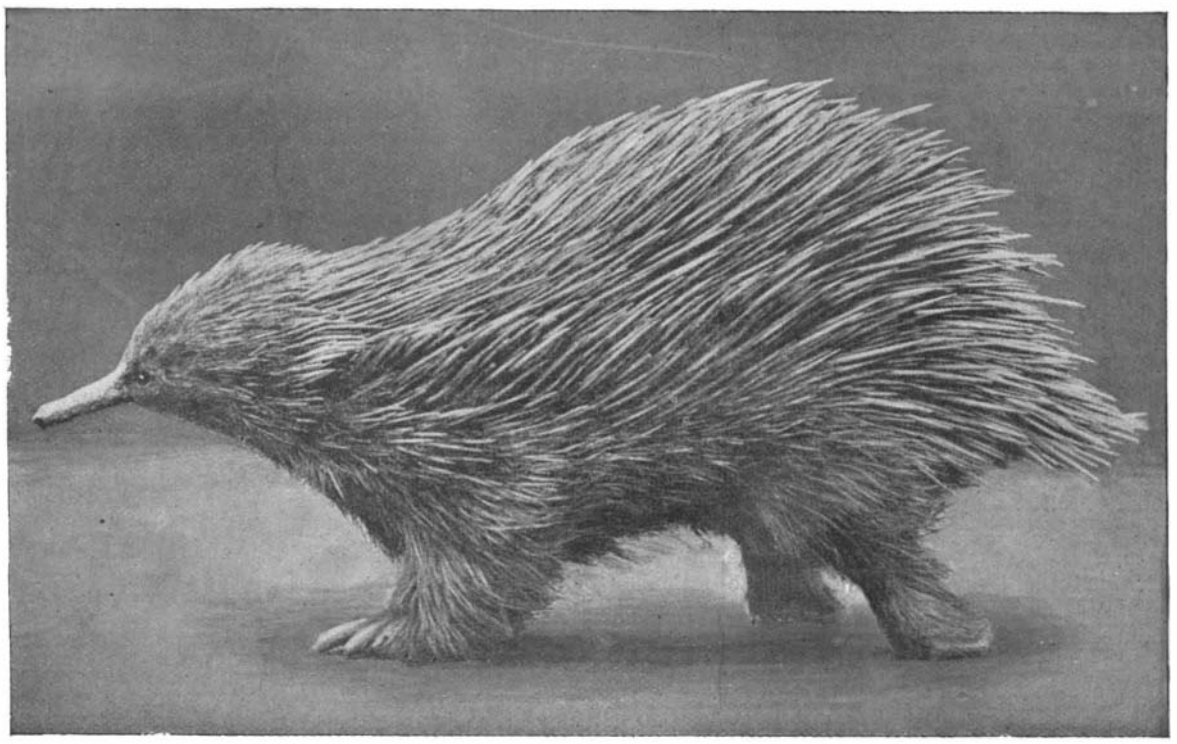
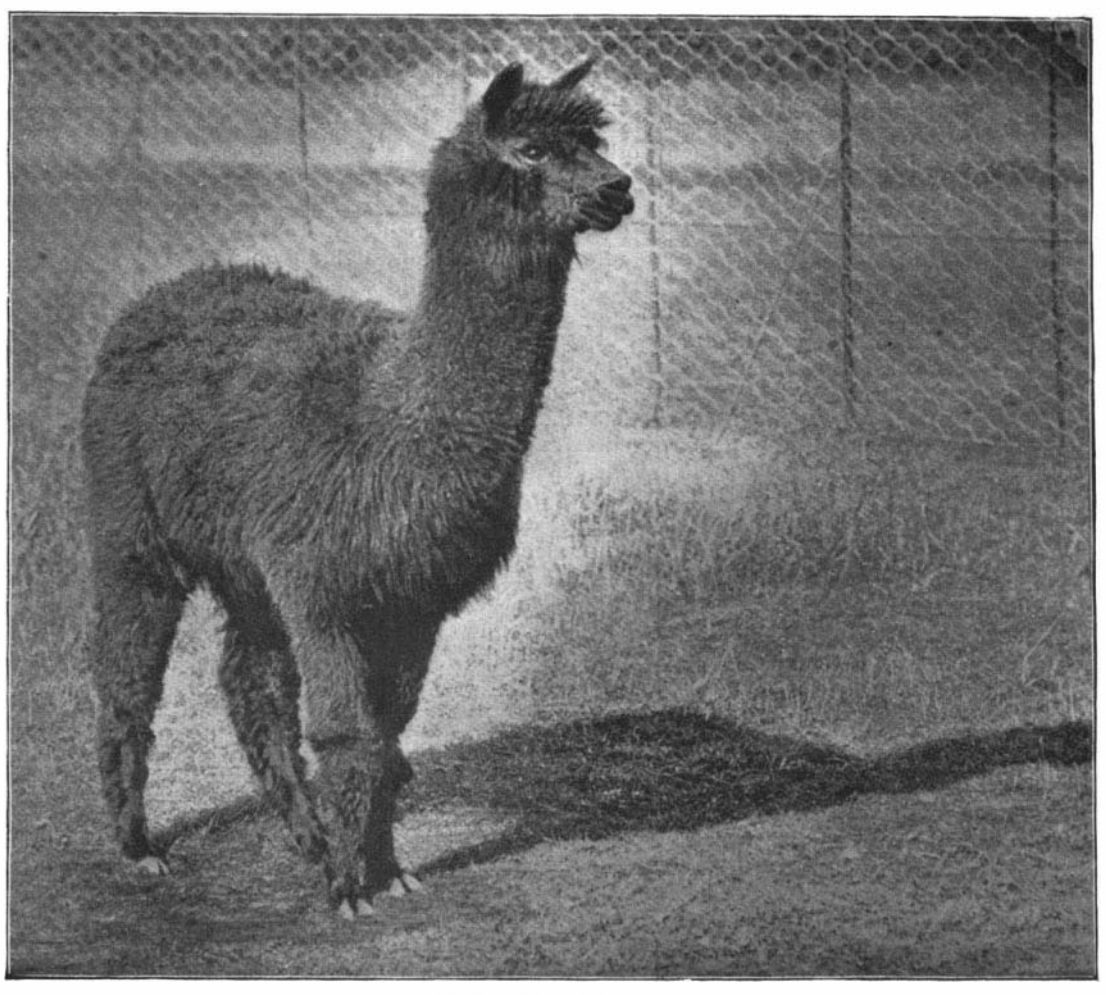
SOME INTERESTING ANIMALS.

The porcupine ant eater is now a very rare animal. Its common name is inappropriate, as it is neither a rodent like the porcupine nor an edentate like the ant eater. It is properly known as echidna (Cuv.) and belongs to a genus of marsupial mammals of the section monotremata. The echidna inhabit Australia and Tasmania. The snout is long and slender, the tongue is protractile, there are no teeth in the jaws, but the palate is provided with several rows of horny spines, and the tongue is furnished with a number of small warts. The best known species is probably the Echidna aculeata, which is about a foot long, with a stout body, powerfully built and especially adapted for burrowing. The food consists of small insects, as ants, which the animal captures by means of a viscid matter on the tongue, which is secreted by two submaxillary glands. The eyes are small and black. The lower part of the body is covered with coarse hair and on the back are dirty white spines about 1¾ inches long. When the animal is attacked, it can sink into loose sand so that only its spines are visible. In sleeping and when irritated they roll themselves into a ball with the head between the forelegs. In captivity they are stupid and move slowly, avoiding the light.



THE ECHIDNA, OR PORCUPINE ANT EATER.

The alpaca is a species of the genus Llama. The alpaca abound in the mountainous regions of Peru, where they subsist on the coarse and scanty forage which grows on the sterile soil of the mountains. The animal is chiefly interesting on account of its wool, the upper part and sides of the body being covered with light chestnut brown wool, which is very soft and is almost as fine as that of the Cashmere goat. The shearing of the wool takes place at irregular intervals, and from ten to twelve pounds of wool are obtained from each animal at each shearing. On the forehead is stiff, silky hair.



THE ALPACA.

Force Exerted on the Bicycle.

A French scientist has recently made some experiments which show the amount of force developed by some of the bicycle experts in a hard race. Windle and Zimmerman have maintained for two minutes a speed to continue which required the expenditure of energy representing two-thirds of one horse power. For six seconds they were able to exert the astonishing force of one and a fourth horse power. This is equivalent to raising a weight of 188 pounds one yard high in one second. This is a conservative estimate, owing to the insufficiency of the coefficients of power used in making the calculations.

Experiments are also being made to determine the force exerted by different sports. These results will be of use for training and as hygienic data. One of the discoveries made during the calculation of the force exerted by bicyclists is that at high speeds the work of a bicyclist in covering a specified distance is as great as that of a man running the same distance. At a moderate speed a runner undergoes three times the labor of a bicyclist, but the higher the speed, the nearer are their exertions equalized.

A GREAT photographic camera for taking full length life size portraits has been made and used with much success by Werner & Son, Dublin. The camera takes a plate 7 feet high and 5 feet wide.

A Phonograph Voice.

Away out in the extreme northwestern part of the city, near the Milwaukee railroad tracks, Silas Leachman puts in four or five hours every day singing at the top of his lungs, though not a soul is in hearing but his wife. When he gets tired of singing he varies the proceedings by preaching a negro sermon, or gives an imitation of an Irish wake, and altogether conducts himself in a way that would lead the neighbors to consider him a fit subject for a lunatic asylum—if there were any neighbors, but there are not. This is the very reason Mr. Leachman chose the lonely spot for his residence. No one ever goes out there to hear him sing, and yet he is getting rich at it. He earns something over $50 every day, though he never sees one of his auditors.

Mr. Leachman sings for phonographs, and, as he has a monopoly of the business in the West, he contrives to keep busy, and has even been heard to express a wish that he were twins. He has better protection in his monopoly than a copyright or an injunction or unlimited legal talent could afford. Nature gave him the peculiar qualities that enable him to reproduce his voice perfectly on the wax cylinders. Hundreds of people have attempted to break in on his profitable monopoly, but the results of their efforts put an effectual stop to their attempts. And so Mr. Leachman goes on enjoying the monopoly and reaping the profits thereof.

There are four other men in the East that also do work for the phonograph, but while they have to have a man to play the piano while they sing, another to make the announcement, another to change the cylinders, and a fourth to keep the machines in order, Mr. Leachman is the entire show in himself. Furthermore, he can give an unlimited number of impersonations, while the other four men are limited to a few specialties each. Mr. Leachman is a natural mimic, and therein lies the secret of his success. He sings ballads, negro melodies, and Irish, Chinese, and Dutch dialect songs. He plays his own accompaniment on the piano and takes care of the machines. He prepares three "records," as the wax cylinders are called, at one time. To do this three phonographs are placed near the piano with the horns at one side pointing away from the keyboard at an angle of 45 degrees. The horns have to be placed very carefully, for a fifth of an inch makes a great difference in the tone the cylinders will reproduce.

When the horns have been adjusted exactly right Mr. Leachman seats himself at the piano and, turning his head away over his right shoulder, begins to sing as loud as he can, and that is pretty loud, for he is a man of powerful physique, and has been practicing loud singing for four years. He has been doing this work until his throat has become calloused so that he no longer becomes exhausted after singing a short time. As soon as he has finished one song he slips off the wax cylinders, puts on three fresh ones without leaving his seat, and goes right on singing until a passing train compels him to stop for a short time. In the four years he has been in the business he has made nearly 250,000 records. So great is the demand for them that he cannot fill his orders. It is such exceedingly hard work that he cannot sing more than four hours a day. He gets 35 cents for every cylinder he prepares. He has a repertoire of 420 pieces, and his work is put on the market under a score of names. He has a remarkable memory, and after once hearing a song can not only repeat the words and music correctly, but he can imitate excellently the voice and expression of the singer.—Chicago Daily Tribune.

The Liquefaction of Hydrogen.

Under the combined influences of great pressure and intense cold, hydrogen has at last surrendered and been liquefied. The means by which this has been effected have, of course, been at the disposal of the physicist and chemist for many years, but Professor Olszewski, of Cracow, who, it may be remembered, also liquefied argon and examined its properties, has been the first to succeed in obtaining liquid hydrogen in tolerable quantity, since he has been able, we learn, to give two constants in regard to it. Thus it is announced that its critical point—the temperature at which it passes from a liquid to the condition of vapor—is —233° C., and its boiling point at normal pressure is —243° C. It is well known that hydrogen has hitherto most strenuously resisted all attempts at liquefaction, and the fact of its obduracy in this respect, though in other respects it is most tractable, having now been overcome, removes the only gaseous element known to us which has not been liquefied. Until, therefore, more attenuated gases even than hydrogen are added to the list of chemical simplicities, no further discoveries on this particular line of research can be hoped for.—Lancet.

The English Sparrow.

State Entomologist Lintner opposes a bill now before the New York Senate providing for a bounty of one cent on each English sparrow killed. While the English sparrow is an unmitigated nuisance, and there can be no question of the desirability of its extermination, he nevertheless deems this bill highly inexpedient, for the following reasons:

"There are other methods by which the pest could be better reduced in number, as by repealing all laws that give it protection; by outlawing it and making it a misdemeanor to give it shelter or food; by protecting the butcher bird, the sparrow hawk, and the screech owl, which feed largely upon it; by making it the duty of game constables and persons to destroy it in cities where the use of firearms is prohibited; and by a concerted action of the people for its destruction.

"The extermination of the sparrow is an impossibility. Could it be done in any one State, a few years would again fill it from adjoining States. Nor is it possible largely to reduce its numbers through State legislation and aid. It is estimated that there are at least fifty millions of English sparrows in the State of New York. To reduce this number within five years to twenty-five millions through the payment of bounties large enough to insure it, millions of dollars would be required. As soon as the bounties were withheld, the rapid propagation of the sparrow would quickly restore the original number—limited only by the food supply.

"A one cent bounty in the State of Michigan, paid for one year, secured the destruction of only 31,000 sparrows—a number so small that if they had all been killed in the city of Detroit it would not have made a noticeable difference. So far as beneficial results are concerned, the money paid was actually thrown away—and worse than thrown away.

"A bounty would result in serious harm to agricultural interests. It would only be profitable to destroy the sparrows in cities. They do not infest the rural districts, unless driven out, for want of food or otherwise, from the cities and large villages. It is a timid bird, and the inevitable result of its being hunted in cities would quickly drive it for safety into the country, where it would become exceedingly destructive in grain fields, while extending its distribution. In the neighborhood of London, England, through its depredations in grain fields, entire crops have been left uncut.

"Under a bounty, in the country particularly, large numbers of our native song sparrows, which are all very valuable from their feeding almost entirely on insects, would be killed, as was the case in Michigan. The average town supervisor, who orders the payment of the bounty, would not be able to discriminate between these and the English sparrow, and the State would be paying money for the protection and multiplication of injurious insects.

"The offer of a bounty would be responded to mainly by boys. Its effect could not but be injurious to them, while their careless shots would endanger the lives of others."

Development of the Coal Tar Dye Industry.

At a recent meeting of the New York section of the Society of Chemical Industry the chairman presented in abstract a paper on above subject by F. J. Schoellkopf, Jr.

The author said the cause of the slow development of the aniline color industry in this country was to be found in the wonderful rapidity with which it developed in Germany after it had once fairly got under way. Aniline colors were first made in France, while the tar whence they were derived was made in England. Later the manufacture of the dyes themselves was taken up in England. Germany, however, gradually came to the fore, attaining undisputed supremacy in the manufacture in 1862. The rapid growth of the industry in early years is shown by the following figures cited by the author. The value of the aniline colors produced in Germany in 1874 was $6,000; in 1878, $8,000; and in 1882, $72,500.

This rapid growth absorbed all of the ability in the line of chemistry which was produced. There was immediate and profitable employment in Germany, for all the chemists who had any knowledge of anilines. About 1880, however, the supply of coal tar chemists turned out by the universities exceeded the demand for home consumption, and, the home markets becoming glutted, they turned toward America for a field. Magenta was for a long time the only aniline dye made in America, it having been already made here for ten years. In the years 1882 and 1883 nine aniline plants were established in America. The prosperity of the new industry lasted until the passage of the tariff act of 1883, which abolished the fifty cent specific duty and left only a nominal duty of fifteen per cent ad valorem.

Within one year five of the factories had to go out of business. But the hope of a more prosperous future, combined with their large investments, kept some of the factories from discontinuing operations.

The writer then reviewed the effects of the tariff changes on the industry. The reasons for the lack of financial success on the part of aniline makers in this country he ascribed, first, to the higher wages paid in America, which is one hundred per cent more than in Germany; the greater cost of the plant (fifty per cent more than in Germany), and of the raw materials (twenty-two per cent more than in Germany).

A number of tables were then given showing the cost of raw materials used as compared with the cost in Germany.

In the discussion which ensued it was brought out that since the paper was prepared numerous changes had occurred in the commercial conditions which would affect the figures given in the various tables. They will, therefore, be revised before publication.

Dr. Schweitzer differed from the author as to the principal conditions militating against the American producer, and named as one of the main factors the difficulty in obtaining satisfactory labor of the kind needed. He said: "You cannot get a laborer here who can make a proper observation of a thermometer or stir the contents of an evaporating pan. A lad of sixteen will do there what we have to hire a Columbia College graduate to do."

Anæsthesia in the Lower Animals.

Not very long after the introduction of chloroform as an anæsthetic into medical practice, and when its beneficent and pain-suppressing powers had been fully demonstrated on mankind, inquiry began to be made as to why its merciful influence should not be extended to the domestic animals when they had to undergo painful operations. especially those of a protracted kind; and we remember, says the editor of the Lancet (London), reading a most eloquent appeal for its employment in the case of the horse in a clever little book, published nearly forty years ago, by Sir Francis B. Head, entitled "The Horse and his Rider." This appeal is perhaps as necessary now as it was when first made, and certainly it should be brought again to the notice of those who, for some reason or other, do not resort to anæsthesia, general or local, when plying the cutting instrument, the burning iron, or other pain-producing agent on animals. In the section of his book on chloroforming horses, after dwelling on the unspeakable boon that had been conferred on man by the application of anæsthetics in the abolition of suffering and agony, he says: "Now, if in return for this extraordinary alleviation, or rather annihilation, of all sufferings under surgical treatment, man should deem it his duty to render thanks to that Omnipotent Power from which it has proceeded, is it possible for him practically to perform any more acceptable act of acknowledgment than to allow the dumb creatures in his service to participate in a blessing which, by divine authority, has been imparted to the possessors, not exclusively of human reason, but without favor or exception of animal life? As regards his horses, the performance of this duty is especially incumbent; for not only, like all other animals, are they liable to the accidents and ills that flesh is heir to, but some of the cruelest operations to which they are subjected—such, for instance, as cutting off and cauterizing their tails, burning their sinews with red hot irons, dividing and cutting out a portion of a nerve (sensory), with other excruciating operations on young horses, under which they are often heard to squeal from pain—are inflicted on them to comply with either a useless as well as a barbarous fashion; or to enable them 'to go for another season's hunting;' or for the attainment of conveniences of which the horse derives not the smallest share; or to make them 'sound enough to sell;' and as the high bred, broken down hunter has no voice to ask for mercy, as he cannot boast of possessing reason, or as he has inherited no knowledge, as he has no power to bequeath any, as his whole energies have been devoted to the service and enjoyments of man, by whose mechanical contrivances he is now 'cast' with his four feet shackled together, lying prostrate on a heap of straw, just before the red hot iron sears his overstrained sinews or the sharp knife is inserted into his living flesh—surely in a civilized country like England some high power should be authorized to exclaim, not 'Woodman, spare that tree!' but 'Sportsman, save that horse!' by chloroform from the agonizing torture to which you have sentenced him. You are a man of pleasure—save him from unnecessary pain. You are a man of business—inscribe in that ledger in which every one of the acts of your life is recorded, on one side how much he will gain and on the other, per contra, how very little you will lose, by the evaporation of a fluid that will not cost you the price of the shoes of the poor animal whose marketable value you have determined, by excruciating agony to him, to increase."

This urgent appeal concludes with another allusion to the benefits chloroform has conferred on the human species, and adds: "If, therefore, man to this enormous extent is benefited by chloroform, what 'right has he to withhold it from his own animals, to whom, not only in equity, but by the laws of God, it belongs as much as it belongs to him? Their claims are so affecting and so obvious, the remedy that would save them from all pain is so cheap and simple, that we feel it is only necessary to appeal to the public to obtain by acclamation a verdict in their favor."

Notwithstanding this and similar appeals and remonstrances, the employment of anæsthetics has made slow progress in veterinary practice, expense, trouble, and time being usually the pleas offered for their non-adoption. A number of veterinary surgeons, however, resort to them on every possible occasion, and, putting the avoidance of pain on one side, testify to the advantages they derive from them; indeed, there are some operations which could not be attempted with any hope of a successful result unless the animal is under the influence of an anæsthetic. Even in cases of difficult parturition, partial anæsthesia, especially in the mare, is found to be most advantageous in effecting delivery. Of all animals the horse is the one to which chloroform can be most safely administered; in fact, it is sometimes an arduous task to destroy this creature by inhalation of the drug. It has been given to hundreds—it might be said thousands—of horses, almost undiluted with air, and with absolute impunity. But some veterinary surgeons imagine that there may be danger in this rapid anæsthesia, and advise the mixture of chloroform and air, which, if it requires a longer time to produce the necessary degree of narcosis, is safer. However this may be, it is gratifying to find that attention is being increasingly directed to this matter; and among those who have distinguished themselves in this direction, and have labored to dispel the prejudice which still opposes the use of chloroform, must be named Mr. Wallis Hoare, F.R.C.V.S., Cork, who, in advising the dilution of chloroform vapor with air during inhalation, has improved on the ordinary apparatus by a modified bag and foot bellows, which appears to be easily worked and effective. For adult horses the quantity of chloroform required in this apparatus is from one and a half to two ounces, the time occupied in producing complete anæsthesia varying from ten to fifteen minutes, and Mr. Hoare regards loss of muscular power in the limbs and loss of sensation on striking the animal firmly on the quarter as the best indications of the proper stage at which operations may be commenced. Mr. Hoare is evidently an enthusiast in this humane practice of veterinary surgery, and it is earnestly to be hoped that his example may be largely followed; for though all animals should receive merciful consideration when they have to undergo operations, surely none of them is more entitled to this than the horse, whose muteness under the infliction of pain seems to lead people to think that he suffers but little—a grave error, but one which has caused him to be more abused and tortured than all the others put together.

A Canine Life Saver.

In the March number of Our Dumb Animals, Boston, Mass., the following account of how a dog was instrumental in saving the lives of eight seamen is given:

"Some years ago a vessel was driven on the beach of Lydd, in Kent, England. The sea was rolling furiously. Eight poor fellows were crying for help; but a boat could not be got off, through the storm, to their assistance, and they were in constant peril, for any moment the ship was in danger of sinking. At length a gentleman came along the beach accompanied by his Newfoundland dog. He directed the animal's attention to the vessel, and put a short stick in his mouth. The intelligent and courageous dog at once understood his meaning, sprang into the sea and fought his way through the angry waves toward the vessel. He could not, however, get close enough to deliver that with which he was charged; but the crew understood what was meant, and they made fast a rope to another piece of wood and threw it toward him. The noble animal at once dropped his own piece of wood and immediately seized that which had been thrown to him; and then, with a degree of strength and determination scarcely credible—for he was again and again lost under the waves—he dragged it through the surge, and delivered it to his master. A line of communication was thus formed with the vessel, and every man on board was rescued."

3,000 New Freight Cars.

The New York Central standard box freight car is of 60,000 lb. capacity. Three thousand of these new cars are contracted for. They are to weigh approximately 30,000 lb. each.

The general dimensions are slightly greater than the average new box cars. The inside dimensions are 34 feet 4½ inches by 8 feet 3½ inches, and the clear height is 7 feet 1¼ inches. The appliances named and specified in the contracts made for these cars, are, viz., Gould couplers, Fox trucks, Dunham door fixtures: Kimball turnbuckles, McGuire grain doors, Vose springs, Westinghouse air brakes, and the New York Central standard draught gear, steel brake beams and uncoupling apparatus.

These cars are to be very strongly built, and the end framing has been made especially heavy to prevent bulging and wrecking by bulky freight, which is liable to shift its position.