

GENETICS

Sex Organs Rejuvenate

Worn-out ovaries are rejuvenated when transplanted to young dogs. It is thought that this rejuvenation will also occur in transplantation of human ovaries.

► THE possibility that a woman could give birth to her grandmother's children was raised when a bewildered little mongrel gave birth this year to two sets of thoroughbred cocker spaniel puppies.

The cocker spaniel puppies were born after veterinarian Dr. Leon F. Whitney of Orange, Conn. had transplanted one ovary, the female sex gland, from a female cocker spaniel to Brownie and then bred the mongrel to a male cocker.

Brownie's strange motherhood was the culmination of a series of transplantations with other dogs in which Dr. Whitney discovered for the first time that worn-out ovaries from old dogs became rejuvenated when transplanted to young dogs.

Dr. Whitney worked with Dr. Harry S. N. Greene, professor of pathology at Yale University School of Medicine, New Haven, Conn. Dr. Greene declared that he saw no reason why ovaries could not be transplanted between human females. He added that, although it hasn't been tried yet, there is no reason why an old human ovary would not become rejuvenated when transplanted into a young woman.

Dr. Whitney's experiments have not yet gone on long enough to permit him to perform a second transplantation of the cocker's ovary now inside Brownie. However, he plans to make another transplantation when Brownie gets old. "If that succeeds," he says, "it will open up a whole new field of animal genetics."

Dr. Greene confirmed Dr. Whitney's work as completely valid and declared that it represented "a revolution."

Both were thinking of the possibilities in the cattle and livestock industries. Scientists have shown that fertilized eggs can be transplanted from one cow to another, opening the way for pedigreed, pure-blooded calves to be born of scrub-foster mothers. But if the ovaries of cows can be transplanted, and if they are rejuvenated as those of Dr. Whitney's dogs have been, it would be possible for a champion pedigreed cow to have calves years after she herself is dead. Dr. Whitney says he'll try transplantation in cattle in 1950.

Neither Dr. Whitney nor Dr. Greene have thought much about the possibilities of the same operation applied to human females. But cancer of the ovary occurs in 12 out of every 100,000 women. And, when it is first discovered, in about 50% of the cases both ovaries are affected. The possibility exists that where both ovaries have to be removed, a woman might still be able to have children by having another woman's

ovaries transplanted into her. But, the children would be the other woman's.

The ovary transplanting operation on dogs is done by shifting the ovaries through a slit in the capsule that encloses each. At first Dr. Whitney used fine catgut to sew the cuts, but since this caused adhesions, he changed to silk sutures. He also found it necessary to perform the operation when the recipient dog was in heat. Many experiments in other parts of the sexual cycle failed.

Evidence of rejuvenation of the transplanted ovaries came this month from Dr. Greene who examined sections of them under the microscope. He reported that the ovaries, after they had been transplanted, showed "all the signs of a young gland with many follicles." Follicles are the little sacs in the ovary which contain the egg cells. An old dog's ovaries rarely shows signs of these.

Brownie's two litters were composed of ten dogs each. Because she retained one of her own ovaries, five dogs of each litter

were mongrels. But the other five were pure cocker. Said Dr. Whitney, "There was no question of either their maternity or their paternity. Both were cocker."

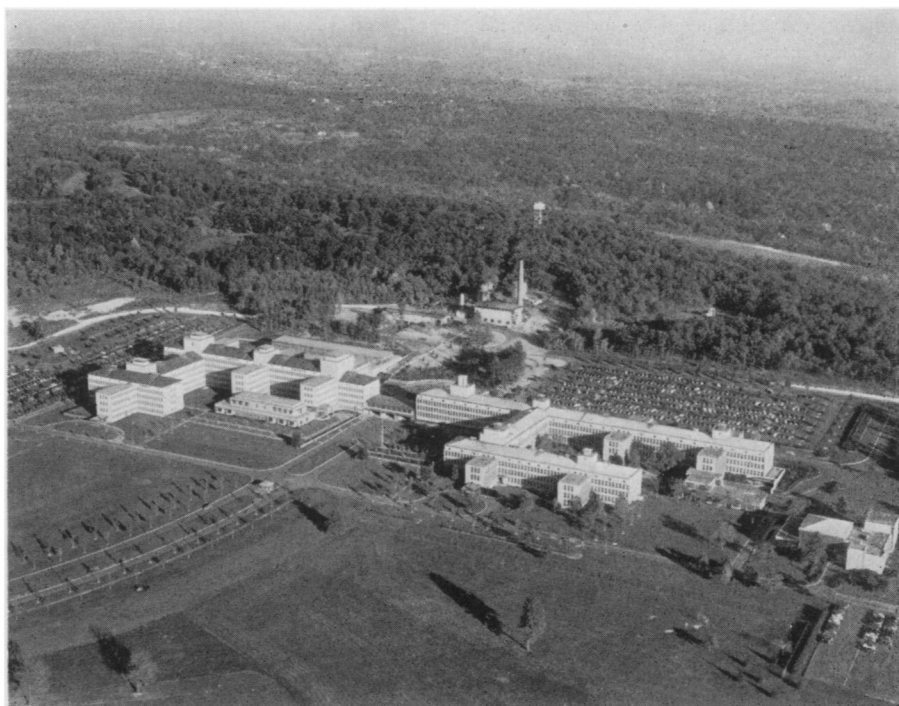
Brownie is not the only dog to have another dog's puppies. The first was a black-and-white Dalmatian named Imogene. Dr. Whitney replaced her ovaries with those of an 18-year-old cocker. At that age, the cocker was far beyond the time she could produce a litter.

Imogene came into heat on the cocker's timetable rather than her own. Then, because Dr. Whitney couldn't find a male cocker large enough, he bred the Dalmatian to an English setter. Two puppies were born. Neither was any relation to a Dalmatian.

Last month, Dr. Whitney received a letter from a veterinarian in Denmark, Anker Scheel Thomsen, reporting successful operations on setters, a German pointer and an airdale, an Alsatian wolfhound and a boxer, and a 12-year-old mongrel with a two-year-old fox-terrier. Said Dr. Thomsen, the Alsatian had two boxer puppies, "who are still alive and well."

Meanwhile Brownie's thoroughbred cocker spaniel puppies are not recognized by the American Kennel Club under present rules. Dr. Whitney plans to obtain a really famous dog, transfer her sexual glands to a dog of a different breed and then put the offspring up to dogdom's social register as a test case.

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TELEPHONE RESEARCH HOME—The latest contributions of science and technology are applied to Bell System communications in the above laboratories. The country location about 25 miles from New York was selected to escape the noise, dust and vibration and electrical interference encountered in a metropolitan center. The acoustics building, containing the famous "dead room" is at the extreme lower right.