Breeder or Owner	Full Name of Cat, DOB	Sire	Dam	HCM Diagnosed by:	Symptoms of HCM:	Sudden Death, No Symptoms

Please add approximate number of kittens bred per year, and over the last 10 years, to give an approximate sample size, and therefore an idea of the incidence of HCM within our sample. This can then be forwarded to all breeders without any names being given.

Per year	Last 10 yrs

Please tick the box below if you are happy for this information to be made public, or shared with other breeders.

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Confidentiality is guaranteed unless permission to share information is granted by the owner or breeder.

Notes on filling in this table;
Owner/breeder- person who is writing, and can give me this information. Please indicate whether you are the breeder or the owner, to avoid duplication in the case of anonymous submission.
Full name of cat and Date Of Birth, to identify each case.
Sire/Dam to trace pedigree. If these do not appear on Pawpeds or Amanda's pedigree list, then a pedigree that goes back to cats that do, will allow a pedigree trace.
HCM diagnosed by; only fill in if the individual was confirmed as HCM by echocardiogram or autopsy or post mortem examination. Please give any details.
Symptoms of HCM; please list any symptoms of HCM shown by the individual, eg shortness of breath, paralysis etc.
Sudden Death, no symptoms; please fill in for any sudden deaths at a young age, with no symptoms or diagnosis of HCM.

It will probably be easier in most cases to write with what information you might have and are willing to share. This can be as little as 'bred *n* cats, had *n* confirmed cases of HCM, *n* cases with some symptoms and *n* young deaths from unknown causes. This can be sent anonymously to jdparfitt@hotmail.com or posted to J Parfitt, 6 Saxifrage Square, Oxford OX4 7WR, UK, but the more information I receive (confidentially if desired) the better the results will be.

About the HCM data collection project:

I have studied small population genetics both academically (at Oxford University) and professionally, and have worked in conservation and breeding for the last 23 years, in everything from farm livestock to elephants and lions, although I have only recently started breeding cats.

It would seem that most breeders are keen to see a genetic test specifically for Russian Blues (although we are likely to see a whole range of tests for various HCM genes, some of which might be applicable to certain lines of Russians). However, this project cannot apply for funding, without first establishing the prevalence and inheritance of HCM in Russian Blues.

The first step is to establish how many cats have, or may have, died of or exhibited HCM. Please bear in mind that HCM is the most common cause of death in indoor cats (Eldredge et al, Cat Owner's Home Veterinary Handbook, 3rd edition), in non-pedigree as well as pedigree cats, so if a cat has died young, particularly between the age of 1 and 8, and there is no other obvious cause, then HCM should be considered. If their death was preceded by common signs of HCM (heart murmur or gallop, laboured breathing, paralysis of tail or hind legs), then HCM should be assumed to be the cause of death unless proved otherwise. Once these data have been correlated, we will at least know how common the condition might be.

The next stage is to look for familial inheritance. Robinson's Genetics views feline HCM as a dominant allele, with 100% penetrance; ie a kitten cannot develop the disease unless one of its parents does so. However, this is presumably based on the Maine Coon and Ragdoll data, which may be inappropriate for our breed. It would seem that, in humans at least, all identified mutations act as dominants (ie only one copy can cause symptoms), but penetrance may not be 100% (ie a `carrier' may develop the disease late in life, or maybe not at all; possibly through the influence of other epistatic genes (or polygenes), possibly through environmental or health factors, such as blood pressure, stress, general fitness etc).

Research into genetic tests can only begin once familial HCM has been established and identified, and there are several breeds with established familial dominant HCM currently undergoing research, and without results so far, so we will be far down the priority list unless we do the background work ourselves.

If we can establish familial groups, then we can test likely carriers for the two known genes for HCM, the Maine Coon and Ragdoll mutations of the MYBPC3 locus, as they might carry one of these genes. These can apparently be EDTA bloods, or a buccal swab, and, to give some idea of cost, Langford Veterinary Services (University of Bristol) currently charge £24 per sample. Should these prove negative (which is likely), then we can at least supply samples to a laboratory for future research, should the funding become available.

HCM would seem to be present in most if not all breeds, and does not need to be daunting. However, if there were a dominant HCM gene in the Russian Blue, and a cat carrying that gene were to be used extensively, it could ruin the breed's reputation as a healthy breed (one of the main reasons that we personally chose to breed Russians), and decimate our breeding lines. Therefore identifying the prevalence and inheritance of

known cases seems essential to maintain a healthy population, and allows us to track any possible carriers to limit future cases. This is in the interest of the breed, us breeders, and all owners.

I would be very happy to collate information on this subject. Ideally I would like to know the pedigree name of each case (and whether they appear [correctly] on Amanda Bright's pedigree database or Pawpeds, to check for familial inheritance), as well as permission to share that information. However, I will respect anyone's wish for their data not to be publicised, and will also accept entirely anonymous information- simply tell me how many confirmed and possible cases you have personally bred or owned (you need not disclose your name, just post the information to me anonymously), as well as an estimate of your annual kitten numbers, and the number of kittens over the last ten years. This is to establish the size of our sample population, and so give us an approximate figure for the percentage occurrence of HCM.

These can be sent to my personal e-mail address, jdparfitt@hotmail.com or can be posted to me at 6 Saxifrage Square, Oxford, OX4 7WR, UK. I will treat all such information in the strictest of confidence, and will not try to trace any breeders- although I might make an appeal for people to come forward later if there transpires to be a problem! I also need to hear from people who have had no cases, so that I can estimate percentage occurrence. Anecdotal evidence can be added for a fuller picture.

In the meantime, should a cat aged between 1 and 10 start suffering lethargy, troubled breathing, galloping heartbeat or paralysis of the hind legs or tail, veterinary advice should be sought, and, if there is any doubt at all, DNA samples should be taken (EDTA blood, 5ml) and an ECG arranged. This way, if the worst happens, the information produced may at least help reduce this happening in the future.

I hope that we can move forward together towards a scientific evaluation of the situation.

Jon Parfitt
Wychwood Russian Blue Cats