

ANIMAL HUSBANDRY

Calf Experiments Show Scanty Diet Possible

► CATTLEMEN COULD save several hundreds of millions of dollars this year if they would feed their calves minerals, proteins and vitamin A to bring the range diet to the minimum for good health and no loss of weight.

This is pointed up by experiments with sets of identical twin calves conducted at the Bureau of Animal Industry, Beltsville, Md. Beef calves forced to live on scanty rations for as long as six months can still produce high quality meat, U. S. Department of Agriculture scientists have discovered.

They catch up in poundage later, and the meat is at least equal in quality to that from animals that have been continuously well fed.

The great savings possible with supplementary feeding are particularly important this year, when the winter rations will be very low because of the drought.

One set of identical twin calves can give as accurate data for feeding experiments as 40 cows that are merely of the same breed and general type, Dr. Clarence F. Winchester, who conducted the feeding tests, told SCIENCE SERVICE.

In the tests, one twin of each of ten pairs was kept on rations that were slightly below the maintenance level, while the other twin was given full feed. Rations for both sets of twins included the basic level of proteins, minerals and carotene.

When the scantily fed calves were later put on full feed, they gained rapidly and economically, thus the recommendation to cattlemen to feed the necessary supplements to their cattle.

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SURGERY

Noses Get "New Look" With Tantalum Mesh

► A "NEW LOOK" for veterans with smashed noses due to wartime injuries is being developed by Dr. Joel Pressman of the University of California at Los Angeles School of Medicine.

Dr. Pressman uses tantalum mesh, a fine metallic screen, which can be molded and implanted within the nose to take the place of macerated nasal bone. In time fibrous tissue grows into the mesh, firmly fixing the metal implant as if it were intended to grow there, Dr. Pressman says.

In some cases a small sheet of tantalum is used rather than the mesh. The fibrous tissue tends to form a firm basis for the shape of the nose so that the metal sheet may later be removed.

The nasal passage is exceptionally tolerant of the metal, so that there are seldom complications arising from the implant, according to the findings of the U. C. L. A. surgeon.

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NEW WEAPON—This new gun for atomic missiles is being assembled at the Dravo Corporation's Pittsburgh plant. The cradle for the barrel is here being assembled to the carriage.

ENGINEERING

Efficient Heat Pumps

► FINDING A way to make heat pumps so efficient that they can compete favorably with other household heating systems is the bull's eye of a target now being shot at by power companies.

Discussion at the American Institute of Electrical Engineers' fall meeting in New Orleans indicated that heat pumps may go into more future houses if some way can be found to reduce their electric power consumption, to smooth over their demand for heavy amounts of power on cold days, and to store heat for several days.

Heat pumps work something like ordinary refrigerators. They pump heat out of wells, air or the ground, and release it in houses. In the summer the cycle can be reversed so that the houses are cooled.

Before heat pumps can compete favorably with coal-, gas- and oil-fired heating plants, their power requirements must be reduced, reported Philip Sporn, president of the American Gas and Electric Service Corp., and E. R. Ambrose, also of that company. An improved, more efficient mechanical design should help cut the power bill.

A large heat pump would have to work long hours to keep the house at the proper temperature on cold days, said J. H. Harlow and G. E. Klapper of the Philadelphia Electric Co. That would create a big load problem to power companies.

Heat storage tanks might help solve that

problem. The tanks would receive "surplus" heat on warmer days and would act as a heat reservoir on cold days.

The heat pump of such a system therefore could be a smaller unit running longer hours. Its power demand would be more even. That, in turn, might induce electric utilities to offer better power rates to heat pump users, speculated Constantine Barry, also of the Philadelphia Electric Co.

Research workers currently are searching for suitable and inexpensive materials for heat storage tanks. Glauber's salts, for instance, have been found to show some of the desired qualities.

Reporting on residential heat pump experiments in Philadelphia, A. H. Kidder and J. H. Neher, both of the Philadelphia Electric Co., pointed out that earth makes a good heat source. It also acts as a practical "sink" into which heat can be pumped from the house in the summer.

They also said that heat withdrawn from the ground during the winter is completely restored by the next winter. Thus, there is no need to worry about the earth's heat "playing out" in a few years, leaving the house chilly during a cold snap.

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Prairie dogs live in a "dog society" highly organized with respect to economic needs, social behavior and population control.