

ALBINISM IN THE CORN SNAKE

(by H. Bernard Bechtel)

We were able to demonstrate an autosomal recessive mode of inheritance for albinism in the corn snake in 1959. Corn snakes are medium-sized nonpoisonous snake found in the southern United States from southern New Jersey south through Florida and west into Louisiana. Adults average 76-122 cm. They are typically patterned dorsally with longitudinally arranged black-bordered red or brownish-orange blotches against a background color that ranges from orange to gray. Small similar blotches alternate with the dorsal blotches, and a third series, alternating with the lateral series, involves the ends of ventrals and the adjacent two or three scale rows. The underside is white conspicuously marked with black squares and rectangles. The quantity and quality of red, orange, and yellow pigments vary considerably in individual snakes. These snakes are thought to be called corn snakes because their belly markings resemble the checkered patterns of kernels on Indian corn. At any rate, they are handsome snakes by any criteria.

They spend much of their time underground prowling through rodent burrows, and may be quite abundant even in residential areas without being noticed.

They feed on small rodents, which are killed by constriction.

In addition to being handsome, corn snakes adapt well to captivity. They become docile, and generally feed well if offered mice, their favorite food.

Our colony was established in 1952 when I purchased an adult female specimen from Ross Allen, the founder of the Silver Springs Reptile Institute in Ocala, Florida.

Ross discovered the spring before it was surrounded by urban development, and made it a tourist attraction with his reptile display. The collection contained a large number of native reptiles including huge alligators and many eastern diamondback rattlesnakes. Silver Springs was a magnet for every amateur herpetologist including me, and Ross was also one of the few sources for exotic snakes. Prior to World War II an exotic snake was any snake other than those occurring near home. The only other source was the local fruit wholesaler, where an occasional boa (*Boa constrictor*) stowed away in a banana shipment from Central America.

The corn snake was gravid when we received her, and by 1959 we had developed a colony of three generations. That year we obtained a male albino corn snake on breeding loan through the kindness of Max Hensley, a herpetologist at Michigan State University. Max had solicited museums, zoos, and private collections to determine the occurrence and relative frequency of albinism in North American reptiles and amphibians. Among his responses he located a live male albino corn snake. It had been collected in 1953 in Stanly County, North Carolina, near Alberarle, and was maintained alive at the Charlotte Children's Museum.

The snake was mated with three wild types in 1959, resulting in 46 eggs, which all hatched. All of the hatchlings were pigmented normally, and ten were retained for future breeding. By 1961 the F1's though still small, were sexually mature, and a male F1 was crossbred with three

sibling F1's. The three deposited a total of 31 eggs, some of them small and infertile. The first clutch began hatching the morning of August 31.

Six normally colored snakes had poked their heads out of the eggs when I left for the office that morning. Bette asked, "Are you sure we will get albinos?" I reassured her.

Later in the morning my secretary interrupted my work to tell me that my wife was on the phone with an important message. A small pink snout was protruding from one of the eggs. Of the 24 eggs from the three clutches that either hatched or contained identifiable embryos, seven were albino and 17 were wild types, slightly more than the one out of four predicted for a Mendelian recessive.

Albino corn snakes differ from wild types only in their lack of melanin. They are patterned normally with pink or red blotches against a yellowish or whitish background, but individual variation in the quantity and quality of these colors is considerable. An occasional specimen is actually patterned in two shades of red. The black borders of the blotches are replaced by white, and the ventre lacks the bold black rectangles. Newly hatched specimens have little or no yellow in the background color, but the colors become rich as the snakes mature.

These findings were reconfirmed by Groves in 1965, using F1 snakes (heterozygous for albinism) that we had given him in 1959. After 1959, albino corn snakes were acquired by others who in turn bred them to produce pure albino strains. The photograph of our first clutch of eggs to contain albino depicts, in one-time curiosity has become common, and it is believed that nearly all of the thousands in existence today are descended from the lone albino snake collected in North Carolina in 1953.