ed to get what they need. In the case of stabled horses they must be allowed plenty of time to drink and not be led away the first time they raise their heads from the water. Even those who practise the "water before feeding" principle do not hold that to mean no water until the next meal. A horse returning home tired and thirsty will not eat his food well until he has had a drink, but after eating a lot of dry feed he often feels thirsty and it is reasonable that he should be allowed a drink if he wants one.

The approximate quantity of 6-8 gallons will be less when the horse is at grass, but more will be required when the weather is very hot, when the horse perspires greatly, when the food is exceptionally dry, and in the case of the pregnant and the suckling mare.

### Cattle

All cattle must have access to water; it is indispensible for milk production due to the fact that it forms 87 per cent, of the animal's milk yield. Often the production of good cows is lessened merely because they cannot conveniently get plenty of fresh, pure water.

The amount of water cows drink depends on the external temperature, the yield of milk and the nature of the feed. It is probable that a cow requires between 3 to 4 gallons of water for each gallon of milk produced, and more may be consumed in herds where it is customary to provide salt licks. Cows in milk therefore require 12 to 15 gallons per day and high producing animals even more.

All fattening cattle should be allowed as much water to drink as they need; on roots of course they will consume less on account of the high water content in the roots, but nevertheless, it is an advantage even then for water to be available.

Calves require much more water after they are weaned than before; if the supply is insufficient when the milk is being cut down, they may receive a check in growth which may never be made up.

## Sheep

Opinions as to the amount of water necessary for sheep vary more than is the case with any other domestic ani-

## Cobalt Deficiency in Sheep and Cattle

As the result of investigations into the prevention of bush sickness by the use of cobalt, it is now possible to recommend to farmers in the districts concerned, methods by which they can economically prevent the incidence of the disease. These recommendations are made jointly by the Department of Agriculture and the Cawthron Institute, and are available in a bulletin issued free by the Department.

mal. On ample succulent feed and when roots are largely used, water may be denied sheep. Generally, however, an adequate water supply is just as important in sheepfarming. A sheep requires 1-6 quarts of water daily according to the class of feed, temperature, and weather. Ewes suckling lambs and sheep being fattened require more water than those carried through the winter. Drinking from stagnant pools and swamp, areas, wherever practicable, must be prevented because of the increased risk of infestation with internal parasites.

Pigs

Water is just as essential for the pig as for any other domestic animal, but in New Zealand more than the fluid requirement is usually provided in the dairy by-products so commonly used.

Without a sufficiency of fluid, animals are unable to make good the loss of water that occurs through the secretion of milk, saliva and the digestive juices or the excretions of the skin and kidneys, and consequently they become unable to exercise their maximum power of production, whether of flesh, milk, wool or work.



You fit it to your car, your truck or tractor, and you can work over any kind of land with ease. The Morrison Auto Lifting Sweep has special spring steel teeth and is fitted with a lift to raise the teeth off the ground. It's the indispensible harvester for the efficient farmer. You economise with the Morrison Auto Lifting Sweep—it's easy—it's speedy—it's the modern way of harvesting—with less labour and lower operating costs. Write for details now.

# Mactwans

LIMITED

MacEwans Machinery Ltd., Auckland and Hamilton. Agents at Galatea, Pukekohe, Te Aroha, Te Puke, Thames, Wairoa and Whangarei. Messrs. J. B. MacEwan & Co. Ltd., Wellington, Palmerston North, Carterton, New Plymouth, Stratford, Hawera, Opunake, and Ohura. Agents: Messrs. C. W. Parker & Co. Ltd., Blenheim.

Blenheim. Messrs. Reid & Gray Ltd., Dunedin, Balclutha, Gore and Invercargill.

#### POST NOW .....

I am interested in the Morrison Special Automatic Lifting Sweep. Send me by return full details and illustrated literature.

NAME .....

ADDRESS .....

..... J.A. 15/12/42