

THE ANTELOPES.

Among the widely extended family of deer, the tribe of the antelopes is especially worthy of attention. The name is generally considered to be synonymous with grace and beauty; but the race is so varied by climate and locality that some of its members resemble the horse in size and the goat in configuration, while others are wild and untamable. The sable antelope, for instance, has horns three feet long; it is exceedingly handsome, being quite black on the back and sides, and white on the belly. The gemsbok is a very fierce animal, defying even the African lion to combat; and thegnu (called *wildebeest* by the Dutch settlers of the Cape of Good Hope, its native place) has the appearance and gait of a horse. The largest antelope is the *nil ghau*, which much resembles an ox; and closely allied to it is the beautiful eland, which has been domesticated at Moor Park, England, and is a very handsome creature in the fields. It fattens well, and is most excellent beef. The smallest antelope is the madoqua (*antelope saltrara*), the most diminutive of horned animals, scarcely larger than a rabbit.

But for beauty the gazelles must be allowed to carry off the palm. This genus varies in different countries, those of Egypt and Asia being well known for their gentle docility. They are the favorite domestic animals among most oriental nations. Their eyes are mild and lustrous: "brightly bold and beautifully shy," as Byron well describes them. Our illustration shows the brown Indian antelope, one of the tallest of the genus, and remarkable for its fleetness. Its legs are finely formed and exceedingly muscular, and the body has no superfluous weight on it; and it is very strong in the lumbar regions and the hind legs. There is little doubt that many species of antelope could be domesticated in this country. In summer they would be sure to thrive, while a little care in winter would protect them from the inclement weather, and the trouble would be amply repaid by the beauty of the denizens of the park and paddock.

THE SAMBUR.

The sambur or rusa deer (*rusa Aristotelis*), found in most of the large jungles surrounding the hill ranges throughout India, is considerably larger than the Scotch red deer, and more powerfully built. A full grown stag averages from 14 to 15 hands at the shoulder, and his hind quarters are as well shaped as those of a high caste arab, whereas the Scotch red deer generally falls off low behind, and is more or less cat-hammed. The head is beautifully formed, the forehead being broad and massive, while the line of the face is straight and the muzzle very fine. The eyes are very large and beautiful, being fringed with long black eyelashes, and the sub-orbital sinus—which is very conspicuous—expands greatly when the animal is excited. The horns of the sambur vary very much in their development, according to the district in which they are found, some being long and slender, while others are massive and short. The horns are rather upright, having two short brow antlers only, and at three years old two points at the extremities of each beam, as shown in the engraving. Sometimes the inner and sometimes the outer tine of the terminal

fork will be found the longer; and occasionally, but rarely, three tines are seen at the summit of the beam. The horns of a mature stag average 35 inches in length from base to tip, having a circumference of 11 inches round the burr at the base, and 8 inches at the thinnest part of the beam; but some antlers greatly exceed these dimensions. The color varies slightly, but is usually of very dark slate mingled with gray, nearly black about the face and points, and a light buff between the haunches and underneath. The hair immediately next to the jaw is longer than on any other part of

the neck; and when the animal is alarmed or excited, it stands on end and forms a kind of ruff, sometimes called the mane. The hinds are smaller than the stags, and of a lighter color; and both sexes have canine teeth in the upper jaw.

Old stags, during the rutting season, in October and November, are extremely vicious, and may be heard all over the forest, calling to each other. When they meet they engage in savage conflicts, sparring with their fore feet and butting each other with their antlers, like the American deer.

Wagner's Free Institute of Science.

This institution, situated at the corner of Montgomery

interested in. At the first meeting, there were over a thousand in the audience, while many were unable to gain admittance.

Economy in Use and Manufacture.

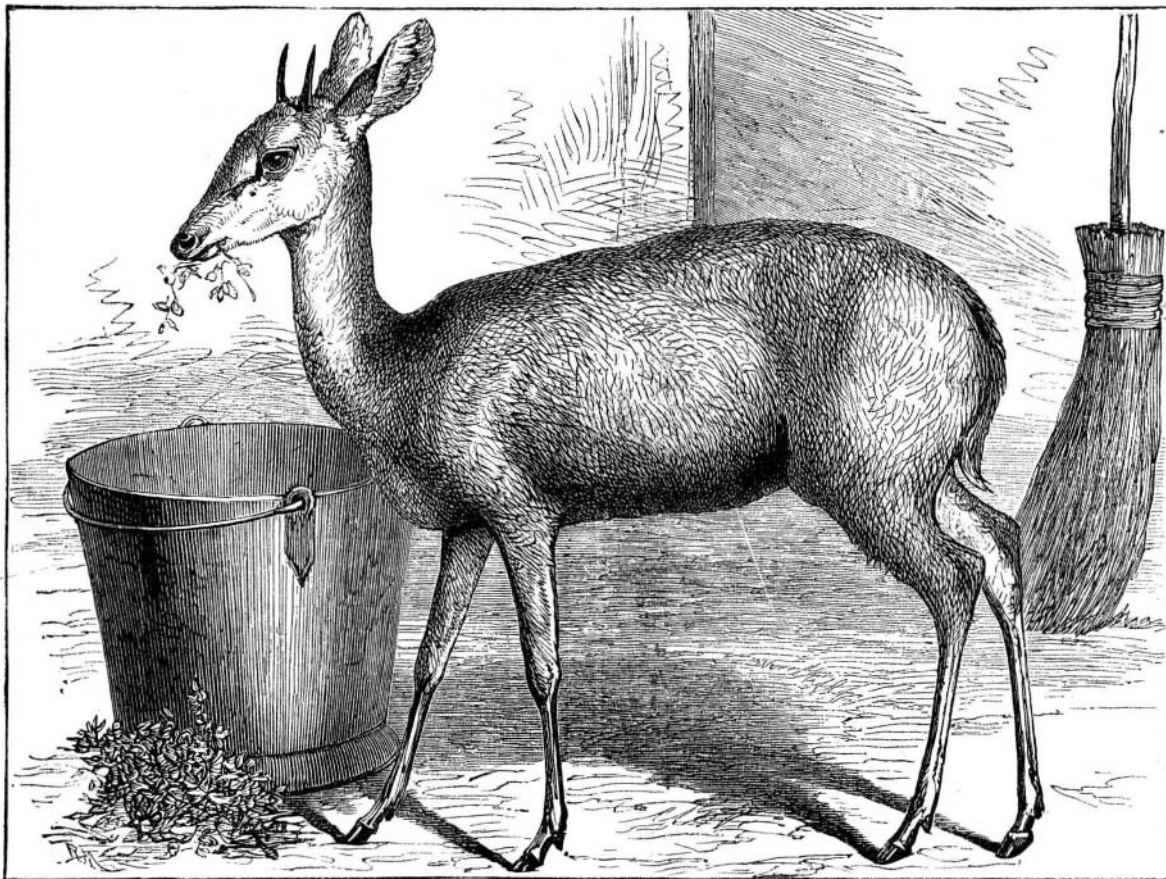
How to save in cost of manufacture is thus suggested by James C. Baylis in a paper before the New York Society of Practical Engineering:

"We are very near the maximum of economy as regards the cost of power. We can build boilers that will evaporate ten pounds of water for every pound of coal burned under them; and when it is attempted to economize still farther, it

is found that the interest upon the increased cost of the boiler amounts to more than the value of the coal saved. It is doubtful if any important improvement is possible upon the Corliss engine gear, or the Cornish cataract double-head valve. Steam jacketing has not yet, in this country, received the attention to which its importance entitles it; and with this, and in clothing with felt and other non-conducting substances, there is room for profitable experiments. For the next half century we must look to economy in little things for the cheapening of the cost of manufactured products.

Among the attainable economies not generally carried to their ultimate application, the saving of fuel is the most prominent, and it is one of the most serious drawbacks to our industrial prosperity. Waste of fuel results mainly from bad firing. In an experiment made with different men, each with the same amount of fuel, the best man ran the engine 56,000 revolutions, and the poorest 28,000 revolutions. A few years ago, the best engine driver in Great Britain, and who was always in request at competitive trials, was a lad 13

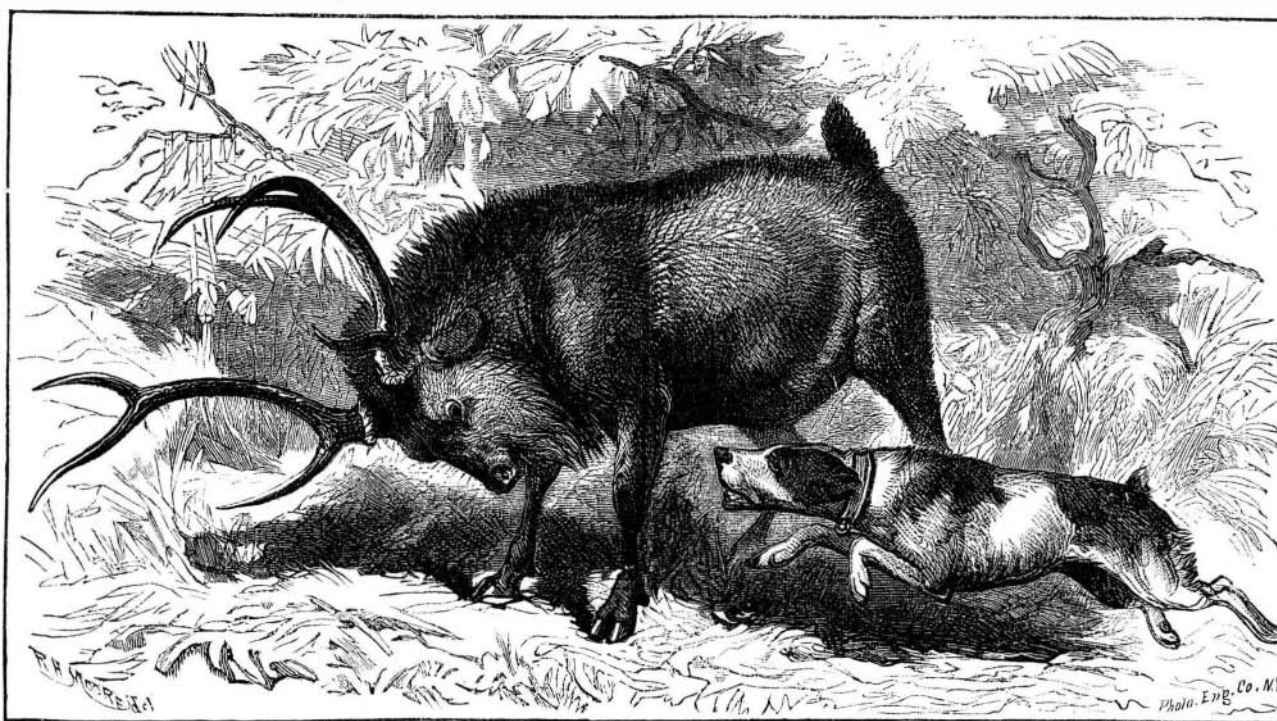
years of age. This boy could run an engine longer with a given amount of fuel than any other engineer in the country, and the fact is suggestive. The next, after economy in the cost of power, is the task of economizing skilled labor. An important plan is to employ unskilled labor to supplement skilled artisans. The proper care of tools is always attended with an important economy. In small establishments this seldom receives due attention. As a rule, a tool belongs to whoever happens to have it. Consequently, no one is responsible for it. There is great waste of lubricating oil; and above all, in our manufactories, time and material are wasted for want of proper system. System should begin with the building of the shop. If we can bring ourselves to take care of the small economies, the great ones will take care of themselves."—*Paper Trade Journal*.



THE BROWN INDIAN ANTELOPE.

avenue and 17th street, Philadelphia, was founded and endowed by Professor William Wagner, formerly the confidential manager of Stephen Girard, and was incorporated in 1855.

In the large lecture room of the Institute, there are delivered, nightly, free lectures upon scientific subjects; while at the monthly meetings, recently inaugurated, there are presented exhaustive reports of progress in science and the arts, besides practical exhibitions and explanations of recent and meritorious novelties of interest, machinery in motion, etc. The programme for the autumn course of lectures is as follows: Mineralogy, William H. Wahl, Ph.D.; Physics, Professor J. Child; Anatomy and Physiology, C. C. Vanderbeck, M.D.; Botany, Henry Leffman, M.D.; Philology, R. Grimshaw, Ph.D.; Elocution and Oratory, Professor J. W.



THE SAMBUR AT BAY.

Shoemaker, and others. The monthly meetings are in charge of Dr. Wahl and Professor Grimshaw. At the initiatory meeting, there were presented to the public, for the first time in Philadelphia, the Brayton ready motor, the National Timber Preserving Company's new process (shown on a huge log), and some dozen other interesting novelties. Drs. Wahl and Grimshaw are desirous of hearing from inventors, producers, and manufacturers throughout the country, who are thus offered an excellent opportunity of bringing before a large and practical audience whatever novelty they may be

required. About a century ago, Boas of Languedoc succeeded in making a pair of gloves and a pair of stockings from the thread of the spider. They were very strong, and of a beautiful gray color. Other attempts of the same kind have been made; but Réaumur has stated that the web of the spider was not equal to that of the silkworm, either in strength or luster. The cocoons of the latter weigh from three to four grains, so that 2,304 worms produce a pound of silk; but the bags of the spider, when cleaned, do not weigh above the third part of a grain.—*Appletons' Cyclopaedia*.

Utilizing Cobwebs.

Cobwebs have been applied to various uses. The delicate cross hairs in the telescopes of surveying instruments are fine webs taken from spiders of species that are specially selected for their production of an excellent quality of this material. The spider, when caught, is made to spin his thread by tossing him from hand to hand, in case he is indisposed to furnish the article. The end is attached to a piece of wire, which is doubled into two parallel lengths, the distance apart exceeding a little the diameter of the instrument. As the spider hangs and descends from this, the web is wound upon it by turning the wire around. The coils are then gummed to the wire and kept for use as