

## Lime Meal for Feeding\*

*E. O. Eckstein, Ch.E., Ph.D.*

It has been maintained that calcium deficiency in cattle develops only where there is calcium deficiency in the soil. This is not true, as such deficiency is due to certain changes in the animal making it unable to accumulate the calcium balance of its body. Furthermore, fields and meadows on rich lime substrata are often deficient in lime and incline towards acidity. All kinds of calcium deficiency diseases in cattle, as for example, "licking disease"\*\*\* and brittleness of bones, are no less widespread in limestone regions than elsewhere. Cases of tooth decay and rickets occur in human beings even in places where the drinking water contains sufficient lime to meet the requirements of the organism. The problem of lime deficiency, which is keenly observed these days, thus clearly demonstrates that healthy vital processes are not necessarily maintained merely by supplying the organism with a certain quantity of a needed substance. It is then far more important that the organism be capable of assimilating what is available of the needed substance. In regard to the coarser nutritive processes, it is evident that even the richest food and fodder are of no value if the organism cannot digest them, and this holds good to a much higher degree for the finer formative processes of the organism in which calcium plays a part.

The whole question is, therefore, how the organism can be stimulated so as to actually assimilate the needed amount of calcium.

In order to answer this question it is necessary to consider in what form and composition calcium appears in the organism. Let us first consider the skeleton, which makes it possible to maintain the external form. Abnormalities in skeletal formation are readily apparent and cannot be compensated for except by increased growth of muscle and connective tissue. Calcium phosphate predominates in the skeleton and is most abundant in those parts which mainly determine the shape of the body, such as the joints. Bone is no mere accumulation of material, but its calcium is worked in in such a way that a maximum of strength is achieved with a minimum amount of substance. This structural modelling can evidently not originate in the calcium itself, but must be due to some force which takes hold of the calcium and through it produces the form. This force is light. Deficiency therein, wherever it be found in nature, brings about formlessness. Excessive light, on the other hand, tends to sharpen the form. Rickets and other bone deformities are due to deficiency in light and are not cured by simply supplying the unhealthy organism with a certain amount of ordinary calcium. If I want to achieve a strong and healthy bone

\* The Bio-Dynamic Farming and Gardening Association does no advertising. The Weleda lime powder has been developed out of bio-dynamic ideas and practices and has proven its great value. The Association's only aim is here to indicate to the farmer a new means for improvement of the health of his cattle.

\*\*\* Characterized by the tendency to chew almost anything, such as pieces of wood, bark of trees, leather, other animals, etc. This disease is not cured by merely supplying calcium, but other stimulants such as copper sulphate must first be applied.

formation, the result of combined action of light and calcium, I must seek a process in nature through which this very combination of light and calcium takes place. This is found in the formation of natural calcium phosphate, or apatite, which exists in rocks as beautifully formed crystal and is considerably harder than ordinary lime. Its phosphorus possesses the strongest affinity for light of all minerals. (Phosphorus is called "the light-bearer.") It is therefore possible to produce a remedy from apatite which stimulates the organism to bring about the combination of light and calcium in the proper way.

Calcium carbonate is also present in the organism, in addition to calcium phosphate. It is not only found in the skeleton, but also in connective tissue and in the blood and lymph fluids. In nature it is found under conditions already described in this article. Although not soluble in pure water, calcium carbonate readily becomes soluble in water containing carbonates, in which form it is present in drinking water of limestone regions, but even so it is of no use, unless the organism is capable of its assimilation. It is again a question of stimulating the assimilative activity of the organism. Just as in the case of the form-producing function, we sought help in a natural process in which this function was active to an extreme degree, namely, in the formation of apatite, so in this case we seek a natural process in which the assimilation of double calcium carbonate is highly developed. The creatures called mussels devote a large part of their vital activity to the assimilation of double calcium carbonate and to its conversion and final deposit as a calcium shell. It is possible to prepare a remedy from mussels which actively stimulates insufficient calcium metabolism in the same way in which the apatite preparation stimulates the combination of light and calcium. Ponderable amounts of calciferous substance are then introduced into the body. The quantity thereof is, however, not of especial importance, because the calcium is primarily the bearer of those forces the activity of which is dependent upon its presence. This point of view may be contrary to prevalent ideas, but is confirmed by the many excellent results obtained from the use of the Weleda Lime Powder which is prepared in strict accordance with the principles herein outlined. There are very many testimonials to that effect and some of them may now be cited. The manager of a large farm writes:

"We have used Weleda Lime Powder for the past ten years on our farm in the care of cattle. During this period our herd showed no sign of calcium deficiency and its consequences: softening and brittleness of bones, etc. This is the more noteworthy since our entire feeding acreage consists of weathered sandstone soil which has no natural lime content. Moreover, lime was added only to the compost heaps in very small amounts as is usual in Bio-Dynamic practice. We feel confident that the Weleda Lime Powder was an important factor in maintaining the health and productiveness of our cattle."

This is an illustration of the fact that it is not the quantity but the activity that counts. This effectiveness is very evident in the raising of young animals. The owner of a large estate writes: "For two years all my colts, calves and young pigs have regularly received their Lime Powder and have become during this time unusually healthy, thrifty and strong-boned, whereas formerly, using the usual feed limes, I suffered continual losses and had animals with rickets.

This was especially clear in the case of calf-raising. Since feeding the Lime Powder I have not lost a single one of the 80-90 calves a year from the so-called stable sicknesses, although stable conditions, feeding and care remained as before. Likewise, the Lime Powder has become indispensable in raising colts. In one case a valuable colt had to be fed cow's milk from the third week on due to an udder condition of its mother. At first it showed rachitic symptoms, but as soon as it could eat it was given Lime Powder, with the result that the bones and joints were no longer swollen and became firm and strong. The weak backbone straightened out, the pendulous abdomen disappeared. Now this colt cannot be distinguished from those of its own age. This was a cure which every horse breeder knows is especially difficult. I would also like to stress the small dosage necessary (a small teaspoonful daily per head)."

The susceptibility of young animals to disease is always dependent on the weakness or health of the mother animals. We see from the following letter how the Lime Powder helps in maintaining maternal health:

"In accordance with your request, I will gladly give my experiences with the lime feed. I learned of the bio-dynamic agricultural method in 1932. The condition of my cow stable was miserable. Diarrhea and sterility had been in the herd for years. Each year I was forced to purchase new cows, fifty per cent of which never conceived and had to go to the butcher. Your remedies were recommended to me, especially your Weleda Lime, which I bought and gave to twenty cows for an entire winter. I fed twenty-five pounds in all and in the following year sickness disappeared and I have since had a healthy herd. I must say it seemed to work miraculously. All my profit had gone into expenses and cost of new cows. Since this time I have bought only three cows, and I hope in the future that even this will not be necessary."

In this letter direct savings were stressed and we will present another from which may be seen how to avoid indirect damage:

"Our need for Weleda Lime was evident in that formerly our stock suffered from 'licking disease' and fell off feed badly. Our colts also required it. The continuous chewing on all wooden installations not only caused damage to doors, mangers, stall-walls, etc., but the development of the animals' bones did not keep pace with their body growth. It is therefore extremely important for us breeders to feed Weleda Lime, because it most effectively remedies these unhealthy conditions and possesses the great advantage of not depriving the stomach of the juices necessary for digestion."

The most important element in dairying is not the milk production by itself, but the health of the herd. It is unfortunate but true, that such a homely truth must be expressed and even defended today. We cite now a further testimonial, which tells of the efficacy of the Lime Powder not only in cow and horse breeding, but especially in swine breeding.

"During my fifty years of farming I have never come across a feeding lime which came anywhere near to having the thorough effect of Weleda Lime, not only in the raising of cattle, but also for the general strengthening of cows and mares. I used your lime powder especially in the raising of calves, heifers, colts and shoats. Since I personally always have had the feeding of the animals under my control, any error on my part as to the effectiveness of the Lime

Powder is impossible. My herd of swine was sick and thin; the suckling pigs and shoats did poorly; sometimes only half of them could be raised, and they fattened badly. Every day there were examples of poor, unthrifty growth, coughing, scab formation. I experimented with the Lime Powder and found success, so that I proceeded to feed it regularly each day. In the case of the suckling pigs, an almost unbelievable difference was soon apparent as to color, liveliness, growth and appetite as compared with the period before feeding the Lime Powder. There is no longer any scab formation, the animals grow faster and above all assimilate their feed better."

How far this general improvement of health can extend through the use of Lime Powder may be seen from the following testimonial:

"My cows look exceptionally well. A cow three weeks ago gave birth to a ninety-pound calf and is now giving eighteen to nineteen quarts of milk daily. A colt I raised has developed superbly. I attribute the fact that my stable has remained clean of hoof and mouth disease, although the entire neighborhood was infected, not only to the Bio-Dynamic method of farming, but above all to the use of the lime powder. The danger of infection was especially great, since a farmer had no other way of getting from his infected barnyard to his sick cows on pasture than by passing through our barnyard night and morning."

Lime powder has also been successfully used in poultry raising, as may be seen from the following letter: "We have a flock of 1500 hens and raise our own chicks. For years we have used Weleda Lime for the laying hens as well as for the chicks. It is well known how badly the large poultry raisers suffer from lime deficiency diseases amongst their birds. This affects not only the health of the entire flock, but also influences the production and size of eggs. In addition to healthy green feeding and the necessary outdoor range, we regard Weleda Lime as indispensable for breeding and egg production."

This small selection from many letters demonstrates that the principles and point of view according to which the Lime Powder is prepared, which are also those which form the basis for the Bio-Dynamic method itself, have their justification. The continued use of Lime Powder should therefore be considered as one of the various Bio-Dynamic measures which, when applied all together, assure the health of the farm organism.