THE DAIRY

Treatment for Milk Fever

In the administration of medicine by the mouth, and especially drenches, great care should be taken to prevent the fluids from getting into the larynx and from there into the lungs where they will set up traumatic pneumonia, which is almost invariably fatal. In case the throat is not paralyzed the drench may prove of value and should be given slowly and immediately stopped at the first sign of uneasiness or coughing on the part of the animal. While the patient lies on the side she must raise the weight of her body at each inspiration, which is very exhausting, and hypostatic congestion of the dependent lung is greatly favored. Consequently it is of importance that the cow sholud be kept propped up on the breastbone by means of bags of chaff or straw placed against her side. In the way of medicinal treatment purgatives may be given in the first stage of the disease when the animal can swallow, with the precautions above mentioned. One pound of Epsom salts and 2 ounces of creolin dissolved in a pint of water will prove beneficial. The creolin is added for its antiseptic action to prevent fermentation in the paunch with the consequent danger of the eructation of foods and their subsequent passage into the windpipe. Ammonium carbonate in 2-dram doses dissolved in 2 ounces of water will be found to act equally as well as the creolin in this respect. Epsom salts is rather slow in its action, and an injection under the skin with a hypodermic syringe of 1½ to 2 grains of eserine sulphate, when obtainable, will be found quicker and more efficacious. The rectum should be emptied and injections of 1 to 2 gallons of warm water given to stimulate intestinal movements. However, the normal movement of the bowels, once lost, is exceedingly hard to re-establish, and sometimes all efforts in that direction fail. The urine should be drawn with a catheter or by pressure on the bladder with the hand in the rectum, as the bladder is paralyzed and unable to empty itself.

The feeble pulse and subnormal temperature call for the administration of stimulants. Injection under the skin of 1 dram of the following solution every three hours are probably the most efficacious: 80 grains of caffein, 60 grains of sodium salicylate, and 4 drams of water. Similar injections of 1 grain of strychnia, sulphate three times daily will also be found very beneficial, although numerous other drugs may be recommended, as spirits of camphor, veratrin, tincture of digitalis, alcohol, etc. In case the animal is very excitable the head should be restrained in such a manner as to prevent injury, and, in case the violence becomes excessive, 1½ ounces of chloral dissolved in a quart of water may be injected itno the rectum, or 5 grains of morphine sulphate under the skin.

The Potassium Iodide Treatment

As previously stated Schmidt, of Kolding, advanced the theory in 1897 that the cause of milk fever was the absorption of leucoaines from the udder, and recomended that potassium iodide be injected to prevent the formation of the toxin and to neutralize that already existing. This was the most rational theory so far advanced and the treatment proved to be beneficial, being followed by astonishingly good results. After this treatment was generally resorted to throughout Europe and America the death rate fell from 40 per cent to 17 per cent. The apparatus required for the Schmidt treatment is exceedingly simple and consists of a piece of rubber tubing about 4 feet long, to one end of which is attached an ordinary milking tube, which is inserted into the teat. At the other end a funnel is fitted, into which the solution is poured. Previous to the injection the udder should be thoroughly milked out and washed off with warm water and soap, followed by a 5 per cent solution of carbolic acid or creolin. A clean towel should be placed under the udder to keep it from coming in contact with the stable litter or other filth. Two and one-half drams of potassium iodide are then added to one quart of water previously boiled for fifteen minutes and allowed to cool to the temperature of the body. The funnel and tubing should likewise be disinfected before the injection. The milking tube is inserted into the four teats in succession, each quarter of the udder, after it has been milked out clean, receiving one-half pint of the liquid. The udder should then be thoroughly massaged to make sure that all the milk canals are penetrated by the liquid. In case improvement does not occur the injection may be repeated once or twice at intervals of eight hours, always observing the same antiseptic precautions, as it is possible to produce dangerous mammitis (caked bag) and ruin the udder by careless injections which produce pathogenic bactreia. This danger, however, is entirely obviated by the use of ordinary antiseptic precautions as described above.

Of all known methods of treating milk fever, the injection of sterile atmospheric air into the udder is by far the most simple and practicable as well as the most efficacious and harmless one at our dispoasl, and only occasionally requires that medical treatment be given.

For a considerable length of time the entire value of Schmidt's treatment was considered to be the antitoxine action of potassium iodide, and soon numerous investigators began injecting various other antiseptics, such as carbolic acid, creolin, etc., with equally good results. Sterile water with no increase in the mortality, and it wa stherefore considered that the distention of the udder was an important factor as the antitoxine action of the iodide of potash. Continuing along these lines, Kortman used antiseptic gases (etherized air) with beneficial results. Oxygen was then tried bu Knusel with increasing success and the deaths among the experimental cases virtually ceased. The apparatus for treating with oxygen and etherized air, however, are expensive and cumbersome, and this greatly limits their use by the average practioner.

To Anderson, of Skanderborg, belongs the credit of first having made use of plain atmospheric air, although Schmidt had previously recommended the admittance of air with the potassium iodide solution for the purpose of obtaining greater diffusion of the liquid. Andersen first injected air along with sterile water and then by itself. The results were astonishing ly successful. Thus Schmidt reports that out of 914 cases treated in Denmark, 884, or 96.7 per cent, were restored to health. The record of 140 of these animals shows that recovery occurred in the avreage time of 6⅔ hours. Of this number 25 cases required a second injection, while in 3 of the latter number it was necessary to give a third treatment before they were able to get upon their feet. The treatment is also practically harmless, as the statistics of the abovementioned 914 patients show only 1 cow was affected with a severe attack of caked bag after this treatment, while in 4 other cows a milder inflamation of the udder was apparent. Equally good results have likewise been obtained in this country.

The method of injecting filtered air into the udder is easy of manipulation, requires but little time, and is readily accompished by means of a milk fever apparatus. It consists of a cylinder with miller screw caps and on either end. Cap may be removed in order to place sterile absorbent cotton within the chamber. To this cap the ruber bellows are connected by 9 inches of ruber tubing. Cap is to be removed together with the attached 18 inches of ruber hose, at the free end of which is the self-retaining milking tube, for the purpose of disinfection before treating the case. The pulling on or off of the tubing on the nozzles of the milled caps is thus rendered unnecessary. Within the metal cylinder is a wira net, which prevents the obstruction of the outlet of the chamber by holding back the sterile cotton, and also permits of the unscrewing of the lower cap and the disinfection of this portion of the apparatus, including the milking tube, without contaminating the packing. Absorbent cotton impregnated with carbolic acid (carbolized cotton) or other suitable disinfectant can be purchased from the drug trade in most localities, and is better, though slightly more expensive, than the plain cotton.

Previous to making the air injection, the hands of the operator should be thoroughly cleansed and the udder should receive the same careful antiseptic treatment as has been recommended in discussing the injection of potassium iodide. Soap and water should be applied to the teats and udder, after which they should be carefully disinfected with a 5 per cent solution of carbolic acid (3 tablespoonfuls of pure carbolic acid to 1 quart of water. A clean towel should then be placed under the udder to prevent the teats from coming in contact with dirt or filth of any kind. The milking tube, before it is placed in the teat, should have been perfectly sterilized by boiling for fifteen minutes, with the lower hose and cap attached and the apparatus should be wrapped in a clean towel, without touching the milking tube, to prevent contamnation before use. If the apparatus has been subjected to this treatment shortly before and it is desired to disinfect only the milking tube, the latter may be placed in a 5 per cent solution of carbolic acid for five minutes. It is then carefully inserted into the milk duct of the teat without emptying the udder of milk. Air is now pumped from the bulb into the reservoir and thus a continuous flow of air is forced through the filtering chamber and into the udder. Slight massage or kneading of the udder will cause the innermost recesses of the milk tubules to become distended with the injected air After one-quarter of the udder is well distended the milking tube is removed, care being taken to prevent the outflow of air by having an assistant tie a broad piece of tape about the teat at the time the milking tube is withdrawn. The same treatment is repeated with the other three teats until the udder is satisfactorily distended. In case the air becomes absorbed and no improvement is noted within five hours, a repetition of this treatment should be made under the same antiseptic precautions as at first. The tape should be removed from the teats two or three hours after the cow gets on her feet, the constricting muscles