

Arizona vet lends hand in embryo transfer operation

WILLIAMSBURG — In a small, well-lit barn office, the two veterinarians set up their laboratory equipment - a microscope, several cell culture dishes and straws similar to those used for artificial insemination - and began their search.

One by one, three culture dishes filled with a mixture of saline solution and embryonic fluid were placed under the microscope. Using a probe, one veterinarian sifted through the liquid while the other stood by patiently waiting for the results. Then, slowly at first, the awaited news began to materialize.

First one, then two, three, four, five and six round objects appeared under the powerful microscope lens. They were perfectly shaped, one veterinarian exclaimed, even though all six objects showed a different stage of development.

What veterinarians Dr. Barry England and Dr. W.E. Merritt found was the result of a 5-day process involving hormone shots given to a strong pedigreed Holstein cow. The six objects were fertilized embryos, all part of an embryo transfer project.

For Dr. England, the process was nothing new or unusual. For Dr. Merritt, however, watching and participating in the embryo transfer fulfilled a desire to learn more of the technique on a firsthand basis.

A resident of Sierra Vista, Arizona, Dr. Merritt arrived in Pennsylvania May 20 with plans to participate in an embryo transfer project under the supervision of Dr. England, Fredericksburg, and partner Dr. Walter North, New Enterprise. Dr. Merritt had his wish fulfilled when the project took

place two days later.

But why would one travel from Arizona to Pennsylvania to see an embryo transfer operation?

According to Dr. Merritt, no one in Arizona is doing embryo transfer work. "We have done flushing (of the eggs) at Arizona State," Dr. Merritt said, "but we don't transfer the ova."

A 1938 graduate of Iowa State University, Dr. Merritt has had a longtime interest in reproductive physiology. He was, in fact, the first person to successfully artificially inseminate a cow in Iowa. "I have the first AI calf in that state," he said with a proud gleam in his eyes.

It has been in recent years, Dr. Merritt said, that his interests have turned to embryo transfer work. At 74 years of age, he has a plan to set up a million dollar show place with his two sons, and the use of embryo transfer would speed up the process of breeding a reputable herd of Angus cattle.

Forming under the name of Merritt Enterprises, the Angus show place will be located in Duncan, Oklahoma. It is here that son W.E. Merritt Jr., also a veterinarian, owns a ranch. Son James, a minister, lives near Durango, Colorado, where he plans to set up a Christian School and later get a ranch.

Because of his sons' other commitments, Dr. Merritt said he will be responsible for most of the work on the Angus ranch. James and W.E. Jr. will help coordinate the operation and provide financial backing, he said.

The Merritts plan to buy their foundation cattle from a couple of ranches in California. "We're looking for good progeny," Dr. Merritt said. "We want the highest



With a microscope, Dr. Barry England searches for fertilized eggs while Dr. W.E. Merritt, Sierra Vista, Ariz., awaits the results.

producers we can find."

They plan to buy a few cows to start with, Dr. Merritt explained, and breed two lines of Angus cattle. This is where embryo transfer becomes significant in their operation.

"We want to buy a couple of cows to start with," Dr. Merritt said, "and we'll use scrubs for embryo transplants."

Dr. Merritt said they plan to have a herd size of 25 head. Using embryo transfer will help them reach this number more quickly and will allow for earlier merchandizing of their animals.

"Five or six calves born per year are better than one," Dr. Merritt said, explaining his desire to learn how to perform embryo transfers.

Mastering the art of artificial insemination in a time when the process was making its way into the cattle industry, Dr. Merritt said that AI and embryo transfer are very similar, but added that "embryo transfer is a technical operation that doesn't work as easy as it sounds."

With this in mind, Dr. Merritt

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Nonsurgical embryo transfer equipment includes these syringes filled with a modified saline solution. Approximately 600 cc's of the fluid will be injected into each of the cow's uterine horns to aid in removing the eggs.



Gordon England clips the area where the embryo flushing equipment will rest against the cow.



Dr. W.E. Merritt, right, and Gordon England prepare the graduated cylinder where the flushed embryos will be placed.



Traveling from Arizona to Pennsylvania, Dr. W.E. Merritt, right, gets a firsthand look at the embryo transfer technique of Dr. Barry England during an operation performed at the Frederick England farm in Williamsburg, Blair County.