

THE FORKED TONGUE

THE MONTHLY NEWSLETTER OF THE GREATER CINCINNATI HERPETOLOGICAL SOCIETY

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The Editor's Den

This month's *Forked Tongue* includes an article on having fun with corn snake genetics.

Calendar of Events

August 1, 2007 – Monthly Meeting featuring Dan Meakin, DVM, speaking on snake anatomy.

September 5, 2007-Monthly Meeting featuring Marc Frevola speaking on “Using herps for Learning in the Classroom.”

October 3, 2007- Monthly Meeting featuring Jeff Davis speaking on the Eastern Massasauga, an Ohio Endangered Species.

Fun with Corns

By Al Winstel

For several years, I have been acquiring young corn snakes in hopes of future breedings. Along the way I was able to do some crosses as some of the animals grew up. For the first time this year I was able to breed some of my earlier babies to see what I would get. The adults consisted of a male that was the result of crossing an albino (amelanistic) animal with a ghost corn (anerythristic (no red) and hypomelanistic (black replaced by gray)) and a female that was the offspring of a ghost corn and a “normal” male that had a lot of red, almost like a bloodred corn.

I attempted to use a Punnett Square (a method for predicting the result of various genetic crosses) to decide what I might get. However, there was no guarantee that the original animals I used had only the advertised characteristics. Anything might be hidden in their genes!

Once the breeders were over wintered in the high 60's and the female finally produced eggs (13 of them after I discarded a few that were infertile), I began to incubate the eggs and wait.

The incubation area varied from the high 70's to the mid 80's in temperature. The eggs finally began to hatch at 66 days after they were laid. All 13 hatched! It was really neat to watch the incubation container as one baby after another poked its tiny head through the slit in the egg. Of course watching eggs hatch is like trying to watch water boil. It seems to take less time if you don't watch. What color would the next little head poking out of the egg be? Hatching took 3 or 4 days.

Well, of course the first one looked like a normal baby corn. However, along with 5 normally colored baby corns, there were 5 hypo babies (little black, white ground color, and very red blotches), 2 anerythristic babies (think black ratsnake baby only with spear point pattern on head), and 1 ghost baby. My Punnett Square calculations had predicted 7 normal, 3 hypo, 1 ghost, and 2 anerythristic, so I guess I came out ahead on the hypos. The calculations only give you a general idea of what you will get, for the same reason that if you flip a coin an even number of times, you would expect 50% heads and 50% tails, but that isn't always what you get.

If you would like to try to predict your offspring from a cross between corns with different colors, here's how you would start. For example, if we have an albino corn, it has 2 genes for albino, or lack of black, one on each of the two paired chromosomes that hold this gene. Once the chromosomes separate while the female snake's ova (unfertilized eggs) are being formed, each one holds one gene for albino (“a”). Likewise if the male is normal looking, its genes in that area probably both allow for black pigment manufacture. Once its sperm are made, they each hold a gene for the presence of black (“A”).

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Therefore a simple Punnett square would be:

	female
male	a*
A**	Aa

*=female's sex cell

**=male's sex cell

The offspring would all be split for albinism (Aa).

In the case of this gene which is termed recessive, it takes 2 to make the character show, so all babies would appear black in the normal places and look "normal."

However, if we then breed two of these young together (forget possible problems with inbreeding), each animal can now have 2 possible types of sex cells. The female would have both a and A, as would the male. The new Punnett looks like:

	female	
male	A	a
A	AA	Aa
a	Aa	aa

So for every 4 young, we would expect 2 Aa (look normal), 1 AA (look normal), and 1 aa (looks albino). The total clutch would give 3 normal looking and 1 albino. You could not tell the AA from the Aa without your handy electron microscope or chemistry lab. Since 2 out of 3 normal looking are Aa or "hets", each of the normals would have a 2/3 chance (66%) of being "het." That's why you sometime see animals for sale marked as something like "66% probable hets" and you might pay less for one of these than for a known het (think babies from first cross above) if you wanted to use one to breed albinos.

As each adult breeder gets more genetic color characteristics, its number of possible combinations of these in its sex cells increases, making a bigger Punnett Square. The one I used for my corn cross had 32 different offspring squares, rather than the 4 above, or the single square in the first example. Once you can do the

small Punnetts, bigger ones just require more time to figure out all the possible combinations of genes in the breeders' sex cells.

Although this may not seem important if you are just breeding 2 normal cornsnakes together, corns have been crossbred so much, that your snakes may be het for many characteristics that you can't observe (like the first mating above where all the young were hets but looked normal).

You may breed two normals and not get all normal babies, but you can then sometimes figure backwards to see what the adults were het for.

A similar system works with many of the color mutations of Cal kings, ball pythons, etc. If anyone has questions about the Punnett Squares, you can e-mail me at radiata_5@fuse.net. The picture below illustrates the great color difference but you can't really tell given it's a black and white photo. Look for the color version on our website!



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Classified Advertising Policy

GCHS Members may run a free classified ad of 7 lines or less at no charge for an unlimited time; however, the ad will be canceled after one month unless the editor is informed to continue it. Please include scientific names for the animals with your ad as well as your phone number and area code.

Ads of up to 7 lines for non-member are \$2 per issue; ad charges for items more than 7 lines long are as follows:

Business card size	\$3 per issue
1/4 page	\$6 per issue
2 page	\$10 per issue
Full page	\$20 per issue

The GCHS is not liable for the quality of the merchandise advertised. The Society also reserves the right to refuse any ad considered inappropriate.

Requirements for Submitting Articles to the Forked Tongue

Articles can be submitted via CD or hard copy to Editor, GCHS 11470 Gatch Hill Road, Aurora, IN 47001.

Articles may be e-mailed to Grady Calhoun at gradycalhoun@earthlink.net.

Black and white photographs can be included with articles. Photo submissions should include your name, phone number, and description of photo on the back. Photos can be returned.

All time dependent submissions must be in the editor's possession no later than the meeting previous to the publication.

Classifieds

Discount: A 10% discount is offered to all card-carrying members of the GCHS at *All Creatures Animal Hospital*. Dr. Dan Meakin, All Creatures, 1894 Ohio Pike, Amelia, OH 45102, 513-797-7387.

Discount: A 10% discount is offered to all card carrying members of the GCHS at Dr. Dahlhausen's Veterinary Clinic, 5989 Meijer Dr., Suite 2, Milford, Ohio 513-576-0131

(Number to left of decimal indicates males; number to right of decimal indicates females; number to right of second decimal indicates number of unknown sex. For example, 3.2.1=3 males, 2 females, and 1 unsexed specimen)

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Currently Held Positions

President	Grady Calhoun	(812) 926-1206	Vice President	Dean Alessandrini	(513) 347-0099
		(513) 564-6041	Editor	Grady Calhoun	(812) 926-1206
Treasurer	Peggy Fille	(513) 528-4452			(513) 564-6041
Sergeant-at-Arms	Bruce Fille	(513) 528-4452	Education Committee Chairman		
Advisor	Vacant		Peggy Fille		(513) 528-4452
Secretary	Kyle Becker	(513) 831-4898			

About the GCHS

The Greater Cincinnati Herpetological Society holds monthly meetings which typically consist of a short business section, a refreshment intermission, and a program related to herpetology. Both members and nonmembers are invited to attend. Membership is open to anyone with an interest in reptiles and amphibians. New members may sign up by mail or at the monthly meetings. Members receive monthly issues of *The Forked Tongue* and free classified advertising. Annual dues should be directed to the secretary at the society's mailing address, according to the rates below:

Student	\$10.00	Corresponding	
	\$10.00		
Individual	\$15.00	Sustaining	\$25.00
Family	\$20.00	Institutional	\$30.00
Contributing	\$50.00		

Why Be a Member?

Receive monthly issues of *The Forked Tongue*

§Meet individuals knowledgeable about herpetoculture

§Have access to captive-bred herps and feeder animals

§Participate in society-sponsored field trips, and outings.

§Receive a 10 percent discount on herp-related items and services when you show a valid membership card at the following establishments:

Delhi Pet Center (513) 451-4015

Kentucky Reptile Zoo (606) 663-9160

Harrison Pet Center (513) 367-1115

All Creatures Animal Hospital (513) 797-7387

Dr. Dahlhausen's Veterinary Clinic (513) 576-0131.

P.O. Box 14783
Cincinnati, OH 45250

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