

TO REMOVE SCALE FROM WATER BACKS.

Hard water causes a limy deposit or scale on the inside of water backs and heating coils. If allowed to accumulate, the scale retards the circulation and heating of the water, and, by closure of the bore, may prove dangerous. Moreover, continued neglect makes it increasingly difficult to remove the scale.

The water back or coil should be removed from the fire box, says the United States Department of Agriculture. At the union or other joints nearest the fire box, disconnect all pipes and unscrew them from the water back. If there is a clamp which holds the fire-brick lining against the oven, loosen it and remove side and end linings. Lift out the water back and take it out on the ground. Soft scale or sludge may be removed by pounding the water back with a mallet or hammer and then flushing with a strong jet of water. A long gouge or chisel is used on those surfaces that can be reached. Sometimes the water back is heated in a blacksmith's forge and then pounded, but unless carefully done this treatment may break it. Some householders keep a spare water back for use while the other is being cleaned.

Waters of varying chemical composition cause scale differing in composition and hardness. Ordinary limestone (calcium carbonate) scale, if not of excessive thickness, may readily be removed with muriatic acid. Gypsum (calcium sulphate) scale is hard and resistant and with other constituents in their more compact forms is little affected by muriatic acid. The water back should be laid on the ground and filled with a strong solution of the acid in water. The strength of the solution should vary with the amount of deposit, the ordinary mixture being one part of acid and five to seven parts of water. If the deposit is very thick, the acid needs little dilution. Commercial muriatic acid in bottles containing six pounds, about two and one-half quarts, costs 20 to 25 cents a pound. The bottle should be labeled "Muriatic acid—poison"; and, like other chemicals, should be kept where children cannot get it. Heating the water back hastens the action of the acid. At the end of an hour or two, or sooner if the deposit is dissolved, pour the solution from the water back and flush it thoroughly with hot water to remove the acid. If all the deposit has not been removed, repeat the operation, making sure that the acid is completely washed out before replacing the water back.

Similar methods may be used with copper coils. Place the coil, or heater, on two sticks over a large bowl. With the aid of a lead funnel pour the acid solution down through the coil. Dip from the bowl and continue to circulate the solution through the coil until the deposit is dissolved. The coil should then be thoroughly washed out with hot water.

The hot-water flow pipe close to a water back or coil frequently becomes thickly covered with scale. If the pipe is brass, it may be disconnected and treated with acid and then washed out with hot water. If the pipe is galvanized iron and in bad condition, it will probably be more satisfactory to replace it with new pipe.

Vanished Annuities.

For a score of years, beginning in 1850, the various Indian tribes along the Missouri River received not more than half the annuities the government endeavored to send to them. With the transferring of Indian affairs from the military authorities to the hands of agents, the spoils system became the vogue. The Indians believed their Great White Father in Washington had lied to them and cheated them. Stupendous frauds and outrages were commonly practiced by some agents. Those agents who desired to be honest were compelled to take the annuity goods up river in America Fur company boats. Having no warehouses, they were forced to store their goods with those of the traders. The mixing up of commercial goods and annuity goods always left the latter depleted, and what had been started up the river as gift was received by the Indian only after he had paid for it with valuable furs.

The report of the Northwestern Treaty Commission to the Sioux of the Upper Missouri, 1866, significantly states: "Deliveries of goods should be witnessed by some Federal officer who should certify that he saw the delivery." Two years earlier General Alfred Sully reported, "This system of issuing annuity goods is one grand humbug."

While the treaty-annuity agency system made treaties that were not carried out; granted annuities which were not delivered; established a control that was too frequently vitiated by humbug and bare-faced fraud, the steamboats became of prime importance to the river tribes. With the buffalo on the road to extermination the steamboats brought supplies. Grown to be dependent upon traders, the boat brought traders. Then the Indians were retired to reservations and the railroads drove the steamboats from the river completely as the white man killed off and drove away the buffalo.

One agent in the Sioux country, whose salary was about \$1200 a year, retired after three years with a large fortune. Questioned how he saved so much out of a hundred dollars a month he said he "had to be economical."—From Adventure Magazine.

—Colorado reports that 500,000 destructive jack-rabbits were killed there last winter. More than 50,000 were slain in a single drive. The rabbits are given to many poor families for food.

Games for the Home Gymnasium.

If you want to keep in good health equip your garage with movable gymnasium apparatus and play games with your neighbors. Here are some games to start on:

Hang-On-Relay. Place members of each team in file about eight feet apart. At a signal the last person in each line moves forward to the next player, encircling her waist with her arms. Then both move forward to the third, who is similarly grasped by the second, and so on until all members of the team are added to the moving "train." There is a goal a convenient distance in front of the file leader to which the completed "train" runs. The team first making the goal, of course, is the winner. However, if any member drops off her train, that is, fails to hang on, that team is disqualified.

Hopping Relay. At a signal number, one player on each team starts

for a given point by hopping on one foot. She hops to the point, returns and touches the second member of her team, who repeats the procedure. This is continued until all members of the team have completed the circuit, and that team wins the last member of which first crosses the finish line. If any player touches the floor with the foot upon which she is not hopping, she must return to the starting-point and begin again.

Pass And Change is a game in which the players are numbered and form in a circle facing in. "It" is in the center with a soft ball. "It" tosses the ball to one of the players, simultaneously calling out two numbers. Those whose numbers are called must change places. Meanwhile the ball is thrown back to "It" who catches it and tries to hit one of those whose number she called with the ball before she reaches her new place. If a player is thus hit with the ball she becomes "It."

Three Deep is an old game most of your club members will remember having enjoyed in their childhood. It is exciting and will still prove good fun and fine exercise. All players but two form in circles, one within the other, all facing in. Those in the outer circle take positions directly behind those in the inner circle. Of the two players not in the circles, one is "It." "It" pursues the other, who runs around or through the circle. If "It" tags "It" becomes "the pursued." At any time, "the pursued" may step in front of one of the other players forming the inner circle, when that file becomes "three deep." Immediately the one in the outer circle, in front of whom "the pursued" stopped, becomes "the pursued" and, if tagged, she is "It."—The Delineator.

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