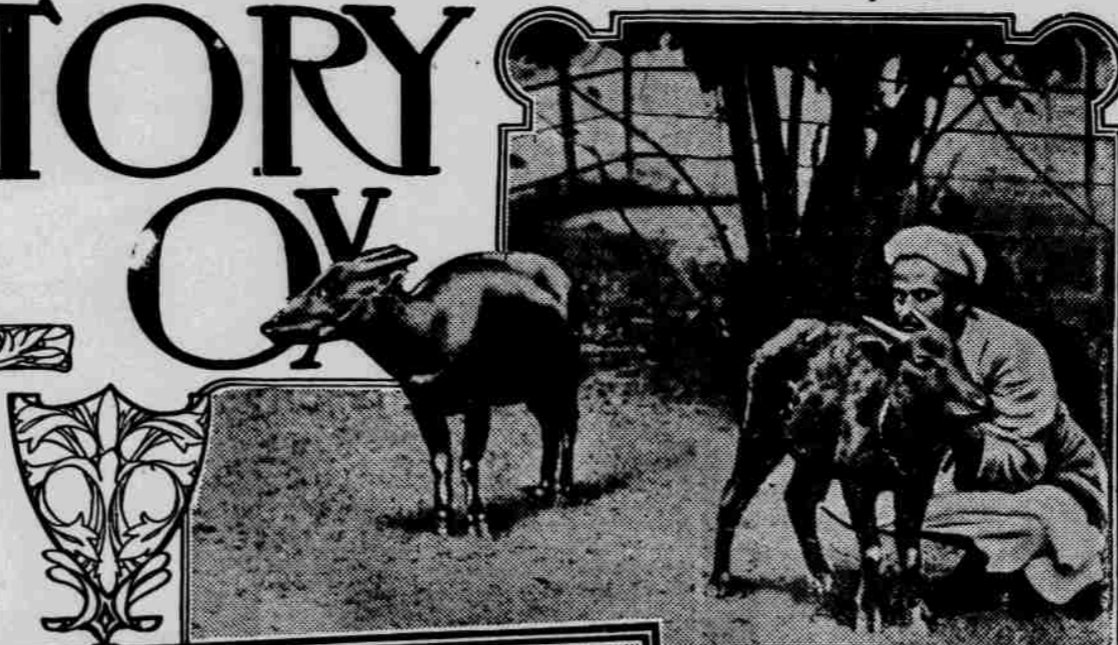
The STORY of the OX

SOME of the most fascinating chapters in the book of science deal with the story of the way the various animals which inhabit the earth, each after its own kind, have come about through long ages of tentative development during a thousand generations. When the fossil remains of other beasts than those we know were first studied at the beginning of the last century, there were many

searchings of heart among the plous of that day, and instead of looking upon them as the most wonderful entries in nature's ledger, some good people regarded them as the malicious inventions of the devil, intended to lead astray the over-curious.

In his book, "The Ox and Its Kinred" (Methuen), Mr. Lydekker tells us the story of our domestic cattle as it is revealed by the examination of the various species, living wild and in captivity, and by the fossil remains of their progenitors. Although there are a very large number of species belonging to the sub-order Artiodactyla (the Greek word artios, meaning equal, and dactylos, toe), which comprises the ox and the other ruminants (i. e., animals that have the power of regurgitating and remasticating their food), their history is not so well displayed by their fossil remains as that of the Perissodactyla, or odd-toed, hoofed animals, which have only the horse and some half-dozen other representatives.

Both families consist, of course, of hoofed animals; but the ox group differs widely from the horse and its relations through the special development of the stomach required by ruminants, instead of the simple and almost imperceptible divisions into cardiac and pyloric portions common to man and most other animals. The stomach of the ox has five chambers, two of which constitute the rumen, or paunch; in this the grass is first stored after it is cut by the incisors acting against the pad which takes their place in



A PAIR OF YOUNG ANOAS



ANCIENT EGYPTIAN LONG-HAIRED OX



KATHIAWAR BUFFALO

fashion of their modern brethren, save, perhaps, Mr. Arnesby Brown and some few others who achieve their greatest triumphs with these subjects. Though Mr. Arnesby Brown, be it noted, seems to prefer the latter portions of his models for portraiture.

From the point of view of the geologist the ox tribe are a modern group and only date back to the early part of the Pliocene, or upper division of the Tertiary epoch. They are related to the antelopes, and may own cousinship with the gnus of Africa; but their direct ancestors are still unknown. The earliest representatives of the group are very similar to buffaloes, which constitute, in some respects, the most primitive of the living forms, and are those whose horns come nearest in shape to those of gnus.

The group is of old-world origin, and the bison were the only section which reached America. They traveled by way of Behring Strait, and at one time reached as far south as Texas and California, but never penetrated into South America. Seven species of American bison have been identified.

The extinct wild cattle of Europe and Western Asia are called aurochs (*Bos taurus primigenius*); they were represented in Algeria and Tunisia by a local race (*B. t. mauritanicus*). A nearly-allied species is the great extinct ox (*B. namadicus*) of the superficial, or Pleistocene, gravels of the valley of the Narbada in Central India.

In Northern India, in the well-known Tertiary deposits of the Siwalik Hills and other low ranges at the foot of the Himalaya, remains of several kinds of cattle are met with, and as these Siwalik strata are at least early Pliocene, their fossil cattle are the oldest known members of the group. The largest and most remarkable of these Siwalik forms of typical oxen is the one for which Mr. Lydekker proposed the name *B. acutifrons*. From the aurochs and its relatives this Siwalik ox is distinguished by the sharp longitudinal ridge down the middle of the forehead. More or less perfect skulls of a very remarkable type of ox have been obtained from the alluvial upper Pliocene deposits of the Val d'Arno in Tuscany, and corresponding formations in Southern France. This extinct Etruscan ox (*B. elatus* or *B. etruscus*) represents a distinct subgenus known as *Leptobos*, and is characterized by the absence of horns in the cows, and by those of the bulls arising on each side of the skull from a point nearly midway between the occiput and the socket of the eye; the skull itself is also remarkable for its shortness.

Another interesting progenitor of the ox is the great extinct bison (*B. prisicus*) of the caverns and gravels of England and the superficial formations of Europe. This animal differed from the living species in the enormous size of its horns.

Might Make Money.

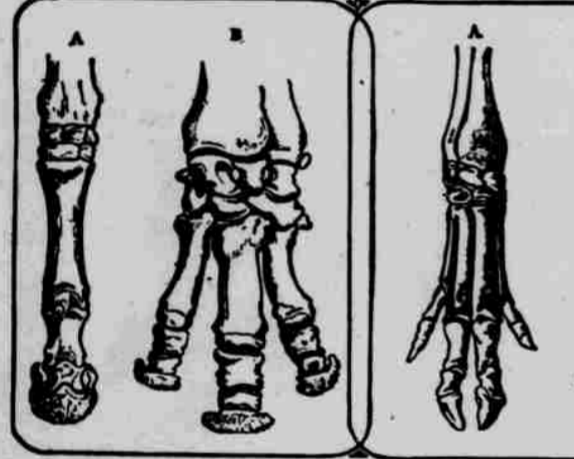
"Father, our daughter is being courted by a poet."
"Is that so, mother? I'll kick him out."
"Not so fast. Investigate first and find out whether he works for a magazine or for a breakfast-food factory."

Couldn't Fool Jimmie.

Teacher—Away back in 1776, Washington was the nation's champion.
Jimmie—Aw! Whatchu givin' us? The Washington team never won the championship!—Judge.

quaintness to the artist. Even more strange are the Kathiawar buffaloes of northwestern India, with their pathetic expression caused by their curling ram-like horns; an ungainly, ill-made beast but powerful. It stands fully five feet high at the shoulder. At the other end of the scale comes the anoa, or pigmy buffalo, of the island of Celebes; it is the smallest of all the wild cattle, and is about the same size as the dwarf giant domesticated humped cattle of India. It stands only three feet three inches at the shoulder, though it is rather higher at the loins. "Despite its slender build, as compared with larger cattle, its small, neat ears and upwardly-directed horns, which incline upwards and outwards in the plane of the face, without any distinct curvature, the anoa is essentially a buffalo whose affinities are with the Indian species," says Mr. Lydekker.

Although the remains of the bovidae are slight, comparatively speaking, we have evidence that they formed the quarry of the men of the Stone Age, because at Cambridge the skeleton of an aurochs, or wild ox, is preserved which was killed by a stone weapon, and many other skeletons have been found which show that the animal was slain in the chase. There is one prehistoric drawing of an extinct buffalo which was found in North Africa; but as a rule the artists of the prehistoric ages showed very little enthusiasm for the ox as a subject to sketch, in spite of their obviously keen interest in him as an addition to the larger; their pictures are chiefly concerned with horses, men and dogs. Somewhat after the



the upper jaw. When the animal has taken in as much food as it requires it seeks a place of safety if wild, or settles down in the field if domesticated, and proceeds to regurgitate, that is to say, bring back the food it has taken in, and chew it up in the powerful mill formed by its cheek or molar teeth. When the food has been re-swallowed it is taken into the reticulum, or honey-comb chamber, of the stomach, where it is acted upon by the digestive juices, and is then passed on through the psalterium, or mannyles, the abomasum and pyloric opening into the small intestine.

When a ruminant is engaged in chewing the cud, after a mouthful of food has been masticated and swallowed, the animal, as may be seen if a herd of recumbent cows are watched shortly after their meal, will remain perfectly still for a few seconds, after which a kind of convulsive movement will be observed in the throat, followed by the sudden upward movement of a "bolus" through the gullet into the mouth to be masticated.

The most striking feature in the structure of members of the ox family is the development of the foot. Both the horse and the ox tribe have developed towards the one end of great speed over firm ground, and both have become specialized almost as completely as possible; but they have adapted themselves in different ways. In the case of the horse the middle toe has been developed and the others suppressed. The ox and its tribe, on the other hand, have developed the two central toes, hence the name of their sub-order, Artiodactyla.

This specialization has entailed an enormous extension of the two bones corresponding to the middle bones of the hand (metacarpals) and of the foot (metatarsals); these have also become more or less completely fused in the different members of the family, consequently the joint corresponding to the human wrist has become the knee in oxen. Our illustrations showing the bones of the fore foot of various members of these two sub-orders, Artiodactyla and Perissodactyla (or odd-toed) will make this point clearer than much discussion. It will be seen that the hoofed (ungulate) animals really walk on the tip of what corresponds to the finger nails in man and the claws in carnivora, and not on their feet at all, if feet are looked at from the point of view of creatures like ourselves who walk in plantigrade fashion.

One of the most fascinating studies in connection with natural history is the way different members of the same family will modify and adapt themselves to the varying local conditions to be met with. A glance at our illustrations will show the wide extent of these variations. At first sight the wild aurochs, or wild ox of Poland, recorded by Count von Herberstein in 1549, bears a greater resemblance to the phantom of an evil dream than anything we know in our fields and parks today; and, no doubt, it owes not a little of its

Youthful Criminal

Moral Health of Children Needs Guarding

By MRS. W. J. YOUNG, Galveston, Texas

WHAT shall we do with the youthful criminal? That is a problem that requires serious thought. Some of the greatest intellects have pondered over that momentous question, and yet all reforms bearing on the subject are still in an experimental stage. To prevent and protect our children from becoming youthful offenders should be our first endeavor.

Modern municipal hygiene does not attempt to stop the ravages of disease by merely treating those afflicted. The purity of the water supply, the sanitary regulations governing dwellings and buildings, the efficiency and completeness of the sewer system, etc., are given the required attention. Time, thought and money are expended judiciously to protect our physical well being. Protection is the watchword in the municipal department safeguarding our health.

The moral health of our children needs to be guarded and fortified. If we can check or reduce the number of wayward youths the problem will be partially solved.

Many parents feed, clothe and send their children to school, but forget to instill into the plastic minds of their offspring the love of truth, honesty and consideration for the rights of others. Character building in the home is essential to good morals. Parents should co-operate with school teachers and religious instructors in the training of children. "The high instincts of reason, of conscience, of love, of religion—how beautiful and grand they are in the young heart!"

Undoubtedly heredity plays an important part in the character of a child. I firmly believe that good and worthy examples, the proper environment and a moral and religious training exert a powerful influence in controlling and eradicating hereditary evil tendencies.

Give youthful offenders a chance? Why, of course. Teach them the means to earn an honest living, then give them work and put enough in their pay envelopes to enable them to live respectably. Lack of employment and insufficient wages produce a harvest of criminals.

The wonder is that we have not a larger crop of young lawbreakers. What chance have children of tender years working long hours in mills, mines and factories? Stunted bodies and minds are not productive of strong moral characters. Men waxing rich on the profits derived from child labor not only dwarf the minds and bodies of the poor, unfortunate children in their employ, but they kill their souls as well. Give youth the best chance by abolishing conditions that produce youthful criminals.

Boys and girls who stray from the straight and narrow path should not be herded with older and more hardened criminals. A little more classification in jail and a little less out of jail might be beneficial to humanity. Confirmed law breakers are professors of crime, and all professors, whether good or evil, take pleasure in instructing the young.

Minor offenders should not be treated like seasoned jailbirds. There are many pitfalls for the unwary, and a step downward often means a toboggan slide to the gutter. You, on the height, throw out the life line; there is always a chance that it may be grasped.

Publicity should not be given to the petty crimes of first offenders. It does not help the youth to retain or regain his self-respect, and self-respect, if not wholly destroyed, leads to reformation.



There has been general regret on the part of the more enlightened members of the community regarding the unfortunate display attending the departure of a recently married couple on their wedding journey. Could not a campaign be instituted to inform backward intellects unable to distinguish between fun and decency?

It might be well to impress on those "not yet under the yoke" that one of the first duties of a husband is to shield his wife, not alone from insult, but from annoyance and humiliation.

Even the uncultured might understand the opposition of half a dozen against the necessity of one.

Much Cruelty Uncalled for at Weddings

By Robert N. Fulton, Indianapolis

that fair play hardly permits the opposition of half a dozen against the necessity of one.

The majority of human beings, who have succeeded in emerging from barbarism, find no special pleasure, either, in the anger of a man or the tears of a girl. One is tempted to reverse the judgment of that wise and witty handbill, and agree with New England's great educator, Dr. Elliott, when he observed that bachelors were a mischievous and disorderly class and a detriment to society.

A more charitable view, however, might suggest that, in the parting episode of the handcuffs the "beloved friends" bestowed a girl with which they had become profitably familiar. It is devoutly to be wished that people may not judge the bride and bridegroom by the company they kept, for they certainly proved their desire to escape it, and to depart unheralded and untormented upon the "deep, dark and troublesome sea of matrimony."

Why do not more city girls become the wives of western farmers? The reason is that a city girl who is willing to work at stenography or bookkeeping or any other honest employment is too self-respecting to pick up with a western man whom she knows nothing about and to cross the country to be inspected before marriage, even though the westerner is generally willing to send money for the girl to come out till he gets a look at her.

We know he is simply longing for her, as some kind of girl is necessary to preside over his shack and keep the cows and chickens from roaming too far from home. She can help remove the litter from in front of the only door when it becomes too cluttered up, cook for the men on the ranch and mend and wash for them.

True, there is not much housework to be done, as there are generally two rooms in the shack and all the boasted fresh air they can enjoy in the winter months is that which comes through the cracks in the walls.

Take it from one who knows—"Far-off hills look green." This western ranch luxury is largely a myth and a self-respecting girl should think too highly of her life to run after a man.

City Girls as Wives of Western Farmers

By IDA HOE, Omaha, Neb.

DREAD CHILDREN OF WAR SLAVERY, DECEIT, CRUELTY, FAMINE, ARSON, PILLAGE AND STILENCE

War has had many children since the world began, the new York Mail remarks. Some of them are dead now, but others are alive. War's first born was slavery. The savage who conquered his neighbor in the forest killed him as a matter of course, but he made captives of his family and his dependents, and these captives were slaves. By and by it became so profitable to hold slaves that conquered men were not killed, but spared for a fate worse than death. And in the measure that war drove and spread and became vaster and more dreadful, slavery spread and flourished, too. It was but yesterday that we ended it in America; and it is not yet gone from the earth. War's next child was pestilence. She was hideous! But not so hideous as slavery. She follows war like a shadow. With the wings of the vulture, she hovers over the camp. Born on the battle field, she flies over all the world for that point of vantage, and her victims vastly outnumber those of war itself. She is so closely associated with her blood stained parent that it is probable that if war were no more on the earth there would be no more pestilence as long as the world endures. Then famine. This sister came later than pestilence, and her ravages have been more dreadful. In this age and quarter of the world we do not have famine in the same guise as that in which she visited the middle ages and still visits Asia. Our people do not die and rot upon the streets, as in Lucknow or Nanking. But famine stays longer with us when she comes.

She visits us in unemployment and adversity. She drags out her curse over the years. The crust may not be wanting; but the horrible waste and charge of the armaments, upon the western world, withhold from the mouths of countless thousands the nourishing food to which their hard toil entitles them. Famine, as the child of war, means for us the untold billions that are squandered on battleships which in a few years are junk, to the robbery of legitimate industry. Hatred between peoples, fratricidal enmity, is another child of war. This ugly sister of pestilence and famine we have had with us many years in America. Even to this day, after half a century, she waves her bloody shirt in the halls of congress. Then there is arrogance, which is war's legitimate offspring; and deceit, for all is fair in war, and the student in the military academy is taught first of all to fool the enemy with all manner of lies, the baser the better. And arson and pillage—are they not the children of war that survive to this day? Last of all, the ultimate breeding power of war has been well expressed by one who said: "War is the father of more wars." Never was there a war that did not leave its offspring in hatreds that had somehow to be worked out. The world is full today of wars that are merely awaiting their declaration. The state of Europe is more like war than it is like peace. Every dreadnought, every added regiment of the mighty armaments, is a war child of the monsters that Napoleon and Bismarck let loose upon Europe.