A NOVEL METHOD OF DOG-SHEARING.

Considerable surprise has recently been caused on the banks of the Seine in Paris, by the appearance of a perambulating outfit for shearing dogs, a practice quite generally in vogue in the French capital. The accompanying engraving clearly illustrates this enterprising institution. It consists of the usual mechanically-operated shearing apparatus, a small 2½-horse-power gasoline motor to drive the former, and a rough carriage on wheels, upon which the motor and the other mechanism are mounted. By means of this outfit six dogs per hour can be sheared, and it is said that the originator of this peripatetic business is making a decided success of it. There seems to be little doubt that before long this means of dog-clipping will be generally adopted.

Los Angeles's Giant Water Scheme.

One of the most extensive projects for securing a water supply as well as electric power which has yet been outlined by engineers, is a plan by which the city of Los Angeles will obtain water in future for domestic purposes. As is well known, the question of water is one of the most important in the West and Southwest, owing to the climate and topography of the country. At present Los Angeles depends upon a single water course. The volume from this stream is sufficient for the present needs of the people, but the city authorities have determined to obtain sufficient for an indefinite period. The engineers called into consultation have made a thorough investigation of the various streams and lakes in Southern California, and have decided that the most practicable for the purpose intended is located in Inyo County. Inyo County includes Owens Valley, which the river of this name traverses. The watershed embraces about 2,000 square miles in area, capable of furnishing a volume of water from which a flow of 600 cubic feet per second can be supplied continuously when the storage system is completed.

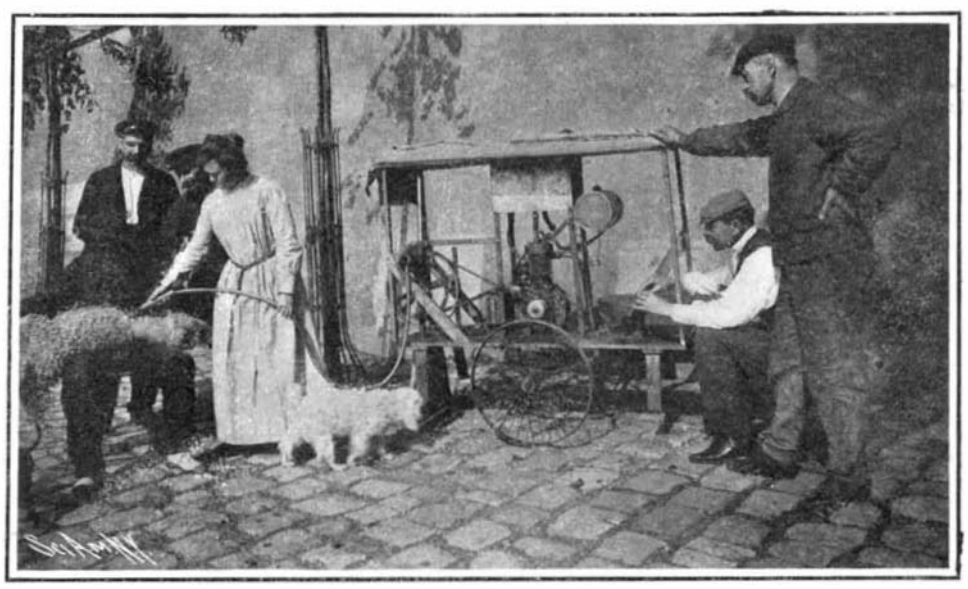
The watershed in question, however, is located in the extreme eastern section of the State, so that it will be necessary to construct a conduit over 200 miles in length. The exact distance estimated by the engineers is 209 miles. When completed this will be probably the longest conduit of its kind in the world, the only one approaching it in length being a canal constructed in the Coolgardie mining territory of Australia. The distance in a straight line from Los Angeles to the valley of Owens River is 175 miles, but the route will make a considerable detour in order to avoid ranges of mountains which form the western side of the valley. As it is, however, no less than ten miles of tunnels must be constructed in order to complete the work, while for a considerable distance the conduit will be built upon an elevated structure of concrete or other supports.

This notable aqueduct will be fourteen feet in width and of dimensions sufficient to deliver the quantity of water referred to when necessary—600 cubic feet per second. It will be supplied from a reservoir which will be constructed across the Owens River at a point some distance from its mouth, where a dam can be constructed at a minimum expense. Already the city has secured the necessary riparian rights, and work upon the reservoir will be begun in the near future. The project is of such magnitude, however, that it is estimated fully five years will be required to complete the conduit and reservoir, and the terminals in the city. The conduit itself will be composed of concrete.

As already intimated, the city will not only secure a water supply, but also a very extensive horse-power for manufacturing and other purposes. As the valley of Owens River is at a considerable elevation above Los Angeles, no pumping stations will be needed. As a matter of fact, the elevation of the valley is no less than 4,200 feet. It is calculated that with a volume of water averaging 600 feet a second flowing through a conduit of the dimensions referred to, fully 60,000 horse-power can be obtained. This will be utilized for generating electric current through a series of turbines connected with the necessary electrical units. Consequently one of the greatest advantages, aside from the ample supply of water for domestic purposes, will be cheap power. As is well known, Los Angeles is the center of several important interurban electric lines, while it has probably a greater mileage of trolley lines within its limits than any community of its population in the United States. It is intended to employ this current largely for transportation purposes, although a considerable horse-power will be available for manufacturing as well as illumination, if desired.

The cost of the system is estimated at $23,000,000, but it has met with such favor that already arrangements have practically been made by which bonds for this amount will be taken at 4 per cent interest. The cost of securing the riparian rights was $1,500,000. The question of raising this sum was decided at a recent election, when the vote in favor of it was almost unanimous. At present the city requires a flow of about 80 cubic feet per second for domestic purposes, consequently with the proposed system it will have over seven times the volume needed at present, but as in the case of New York the people have decided to provide for the future, and it is calculated that the valley referred to will be sufficient for the requirements of a million population. Compared with other waterworks systems of magnitude, that of Los Angeles is far greater than any other in the world, considering the number of its inhabitants.

Hitherto the water of Owens River has been used chiefly for irrigation purposes, and in this connection some interesting statistics have been compiled by the engineers showing the value of a certain quantity applied in irrigating various crops. For example, one and one-half miner's inches are required to grow an acre of alfalfa in the valley. The yield of an acre in a season averages about six tons, one inch of water producing four tons. The growers secure about $10 per ton, consequently the returns from an inch of distribution net $40 in a season. It has been found, however, that in the vicinity of Los Angeles one inch of water is sufficient for five acres of orange trees. The average harvest of this area represents from 1,200 to 1,500 boxes of fruit, which in an ordinary season sell at a rate of $2.25 a box. Therefore the use of the water for orchard irrigation is of enormous value compared with the irrigation of the alfalfa field. As the percentage of surplus water will be very large for a long period, it is intended to utilize this for irrigation in Southern California, so that while the cost of obtaining it will be very large compared with the water supply usually furnished American communities, the returns from the sale of electric power, of irrigation rights, and for domestic use, it is calculated will well repay the outlay incurred. The city authorities have been encouraged in carrying out the plan by the Chamber of Commerce of Los Angeles, which has been active in promoting the scheme.



A NOVEL METHOD OF SHEARING DOGS.

Spontaneous Ignition of Piles.

A remarkable case of spontaneous ignition that recently occurred in erecting the walls of the new Rotterdam quay is related by the Technische Rundschau.

Morrison rams had been in use there for some time, which by 180 to 200 strokes per minute of the falling ram caused a steady advance of the piles. The foundation was such that the pillars had to be driven through the quicksand down to the solid ground.

On withdrawing some piles, the points of the latter were found, owing to the enormous friction, to have been charred entirely and heated to such a point as to begin burning spontaneously on coming in contact with the air; nor could iron shoes prevent this spontaneous ignition.

It may be said that when leaving the piles in the ground this ignition would not result in any damage, the charring remaining confined to the surface, and the heat being rapidly carried away in the moist surroundings.

The British zoological gardens have recently acquired two specimens of the rare talapoin monkey. The talapoin, which receives this name owing to its fancied resemblance to a Siamese priest, is the smallest of the group of green monkeys (so called from the general olive tint of the fur) and is about the same size as a squirrel. The head is round, with large ears, the face is brightly colored, the naked skin around the eyes is orange, and the upper lip and drooping whiskers straw-yellow.

THE SALMON FISHERIES OF THE NORTHWEST.

BY DAY ALLEN WILLEY.

The "run" of the salmon in the waters of streams entering the Pacific Ocean in the Northwestern States corresponds to a certain extent to the movements of the shad from the Atlantic up such rivers as the Hudson, the Susquehanna, and southern watercourses. The Pacific salmon, however, is much larger in size, and, as is well known, forces its way to the headwaters of the stream which it enters, frequently overcoming a very swift current and leaping up waterfalls six feet and more in height.

It has been demonstrated by experiments made by the United States Fish Commission that the salmon hatched out on a certain watercourse always returns to it or to an adjacent watercourse after maturity, and apparently endeavors to reach the locality of its first home. Fish which have been marked to identify them have been found in or near the waters which they left before reaching maturity. Frequently the salmon is so exhausted by the journey upstream, which is sometimes hundreds of miles in length, that it floats into shoal water and dies if it is not captured. During the season of the salmon run, it is a fact that some of the creeks in the State of Washington connecting with the sea have been so filled with dead and dying fish that the waters were polluted for the time being.

Advantage has been taken of this habit of the salmon to catch it with a device which is decidedly unique in its construction and operation. It might be termed an automatic net, since it not only catches the fish, but delivers it into the receptacle from which the salmon is taken to be prepared for market. The net is employed principally upon the Columbia River, where hundreds are in use, especially in the vicinity of the Dalles and above this formation. As the wheel is operated entirely by the current of the river, it must be placed where the movement of the water is sufficiently rapid to revolve it. The salmon wheels are of two kinds, one having a movable base and the other fastened to the shore or to cribwork projecting from the bank. The shore wheels are by far the largest, some of them being fully fifty feet in diameter. As the illustrations show, they are not perfectly round, but consist of a framework, which is usually divided into three or sometimes four sections. This framework is composed of light but tough wood, the sides covered with stout wire netting reinforced with bands of iron. The rim of each section is also covered with the same material, with the exception of a space which is left entirely open. The wheel revolves in the usual manner upon an axle, but in each section is placed a wooden trough. This trough is set at an angle, and projects about a foot or so from the side of the wheel, its lower end being directly over another trough which leads to the fish collector. This may be a box or merely a platform.

The wheel is suspended in a stout framework, each end of the axle being set in grooves, so that it can be moved up or down by the use of a block and tackle attached to the top of the framework. This is necessary in order to adjust the wheel to the height of the water, for at times the Columbia River rises from twenty to thirty feet, and if the wheel were immovable it would be too far under water to be of service. Consequently, the apparatus is raised or lowered to such a degree that about four feet of the wheel is continually submerged, the submerged portion acting like the paddle of a steamboat wheel. To resist the pressure of the water, which is very great, especially during flood time, the framework into which the wheel is set is built of heavy beams bolted together, and anchored to the shore not only by other beams, but frequently by steel cables, where the apparatus is not set into a fishway.

As the wheel revolves in the water, each of the compartments into which it is divided is successively submerged, the motion of course being downstream. The salmon in their ascent, going in the opposite direction, strike the rim of the wheel as it revolves, or pass into one of the compartments. If they hit against the netting and fall away from it, they drop into the opening, as each projects beyond the netted portion of the rim. As the wheel turns, the imprisoned fish are swung around with it, and drop into the trough in the bottom of the compartment. Through this they slide into the larger trough, and then also by gravity are deposited in the fish collector.

When the fish are thrown into the collector, they are taken out by hand and killed and cleaned on the platform or in the shed, which may be built near at hand. A few strokes of the knife remove the head and entrails, when they are ready to be packed and sent away or sold to a local buyer. The killing and clean-