

The Heathen Chinese Sparrow.

Passer domesticus has its place in nature; possibly monarchical Europe and monarchical individuals in other places can overestimate their worth, but in America they are out of place, and their introduction was a grievous mistake. Its disposition is very far from being republican, and its treatment of some of our native birds, which are of much more value than themselves, is tyrannical and despotic. Quarrelsome with and pugnacious toward the swallows, martins, wrens, and bluebirds, they take by force the houses put up especially for their use. Thanks for the love of liberty, right and justice, the swallow, martin, wren, or bluebird having possession of the house can, and usually does succeed in keeping it against the attack of a single pair of sparrows, but often this pair, unsuccessful in their house-breaking attempt, go off and solicit the aid of their fellows, and return with a dozen or twenty of their kind, lay siege to the place, and by united effort take it, after the rightful occupants have made a desperate defense against enormous odds.

It may be only a coincidence—it is a fact, however—that, as the sparrows have increased in numbers, the purple martins, *Progne purpurea*, have decreased in this locality.

The sparrows are essentially graminivorous and frugivorous, and are not insectivorous in the legitimate use of the term. They are very destructive to garden and flower seeds, the small grain, and no species of fruit is free from their depredations. They are more dirty around the house than any of our native, social birds, dropping *en masse* their excrements about the door. I presume they have their good qualities. I cannot agree with Mr. Minot when he says of the purple grackles that he "would not hesitate to sign the death warrant of the whole race," but I would not hesitate to sign a warrant to banish the house sparrow from the United States to the place from which they came, and furnish a liberal supply of good food and clean water for the voyage.—*Elisha Slade, Somerset, Mass., in American Naturalist.*

Cymene from Turpentine.

Naudin has pointed out a reaction by which cymene can be prepared from turpentine with great facility. If two atoms of dry chlorine are absorbed by one molecule of turpentine cooled to -15° , there is no sensible evolution of hydrogen chloride, but the liquid becomes viscous and contains $C_{10}H_{16}Cl_2$. A slight elevation of temperature produces decomposition, and cymene and hydrogen chloride distill together. If to the mixture 4 per cent of phosphorus chloride be added, and the temperature be maintained at 25° , a regular evolution of HCl takes place until the conversion is complete. Washing with water, drying over calcium chloride, and rectification over sodium, gives pure cymene boiling at 175° , the yield being 75 per cent. The author has observed that at 100° traces of zinc dust violently decompose the body $C_{10}H_{16}Cl_2$.—*Bull. Soc. Ch.*

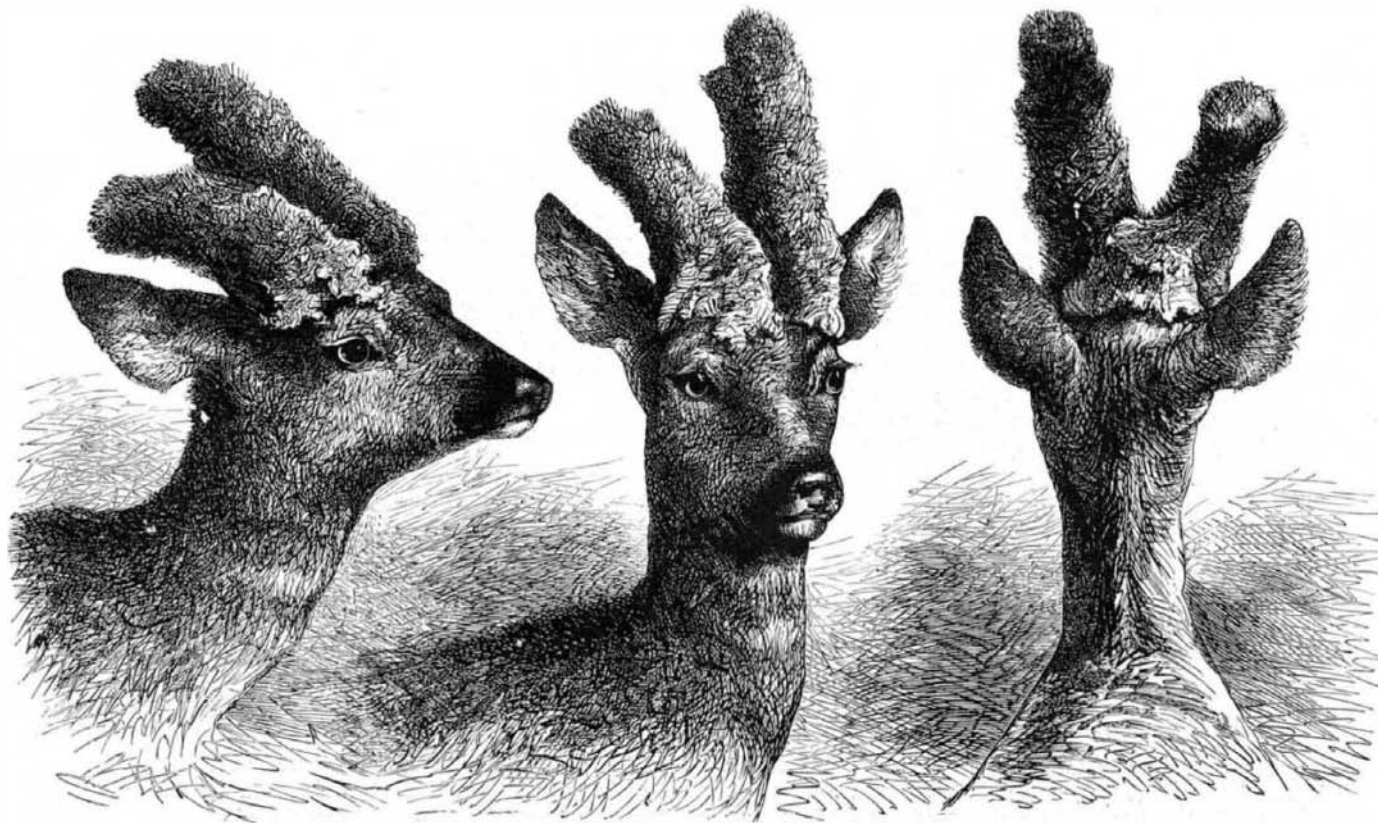
PERUKE-HORNED DOE.

Our engraving represents the head and horns of a doe, which was killed the first of last December in the hunting grounds of Herr Pönsgen, in the district of Aix-la-Chapelle. It differs in no respect from the abnormal horn formations which make their appearance in emasculated bucks, and are represented in most collections under the name of perukes, bishop-caps, etc. The appearance of such horns in a female has, until now, been rarely observed, although in old does smaller stunted horn formations have sometimes made their appearance.

The head and neck of the doe was sent, the day after the hunt, to Düsseldorf, to the well-known taxidermist, Joseph Guntermann. The height of the longest horn was 19 centimeters. The head from the

point of the nose to the rosette 15.2 centimeters. The skin on the neck was extremely thin and parchment like in quality, while in the bucks at this time of year the skin is of considerable strength and thickness.

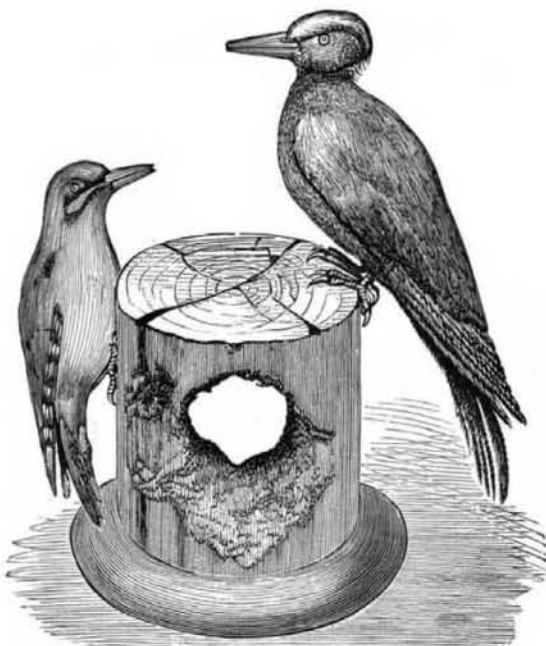
According to the statement of Herr Pönsgen, this doe, with the exception of the horns, differed in no respect in form from the wild does. It was in good condition, its weight being 16 kilogrammes. There were no traces of an earlier wound, and the doe in its lifetime was never seen by hunters in this or adjoining districts.—*Illustrirte Zeitung.*



PERUKE-HORNED DOE.

THE ELECTRIC TELEGRAPH AND THE WOODPECKERS.

The section of wood shown in the engraving was sent by the Norwegian Government to the International Electric Exhibition at London. It was cut from a perfectly sound post impregnated with sulphate of copper. It is perforated with a hole, forming a circle of the diameter of about three inches and a half, which hole has been pecked out by the birds. Electric telegraph poles are frequently thus treated in Norway, in certain districts situated near pine woods, where the bird is found; the holes are, as a rule, at the top of the post. According to the opinion of an ornithologist, the motive should be attributed to the humming sound produced in the post by the vibration of the wire, which the



bird imagines to proceed from worms and insects working inside the post. The smaller bird depicted here is the green woodpecker (*Picus vividus*), the most common of our limited number of British woodpeckers. The larger bird is the great black woodpecker (*Picus martius*), whose native regions are the northern and eastern parts of Europe.

Pezzer's Accumulator.

This battery is constructed as follows: Narrow bands of lead, 10 to 15 millimeters broad and 500 in length, are obtained by cutting up sheets of a suitable thickness, and they are made to take a waved form by being passed between the rollers of a machine used for folding stuffs obliquely. Each of them is doubled in two, and they are placed in juxtaposition, fold upon fold. The free ends are then soldered together by the autogenous process, forming them into fringes. These fringes are introduced in place of the carbon and the zinc in a Bunsen element (Ruhmkorff's model), where some

spring day yesterday. My bees had a splendid 'fly,' and I noticed that some of them came in loaded with pollen and wax." That bees do not gather wax is easily proved by confining in an empty hive or box, and feeding them honey or a sirup made of sugar, when they will immediately commence the construction of combs. During the working season wax is secreted by the bees, and forms in thin white scales, or flakes, between the rings, or segments, of the abdomen. Such renowned scientists as Prof. Agassiz and Tyndall have made some very amusing blunders (blunders which showed they had never seen bees building comb) in attempting to tell how honeycomb is built. The exact manner in which these little pellets of wax are formed into beautiful white combs is well described in the "A B C of Bee Culture," and I give a short extract:

"If we examine the bees closely during the season of comb building and honey gathering, we shall find many of them with the wax scales protruding between the rings that form the body, and these scales are either picked from their bodies, or from the bottom of the hive or honey boxes in which they are building. If a bee is obliged to carry one of these wax scales only a short distance, he takes it in his mandibles, and looks as business-like with it thus as a carpenter with a board on his shoulder. If he has to carry it from the bottom of the honey box, he takes it in a way that I cannot explain any better than to say he slips it under his chin. When thus equipped, you would never know he was encumbered with anything, unless it chanced to slip out, when he will very dexterously tuck it back with one of his fore feet. The little plate of wax is so warm from being kept under his chin as to be quite soft when he gets back; and as he takes it out, and gives it a pinch against the comb where the building is going on, one would think he might stop awhile and put it into place; but not he, for off he scampers and twists around so many different ways, you might think he was not one of the working kind at all. Another follows him sooner or later, and gives the wax a pinch, or a little scraping and burnishing with his polishing mandibles, then another, and so on, and the sum total of all these maneuvers is that the comb seems almost to grow out of nothing; yet no bee ever makes a cell himself, and no comb building is ever done by any bee while standing in a cell. The finished comb is the result of the moving, restless mass, and the great mystery is that anything so wonderful can result at all from such a mixed-up, skipping-about way of working."

In every apiary should be a box or barrel in which to throw all waste comb, and the cappings that are shaved off the combs when extracting. When much transferring or extracting is done, considerable wax can in this manner be saved, and it is as easy to save it as it is to throw it away. During the hot weather these refuse combs and cappings should be melted up into wax quite often; otherwise they will become infested with the bee moth's larvæ, and thereby destroyed. There are several methods of melting up combs and cappings into wax, but I have tried none that is more simple, or better, than to make a bag out of some coarse sacking, fill it with pieces of comb, tie it up, and put it into a wash boiler. Set the boiler on the stove and fill it nearly

full of water. When the water is almost hot enough to boil, take a stick and punch, poke, and press the bag until the wax is all melted and risen to the top. Now lay a narrow strip of board across the top of the boiler, and tie it fast to the handles; then take two or three sticks that are nearly as long as the boiler is deep, press the bag down to the bottom of the boiler with these sticks, and keep it in this position by putting the upper ends of the sticks under the strip of board that is fastened across the top of the boiler. Now set the boiler off the stove, and when its contents are cold, the wax can be taken off in one solid cake. In passing through the

bag the wax is cleansed from all coarse impurities, while the fine particles of dirt that do escape will be found either upon the top or bottom of the cake of wax, from whence they can easily be removed.

When the combs and cappings have all been worked up, and the cakes of wax have been scraped free from all dirt or sediment, the cakes should all be put into the boiler, melted up together, and the wax run into neat cakes.

I made twenty-five pounds of wax, last spring, in the above manner, and the nicest wax I ever saw. To clean

How Beeswax is Made.

I presume that the majority of people who are not bee-keepers suppose that bees gather wax from some source, in the same way that they gather honey, pollen, and propolis. I once heard even a bee-keeper remark: "We had a nice