

## THE AMERICAN MERINO.

The Spanish Merino sheep has been so completely revolutionized by American breeders during the past 50 years that in some parts of the world they have gained the name "American Merinos." The history of this remarkable breed of sheep dates back many years and embodies too many points for recital in a sketch of this kind. The first individuals of the breed were brought to this country at or about the beginning of the present century, and the sheep of to-day if compared with those of early importation would hardly be recognized as belonging to the same family. In productive value there has been signal improvement. Then an average ram's fleece would not weigh more than five or six pounds. Now an average thoroughbred ram will shear 25 pounds.

From Merino wool are manufactured all our finest broadcloths, not to speak of the many other highest grade woolsens. And if one takes into account all the points of value in a sheep, it will be found that the Merino has come to be regarded in most wool-growing countries as the best sheep for all purposes. In addition to value in products there is in the animal a most valuable adaptation to all climates and conditions. They thrive in extreme cold and hot countries and are not less vigorous in mild climates like that of the Pacific coast.

There are several types of the breed established by painstaking breeders, each molding the animal according to his own peculiar ideas and aims. Some have concentrated their efforts toward producing a dense heavy fleece without paying so much attention to other points, while others have succeeded in combining in a remarkable degree a heavy fleece with other points of excellence which, of course, has rendered them among the benefactors of the country.

**SINKING RIVERS.**—All of the principal and many of the smaller streams in Nevada have no visible outlet. The larger rivers all terminate in lakes of very considerable area, respectively. The most singular thing is that the water supply in these lakes is at all times the same. The spring freshets, filling the rivers from bank to bank work no perceptible change in these great reservoirs. What becomes of all this water is the mystery. It has been the generally accepted theory that there exists a subterranean connection between the Nevada "sinks" and the Pacific ocean. But this theory is now disputed by a gentleman who has resided on the shores of Humboldt lake for years. The *Silver State* has the following on the subject: A great many persons entertain the opinion that there is a subterranean outlet to the sink of the Humboldt. One of these expressed his views on the subject in the presence of Walter Schmidt, who has resided near the sink for several years, and built a quartz mill near the visible outlet of the lake. Schmidt dissented from this opinion, and argued that as the sink has a hard, clayey bottom, impervious to water, it would be impossible for it to soak through underground, and attributed the disappearance of the river to evaporation. "This," said Mr. Schmidt, "is so great in the summer time that a wooden bucket filled with water in the morning would be empty by noon, and would fall to pieces before night."—*Bureka Sentinel*.

**BRINE FOR THE PRESERVATION OF ANIMAL AND VEGETABLE MATTER.**—M. Mercier, in the *Archives de Genere*, recommends a solution of common salt for the preservation of zoological and botanical specimens for scientific purposes. It is cheaper than alcohol, does not evaporate, does not extract or alter the colors, and is not likely to be surreptitiously drunk. The brine is boiled to expel gas, and the specimens are immersed at about 80° C., and closed up. If the brine really answers the purpose, it will save a good deal of expense and trouble in museums.

## PHOTOGRAPHY IN COLORS.

Many people, latterly, have erroneously given to different systems of painting on photography the misplaced title "photography in colors." This was too much to say of the ingenious results, some of which were obtained by the transference of the photographic image, some by other means. Nay, attempts were even made to make us believe that photographic proofs, tinted by oil or water-colors, were proofs obtained directly in colors. The only process which, up to the present time, has really deserved the name of "photography in colors" is that of M. Ducos du Hauron, but it is only still in infancy, its practice being very difficult, and the colors obtained not always being of the required tone. To arrive at the real colors of nature is no easy task, but we doubt not that M. Ducos du Hauron will, sooner or later, solve this difficult problem.

M. Germeil Bonnaud's process of photographing in colors—we use this term intentionally, because it is the only term strictly applicable—simply consists in causing the photographic action to operate directly on the color. To this end M. Germeil Bonnaud has carefully sought the means of rendering a neutral color sensitive, and at the same time insoluble, so that it might be able to resist the numerous baths necessary to the photographic process. When this process is used, all the operations remain the same as in the ordinary method, with this great advantage, that the impressions made by the silver salts on the colored background give precisely the effect of the original model, and have not that hardness of tone that generally characterizes a "retouched" photograph. The print comes out of the bath completely colored. Thanks to the chemical agents and the sensitive paper used by M. Germeil Bonnaud, the colors and the photograph are henceforth indelibly united. But, in addition to the great artistic results, the material advantages of this discovery are very considerable. Firstly, the true harmony of color is restored, while prints colored by any of the old processes—photo-painting, as one might call them—are always monotonous and wanting in durability. By oil painting on the photograph, the employment of water-colors, or even of transparent media, the cost of production was immensely increased. And this was not all, because to obtain really artistic effects it was necessary to employ artists of such a degree of talent as is rarely found in country towns, where one does not find every day a Millais, a Dickinson, or a Nadar. Now the photographer can do it all himself. So much the better for those who are neither painters nor draughtsmen. It appears that the cost of the colored photographs produced by the Germeil Bonnaud process is very little, if anything, more than the ordinary uncolored ones. So we get at the price of an ordinary carte-de-visite a photograph in unchangeable and unfading colors.—*M. K. Verspagen, in Scientific American*.

**THE NEW YORK EXHIBITION OF 1883.**—The committee of citizens having in charge the selection of a site or the location of the World's Fair in 1883, have at last agreed upon a suitable place. The committee consists of Jackson S. Schultz, Orestes Cleveland, Col. Hoe and Messrs. Vance and Tiffany. A report is being prepared, and will be submitted for publication within a few days. It was resolved at a meeting of the committee that the location should not be divulged by any member of the committee previous to the publication of the report. It is believed that the site selected is a tract of 170 acres on Long Island Sound, extending from Port Morris to the Southern Boulevard. The reason of the committee for refusing any information on the subject is their desire to prevent speculators in real estate from taking an unfair advantage of the owners of land in the neighborhood, by purchase in advance of the publication of the report.

## NEW INVENTIONS.

We publish descriptions of the following new inventions, obtained through Dewey & Co.'s Mining and Scientific Press Patent Agency, San Francisco:

**KING BOLT FOR TRUCKS.**—Chas. Oester, S. F. Dated April 22d. This improvement is intended to be applied to trucks for carrying heavy weights, and refers more particularly to the construction and operation of the king bolt, or that portion joining the body of the truck to the front axle, about which the front wheels move in the arc of a circle. The improvements consist in the application of a coiled spring around the king bolt, above the axle, in such a manner as to lessen the jar incident to this part of the vehicle and insure a more perfect action of the forward axle and wheels. It also consists in a method of enclosing the spring out of the way of the dust; in a means of oiling the bearing; and in certain details of construction, by which the improvement is rendered efficient for the purpose for which it is intended.

**FARM GATE.**—E. L. Rugg, Capay, Yolo Co. Dated April 22d. This invention relates to that class of gates which are opened and closed by the driver or rider without the necessity of getting down from the wagon or horse, and the improvements consist in fitting between up-rights a gate which may be slid up and down in grooves, the gate being balanced by weights. A peculiarly shaped hook or catch serves to hold the gate in an elevated position after it is raised by a cord hanging from the frame, and this hook is so constructed that the opposite cord when pulled upon will release said hook and allow the gate to descend. The ropes are so arranged that either will act as an opening or disengaging cord, according to the direction in which the team passes through.

**METALLIC HARROW.**—Silas Harris, S. F. Dated April 22d. The improvements consist in riveting on each side of the holes through the flat bars composing the harrow frame, a peculiarly formed right angled piece of spring steel, the two pieces forming a clamp for the harrow tooth. The upper edges of these clamps are nearer together than the lower, so that as they are driven apart by the insertion of the tooth, they grip the tooth firmly and hold it in place. The inner faces of the clamps are roughened so as to hold the tooth more firmly.

**MANUFACTURE OF BOOTS AND SHOES.**—Joseph Hobart, Nordhoff, Ventura Co., assignor to Hobart, Wood & Co., of San Francisco. Dated May 6th. The improvements consist in securing the counter of the boot or shoe by means of rivets along its edges so as to prevent it breaking down and losing its shape; and also in continuing the counter past the vertical leg seam so as to prevent ripping of the leg seam at the point where it most frequently occurs, and preventing also any leakage at that point.

**AN IMPROVED KNITTING MACHINE.**—The English correspondent of the *Iron Age* writes in regard to a new American knitting machine, as follows: I heard the other day, of a wonderful American machine which has just been introduced into this country for knitting purposes. It is now at Nottingham, and is said to be of such an amazing kind that the finest weaving machine is a "mere fool to it." Some of the Lancashire manufacturers at Bury and elsewhere are not unlikely to adopt it for hat making, and a variety of other purposes. It has 42 needles—or may have 10,000 if need be—and may be readily run at 160 revolutions per minute. It is the invention of a Scotchman, who has spent 14 years in perfecting it. He offered it first in England, but could not obtain a purchaser. He then went to the United States, where its merits were speedily recognized and appreciated. Having sufficiently protected his machine by patents, he is back again in England, and is said to be about to sell his rights to a wealthy company.