



The Hedgehog Welfare Society

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To protect the well-being of pet hedgehogs through rescue, research and education of the people who care for them.

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Teasel hedgehogs dressed in tweeds and country calico. The adult hedgehogs are about four inches tall. Photograph by Mary Rush. Used with permission.

Assuring a Safe Air Supply for Your Hedgehog by Jim Woodring**

**Assistant Companion to Dudley, Hoover, Payton, Buckminster, Wizard, Baxter, Kenmore and Gromit

Introduction

We all know that hedgehogs must have water, food and air. Of these, assuring an adequate air supply can be the least obvious, especially when different sizes and styles of containers are used for housing and transport. The process of breathing consumes oxygen and gives off carbon dioxide in quantities that we may not realize so the provision of adequate ventilation can be a matter of guesswork. And it's not just true for animals- people have a long history of incidents involving inadequate air supply. On March 12, 2010 the Chicago Tribune reported 13 suffocation deaths in babies due to a kind of sling carrier.

Back to the point, there have been recent reports of hedgehog deaths during transport by vehicle and during shipment by commercial aircraft. Hearing speculation about the cause but lacking facts, some testing seemed to be

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called for. Since my work involves monitoring workplaces for toxic materials, professional grade instruments were available for some "off hours" testing. Given that speculation on the cause of the deaths included overheating from heater packs used in the cages and oxygen depletion from the animals' breath, several kinds of tests were needed to measure contaminants from the heaters, the actual air exchange in the cages and a literature search of the effects of the animals breathing.

Heater tests

A series of tests were run with heaters inside 3 styles of cage with and without blanket covers. The heater packs are similar to those sold as hand warmers. The heat is produced primarily by the oxidation of powdered iron to iron oxide (rust), although they also contain some powdered charcoal, salt and water. Instruments were placed inside the cages to measure and record concentrations of oxygen, carbon monoxide, carbon dioxide, relative humidity and temperature. See below a photo of a typical test set up.



Note 6 heater packs, MSA Passport 5 Star instrument to monitor and log concentration of oxygen and carbon monoxide. The black cylinder sensor connects to the TSI IAQ Trak instrument outside the case; it logs concentrations of carbon dioxide, temperature and relative humidity. Cages were tested with and without a blanket cover. Cages modified with added ventilation openings were also tested by the same methods.

Results

The Sterilite cages tested had been used to transport two animals in the small size unit with two heater packs. The large cages had contained 5 animals and as many as 6 heater packs.

The heaters used were typical of chemical hand warmers and were advertised for shipping of small animals. They contain finely powdered iron, water, activated charcoal, vermiculite, wood powder and salt. The heat is produced mainly by the iron consuming oxygen from the air to produce iron oxide rust. The other ingredients

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The 2011 Hedgehog Welfare Society Wheel-A-Thon

By Linda Woodring



Wheel-A-Thon participant Grommit Woodring



Wheel-a-Thon commemorative PC figurine
made by Cyndy Bennett

Another Hedgehog Day has come and gone, and once again our little guys and gals ran their hearts out to raise money for hedgehogs that aren't as lucky as they are. I'm happy to say that this year's Wheel-a-Thon was the best ever, raising over \$3100 to help hedgehogs in need. Due to the poor economy, we were never expecting this good a year which makes it even more of a feather in the caps of those who participated.

Bringing in the most money this year was Nancy Denny with a total of \$781. Nancy will be receiving a special Wheel-a-Thon commemorative PC figurine donated by none other than Cyndy Bennett. Those of you who have been lucky enough to get one of Cyndy's works of art know how special they are.

I would like to thank all of the participants: Ashley Akenson, Elaine Becker, Cyndy Bennett, Margaret Campbell, Tammy Christopher, Sheila Dempsey, Nancy Denny, Laura Dunklee, Donnasue Graesser, Lisa Ann Kueter, Autumn Ouellette, Kate Scher, Anna Sikorski, Bonnie Stubbins, Deb Weaver, Linda Woodring and Dawn Wrobel.

A special thanks goes to our mystery sponsors, Kim Groves, Florence King, Sasha Vincent and Debra Yeung, for making things just a little more interesting.

And it's nice to have some prizes to give out to the participants, so I would like to thank the generous people who donated prizes for the event: Cyndy Bennett, Elaine Becker, Nancy Denny, Deneen Foelker, Kathleen Knudsen, Margaret Myhre, Deb Weaver, Linda Woodring and Dawn Wrobel. If you haven't yet received a prize in the mail, you will very shortly.

Thanks again to everyone for making this year special! Mealies for all!!!!



<http://www.leehansen.com/>

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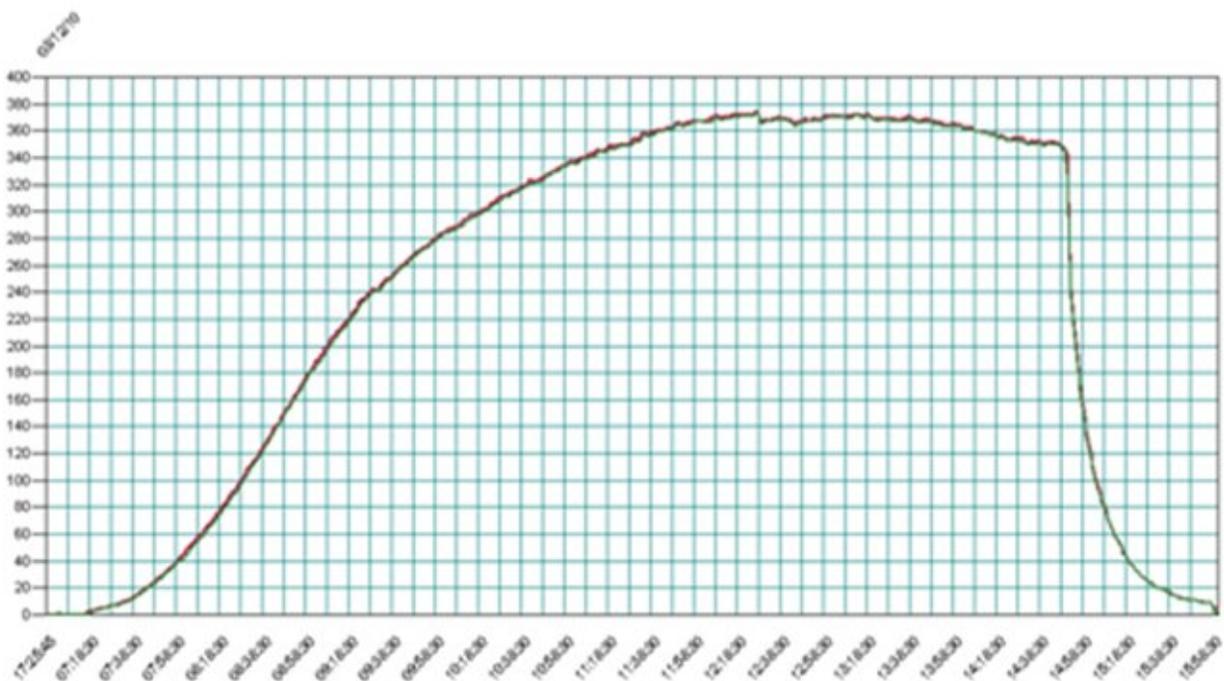
provide separation for the iron and reportedly some catalytic effect on the reaction. Although iron oxide is the main product, the tests showed that some carbon monoxide is also produced, somewhat surprising given the low temperatures reached by the heaters (about 115 F maximum surface temperature).

The heater tests showed only slight reduction in oxygen and no significant carbon dioxide accumulation—not surprising as the heat is mostly from rusting of iron. However, in some tests with multiple heaters dangerous levels of carbon monoxide were found—up to 370 parts per million (ppm).

Carbon monoxide from one of the tests is shown below:

Carbon Monoxide

#15 Small cage, cover, 2 heaters



But that isn't the end of the story. The breathing of animals in a cage consumes oxygen and releases carbon dioxide—in addition to that from the heaters. Without testing of live animals, this can be calculated if two things are known—the amounts produced by metabolism and the actual air exchange found in the cages.

Cage air exchange tests

Knowing the production rate of contaminants from breath and heaters and the ventilation rate of a cage (the air change rate), the concentrations over time of oxygen and contaminants can be calculated using equations used to model indoor air quality problems. Air exchange rates were determined by mixing a low concentration of carbon monoxide as a "tracer gas" into a cage and then monitoring the minute by minute decrease due to the ventilation. The resulting concentration "decay curve" was used to calculate the ventilation in terms of air changes per hour.

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Results are summarized below.

Test #	Cage brand	Cage size	Cover	Air change per hour
3	Sterilite	Small 18 qt	blanket	0.89
4	Sterilite	Small 18 qt	no blanket	0.95
7	Sterilite	Small 18 qt	open top	231
9	Pet Voyageur 100		blanket	7.59
10	Pet Voyageur 100		no blanket	204
18	Sterilite modified	56 qt	no blanket	197
20	Sterilite modified	56 qt	blanket	140
21	Sterilite modified	18 qt	no blanket	34
22	Sterilite modified	18 qt	blanket	16
25	Sterilite	56 qt	no blanket	1.05
26	Sterilite	56 qt	blanket	0.61

HEDGEHOG METABOLISM

Like other mammals, hedgehogs can be thought of as little engines which take in fuel (food) and oxygen to produce energy and body structures. The primary gaseous waste product is carbon dioxide which is nearly the same volume as oxygen consumed but varies somewhat on the food intake of protein fats and carbohydrates. This is expressed as the Respiratory Quotient, RQ. In searching some references and consulting several exotic animal vets, no specific data was found for hedgehogs. However they indicated that using data from other mammals such as rats was a reasonable estimate.

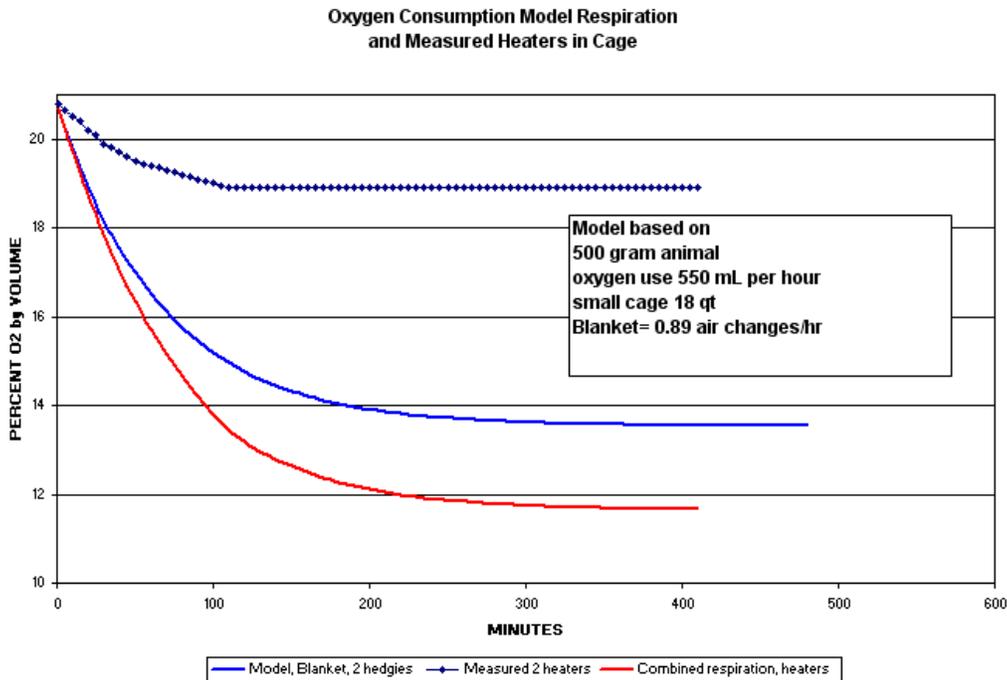
For this study it was estimated that a 500 gram hedgehog would consume 550 milliliters of oxygen per hour and produce a RQ of 0.85, giving a carbon dioxide (CO₂) production of 468 milliliters per hour (14 milligrams per minute).

BUILDING THE MODELS

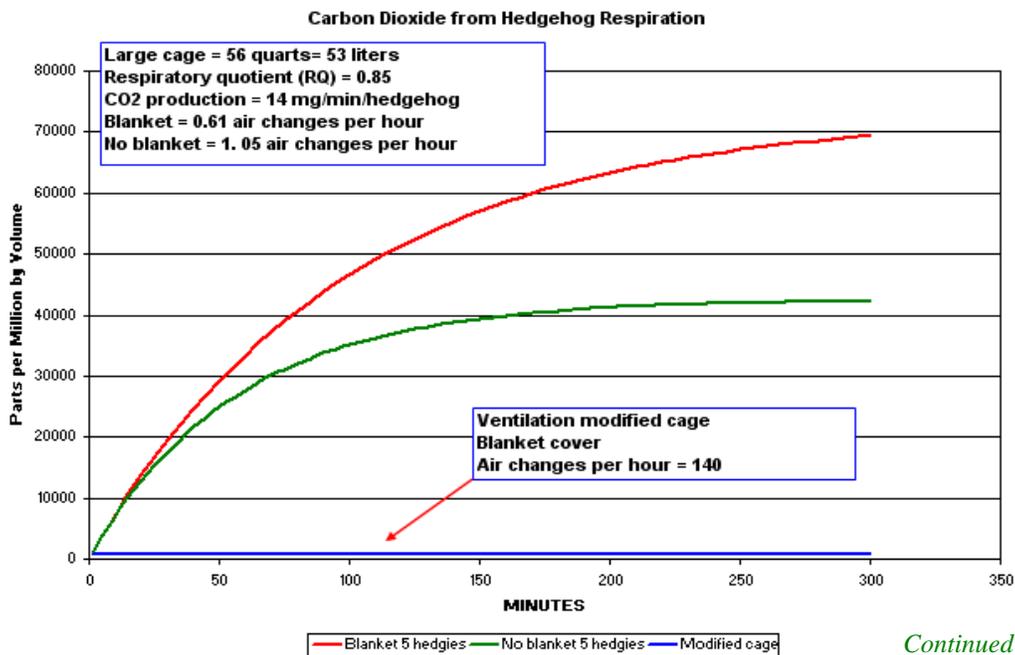
Next, the actual measurement data from the heaters in the cage was combined to calculate the effect of both heater use and hedgehog respiration. Note on the graph below of oxygen consumption that the 2 heaters in the small cage lowers the level to a little below 19%, a far smaller effect than the breathing of 2 hedgehogs. Combined, a level below 12% is calculated, a dangerously low concentration.

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The heaters produced little carbon dioxide over natural background so just that produced by hedgehog respiration was modeled. The graph below shows results for 5 hedgehogs in the large cage. Note the flat bottom line representing the level expected using the cage modified to add much more ventilation area. It stays close to background concentration, while the cages with small vent holes show carbon dioxide reaching above 70,000 parts per million (7%), a dangerous level.



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DISCUSSION---WHAT DOES IT MEAN?

The oxygen consumption and carbon dioxide produced by hedgehog metabolism and to a lesser extent the use of heaters in cages can result in low oxygen concentrations and high and potentially lethal combinations of carbon dioxide and in some cases carbon monoxide. The typical effects of these conditions on humans are shown below.

POTENTIAL EFFECTS OF OXYGEN-DEFICIENT ATMOSPHERES

Oxygen Content (% by Volume)	Effects and Symptoms (At Atmospheric Pressure)
19.5%	Minimum permissible oxygen level.
15-19%	Decreased ability to work strenuously. May impair coordination and may induce early symptoms in persons with coronary, pulmonary, or circulatory problems.
12-14%	Respiration increases in exertion, pulse up, impaired coordination, perception, judgement.
10-12%	Respiration further increases in rate and depth, poor judgement, lips blue.
8-10%	Mental failure, fainting, unconsciousness, ashen face, blueness of lips, nausea, and vomiting.
6-8%	8 minutes, 100% fatal; 6 minutes, 50% fatal; 4-5 minutes, recovery with treatment.
4-6%	Coma in 40 seconds, convulsions, respiration ceases, death. These values are approximate and vary as to the individual's state of health and his physical activities.

Carbon Dioxide exposure effects (1%= 10,000 parts per million in air)

1%	Comfortable; slight increase in rate and depth of respiration
2%	Respiration increased, headache after several hours
3%	Respiration X2; panting after exertion, slight headache
4%	respiration X3; throbbing headache, face flushed, nausea, sweating
5%	General arousal; respiration more than X3; "Off effects" on removal-headache, nausea, vomiting
6%	respiration X6; can be tolerated for several hours
7-10%	Mental deterioration; Intolerable for more than a few minutes, progressive dyspnoea, violent respiratory distress
10-15%	Intolerable; panting and exhaustion; unconsciousness within minutes, convulsions
25-30%	Unconscious after 8-12 breaths; convulsions



<http://www.arthursclipart.org/>

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Exercise is as important to our hedgehogs as it is to us. One of the best ways to help your hedgehog stay fit and trim is to provide an exercise wheel. The wheels featured in this article are among the most popular models for hedgehogs and their owners.

12" Super Pet Large Silent Spinner Wheel \$22.99 @ Doctors Foster and Smith



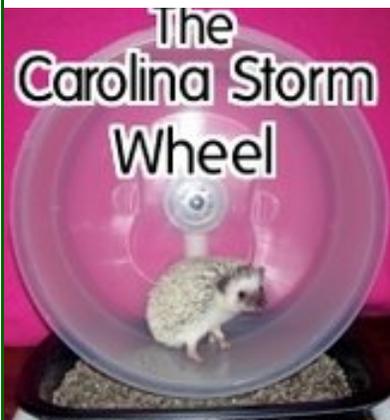
Super Pet's twelve inch Silent Spinner Wheel features one of a kind ball bearing technology a design that promises a "whisper quiet" workout. All the reviews I found about this wheel agreed that it runs quietly. However, it is less sturdy than other wheels and wears out fairly quickly. There were also concerns that the wheel might turn over while in use.

Lao Che of New York had this to say:

We've gone on our second 12" Silent Spinner Wheel in less than a year. It is fairly silent at first, then gets slowly louder and louder. It's not deafening by any means, nor is it of any real bother. It just isn't the "silent spinner" that is advertised. We use it for our hedgehog (she weighs less than 260 grams) -- and she loves it. My real concern is that the yellow knob on the inside of the wheel continues to loosen and pop off, causing the wheel to slip away from the mount.

I'm not sure if it is a design flaw or we just get defective merchandise? It is properly mounted to the side of the cage according to instructions and not obstructed in anyway. Luckily, our hedge hasn't been hurt by this problem.¹

The Carolina Storm Wheel \$30 from Carolina Storm Hedgehogs in Linwood, North Carolina



Used with permission.

This custom made wheel, sold by loyal HWS member Larry Thomason, comes with a litter pan that fits nicely underneath. It's quiet and easy to clean. This wheel can be tilted up or down for preferred pitch/angle. It has a hedgehog-approved smooth, solid running surface. Priced at \$30 plus shipping. Order information: www.carolinastormhedgehogs.com

- The wheel has six height adjustments.
- With the wheel attached at the highest position it stands 15 and 1/2 inches tall
- With the wheel attached to the lowest available position the wheel stands 13 and 3/4 inches tall.
- The wheel attached to the stand is around 14 1/2 inches wide and 11 inches long

Twelve inch Wobust Wodent Wheel \$33.76 @ Brisky Pet Products www.brisky.com



The Wobust Wodent Wheel measures 12 inches in diameter. It is 5.3 inches wide and has 3.6 inch "mouse-hole shaped" entry holes. Overall height is 13 inches. Measure your cage door opening to make sure this wheel will fit your cage (needs a 12 inch opening).

This is the only exercise wheel recommended and approved by the ASPCA during their Seal of Approval program (1999-2006).

The most frequent complaint of hedgehog owners who use Wodent Wheels is that the wheel must be disassembled for cleaning.

Transoniq, the company that makes the Wodent Wheel, is no longer pursuing retail sales in the U.S. However, their website includes a list of retailers as well as directions for assembly of the wheel. You can find it online at <http://www.transoniq.com/>

11" Deluxe Sheet Metal Wheel \$45 @ Quality Cage Company, Portland, OR



The Quality Cage Company of Portland, Oregon, makes and sells the Deluxe Sheet Metal Wheel in three different sizes. The hedgehog sized wheel, Model SMW-11, has an 11½" diameter wheel and a 5" wide solid running surface. The approximately ¼" wire frame of the wheel allows it to stand by itself, or be attached to the wall or ceiling of a cage. This sturdy wheel is made of welded galvanized metal and powder coated in a silver vein finish. Website address is <http://qualitycage.com>.

Sources:

- 1 Lao Che. "More Bang for the Buck." Customer Reviews: SuperPet Chinchilla 12-inch Giant Silent Spinner Exercise Wheel. Amazon, February 29, 2008. Web. 7 Jan. 2011. <<http://www.amazon.com/Super-Pet-Chinchilla-12-Inch-Exercise/product-reviews/>>.



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PPM CO	Time	Symptoms
35	8 hours	Maximum exposure allowed by OSHA in the workplace over an eight hour period.
200	2-3 hours	Mild headache, fatigue, nausea and dizziness.
400	1-2 hours	Serious headache-other symptoms intensify. Life threatening after 3 hours.
800	45 minutes	Dizziness, nausea and convulsions. Unconscious within 2 hours. Death within 2-3 hours.
1600	20 minutes	Headache, dizziness and nausea. Death within 1 hour.
3200	5-10 minutes	Headache, dizziness and nausea. Death within 1 hour.
6400	1-2 minutes	Headache, dizziness and nausea. Death within 25-30 minutes.
12,800	1-3 minutes	Death

Like food and water, animals need adequate air to live. However, it can be harder to determine when there is danger of inadequate air; housing or shipping animals in closed containers makes it especially important to provide adequate ventilation openings for airflow through the container. The openings need to be fair sized to provide for sufficient oxygen supply and dilution of carbon dioxide released by the animals' breathing. To get more specific, the table below shows the vent area for the cages tested. One way to measure it is the ratio: total square inches of vent area (length x height in inches) divided by the cage volume in cubic feet (length x width x height in feet).

CAGE TYPE	VENT RATIO (square inches opening per cubic foot)
Small Sterilite, finger vents	13
Large Sterilite, finger vents	8
Small Sterilite, modified	1844
Large Sterilite, modified	896
Pet Voyageur, 100, turquoise	650

Using this ratio a bigger number means better ventilation. The cages with small finger size vents are too small. The modified cages were found to keep conditions near background and may be more than absolutely necessary. The Pet Voyageur was also very effective; this is a commercial cat carrier. Most people won't want to do actual measurements; just keep in mind that generous vent area is needed. See the small modified cage below:



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Some basic advice for keeping your hedgehogs and other pets well ventilated:

- ◆ Provide adequate cage vent openings. Using a blanket cover reduces ventilation but will still be OK as long as the vent area is large enough and the blanket is ordinary cloth and is not airtight.
- ◆ Vents need to be distributed from top to low on the cage. Vents only on the top won't assure that fresh air will mix to the bottom.
- ◆ Don't overcrowd living and travel cages. Hedgehogs need their space and multiple animals multiplies the ventilation requirement.
- ◆ Don't use airtight covers or plastic film. Loosely woven blankets are best.
- ◆ Don't use airtight carry bags. Models with screen side vents are available.
- ◆ Maintain proper temperature for comfort and safety. Chemical heat packs could be used in moderation with good ventilation but note that they don't make enough heat for really cold conditions. The heat disks such as Snuggle Safe which are warmed in a microwave oven can also give hours of heat. Place so the animal can move away if too warm.
- ◆ To monitor temperature at home or while traveling a small recording thermometer is useful. The P-3 Mini Hygro-Thermometer is very handy. It's only a couple of inches wide, costs about \$14 and records the maximum and minimum temperature and humidity until reset.

All these tests sound pretty technical, but we just need to keep in mind that some basic attention to providing ventilation at home and during travel will assure that our pets have sufficient air for breathing. If in doubt, err on the side of more ventilation vent area.

If you have questions, comments or would like a longer version of this report- in color, send an email. It may also be posted on the Hedgehog Welfare Society website www.hedgehogwelfare.org

Jim Woodring

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Hedgehog's Delight

This wonderful photograph was taken by Alice Popkorn who explains that hedgehogs come to the door of her home in Germany every autumn to feast on the food in her cat's dish before beginning their winter sleep. Used with permission.

Adopted T'weed Makes Guest Appearance at School for Hedgehog Day

By Donna Henry



Brandon Henry and his sister, Tatum, with their hedgegies, Taco (left) and Pinto.



Pinto and Brandon Henry with Brandon's classmates.

This article was originally published in [Shore News Today](http://www.shorenwstoday.com) (www.shorenwstoday.com) on February 8, 2011. Reprinted with permission.

Brandon Henry, a student at Arthur Rann Elementary School in Galloway, New Jersey, brought his adopted pet hedgehog, Pinto, into school for Hedgehog Day.

The class was provided with a brief history of the holiday, as Brandon told them hedgehogs were the original spring forecaster for the ancient Romans. Germans inherited this tradition but upon immigrating to the United States and finding no hedgehogs they substituted groundhogs.

Pinto drew tons of attention from curious students and teachers alike, not for his unique weather forecasting ability but for his adorable little face and inquisitive nature.

Pinto seemed to be enjoying all of the attention, allowing students to touch his soft quills, and to be held while Brandon provided the class with some interesting hedgehog information. Brandon made sure to add that, although hedgehogs are low maintenance, pets they still require specialized care and of course love and attention.

Hedgehogs are small, insectivorous mammals. Although they have quills, they are not related to the porcupine. Petting a friendly hedgehog is like petting a hairbrush, they're bristly, not prickly. When frightened, they can roll up into a tight ball and look something like a sea urchin. Hedgehogs are native to England, Europe, Africa and Asia. The hedgehog that is kept as a pet in North America is the African Pygmy Hedgehog and they are much smaller than their English cousins.

Brandon concluded by saying that he and his sister, Tatum, who also has a pet hedgehog, named Taco, are both lucky to have them, but the hedgehogs are also lucky as they were originally rescued in the December 2009 animal seizure in Arlington, Texas. Our family adopted our hedgehogs from the Hedgehog Welfare Society and drove to Maryland to pick them out on Valentines Day, 2010.



A Different Kind of Literary Hedgehog

By Elaine Becker

The theme for the Virginia State library winter reading program for kids is "Reading with Hedgie" using Jan Brett books. When I called the librarians and asked if they would like me to bring in live hedgehogs, they jumped at the opportunity! They asked if I would be interested in going to some of the other libraries too. I ended up scheduling six "playdates" for my boys, Speedy and QE2.

Anyone who has seen Speedy at either the of last few hedgegie shows knows he can be counted on to entertain crowds with his antics and NOT be shy! QE2, on the other paw, hides his face at the least movement or sound. I wasn't sure if such a timid little boy would do well but figured he could hide in his carrier if it seemed to be too much for him. Happily, Speedy is eager to go TP tubing any time, so I'd put him in his playpen with a couple toys to go "hog wild" while bragging about him being an athlete. Then I'd take out QE2 and hold him in his overturned hat as he slowly warm up to showing his cute baby face. I'd tell the kids (and their parents) about Hedgehog Day and answer questions, sprinkling bribes (mealies) in front of both boys to keep them active. Both were big hits!

I had a table with books, stuffed toys, an HWS calendar, t-shirts, etc., to show the variety of places hedgies can be spotted. One stuffed hedgie is the size of a Euro hedgie, others are African size. Speedy is an apricot and QE2 is dark grey, almost black. So the audiences saw some variety of size, color and personality!





Photo from FlyingSaucerWheels.com



Alice inspects a newly arrived flying saucer!

Flying Saucer Wheels and Hedgehogs By Margaret Myhre

As I was researching the article on exercise wheels, I came across the Flying Saucer Exercise Wheel which has been described as the Rolls Royce of exercise wheels. I was able to find many product reviews from chinchilla owners but found nothing related to hedgehog use of this type of wheel. At Jennifer Plombon's suggestion, I contacted the Quality Cage Company of Portland, Oregon, which sells Flying Saucer wheels, to ask if hedgehogs were able to use them and if they could put me in touch with a hedgehog owner who might be willing to review the wheels for the newsletter. They referred me to FlyingSaucerWheels.com of Port Angeles, Washington.

I emailed FlyingSaucerWheels.com and was immediately contacted by retired dentist, inventor and chinchilla enthusiast, Dr. Marty Hull who had this to say:

Yes, we have sold wheels to hedgehog owners. The small size (12") wheel works well. The 14 inch wheel (standard size for chinchillas) is actually easier to turn than the 12" and has a larger, less curved running surface so is probably more ideal where adequate cage space is available. I do not have a lot of info on hedgehogs as our primary customer base is owners of chinchillas and degus. A couple advantages: Being mounted to the cage wall, it won't fall over and injure the animal, it is quiet and the running sur-

face is smooth. Chinchillas have pads on their feet which will not hold up on a bumpy surface.¹

Dr. Hull spent ten months developing and testing prototype wheels that were free of hazards such as slats, bars, spokes, or open wire mesh that might trap an animal's feet, legs or head. Drum-type wheels lack these hazards but must be extremely large for chinchillas to avoid over-arching of the back. The dish design of the flying saucer wheel has no openings or sharp edges and it produces a running surface with "a diameter substantially greater than the actual wheel diameter. The greater Effective Diameter allows animals to use a full length stride and run faster."²

This means that a wheel with an actual diameter of 11 inches (an appropriate size for most hedgehogs) will have an effective diameter of 16 to 18 inches!

The galvanized steel construction of the Flying Saucer wheel is simple and strong. "The dish is axle-mounted on two pressed, flanged ball bearings for stability and durability... A standard 3/8 inch diameter bent metal cage hanger bracket, attachment devices and hex wrench are included" with the Flying Saucer Wheel.³

While the bearings on these wheels are durable, they are not water proof. Submerging them in water will

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damage the bearings. Luckily, they can be easily cleaned by using a rag soaked in warm water and wiping them down with a paper towel. The surface must be quickly dried after cleaning. The wheel's bearings are equipped with dust covers which protect them from dust, moisture, and animal urine. A spare bearing is shipped with each wheel.

In a later email, Dr. Hull said that he had gone through his email files to find hedgehog owners who had purchased Flying Saucer Wheels. "I came up with skunks, prairie dogs, opossums, degus and chinchillas. One possible on a hedgehog."⁴

Then Dr. Hull came up with a plan. He offered to send a Flying Saucer Wheel to me so that my hedgehog, Alice, could take a test drive. Needless to say, Alice and I were thrilled!

Before shipping the wheel, Dr. Hull did some research on hedgehogs and sent another email:

I was just reading HedgehogWiki and note that hedgehogs need exercise to stimulate bowel and bladder function. Since my wheel is galvanized steel, constant urine and feces will eventually erode the zinc coating and will require cleaning every day. Your call.⁵

I assured him that daily cleaning of exercise wheels is routine for hedgehog owners. He then came up with a refinement for hedgehog use of the Flying Saucer Wheel:

I had a couple ideas about a wheel for hedgehog use: I need to experiment a little with sealants. Each wheel has a dust cap to protect the upper bearing on the wheel. I use some white glue to seal the dust cap against the infiltration of dust. That does not make a water-proof seal. Chinchillas seldom urinate on the wheels so the wheel itself does not need to be water-proof. I do not routinely seal the seam between the wheel dish and the center piece that is riveted to the dish.

For this one, I will use a silicone caulk to seal the center piece to the dish and also to seal the dust cap to the center piece. That should make the wheel hold up significantly better in hedgehog use. If this works out, then I will offer the sealant for hedgehog owners.⁶

I was wondering how long it would take Alice to learn to use the Flying Saucer Wheel since she is not the most adventurous hedgehog I've ever had. She is a very private hedgehog and does her running in the middle of the night so I was unable to observe her initial efforts on the new wheel. Nevertheless, the morning after it had been installed in her living quarters, there was ample evidence that she had used it and taken a good long run on it.

The wheel is almost soundless when Alice is running. I always have to look to verify that it is in use! By then she has jumped off but evidence remains!

To clean Alice's standard exercise wheel I immerse it in a sink full of soapy water and scrub it with a long-handled brush that was designed for cleaning an outdoor grill. Then I rinse it off, dry it, return it to Alice and bleach the sink. All I need to do to clean the Flying Saucer is soak a cloth in warm water, wring it out, and wipe down the surface of the wheel. Then I dry the wheel with an old terry cloth towel! Most of the droppings fall off the wheel to the floor of the cage where they can easily be picked up and removed.

A Flying Saucer Wheels is expensive--\$69 for an twelve inch wheel—but well worth the investment. It is nearly indestructible and will last for years. I would definitely recommend it as a useful purchase for hedgehog owners. My experience with the Flying Saucer Wheels company was extraordinary. Dr. Hull went to great lengths to answer my questions and to find ways to accommodate the needs of a hedgehog on a flying saucer!

¹ Hull, Marty, Dr. E-mail interview. 7 Jan. 2011. Hedgehogs and Flying Saucer Wheels.

² "Wheel Information: The Flying Saucer Wheel Concept." The Flying Saucer Exercise Wheel. N.p. 17 Dec. 2010. 8 Feb. 2011.

<<http://www.flyingsaucerwheels.com/wheelinformation.html>>.

³ Ibid.

⁴ Hull, Marty, Dr. E-mail interview. 8 Jan. 2011. Hedgehogs and Flying Saucer Wheels.

⁵ Hull, Marty, Dr. E-mail interview. 9 Jan. 2011. Hedgehogs and Flying Saucer Wheels.

⁶ Ibid.

A Flying Saucer Came to My House!

By Alice Myhre



Hi Everybody, this is Alice. I gotta tell you about something really weird that happened to me a couple of weeks ago. It all started when I was working on my book report for school.

Teacher said we had to read SCIENCE FICTION for our next book report. So I picked out a really cool book about these creatures from another planet who lived far out in the galaxy where the only way they could get around was in flying saucers!!

I spent a whole Saturday reading this book. I read and I read and I read until I finally finished it about 3:00 AM on a Sunday morning. After that I was feeling kind of scared and jumpy and it took me a long time until I finally fell asleep.

And when I woke up, there, right in the middle of my room, someone had parked a giant, real FLYING SAUCER!!!!

I was really scared. I hid under my blankies so the Martians wouldn't see me. But every time I poked my head out from under the covers I didn't see any-

thing. Finally I crept out from under my blankets and tip-toed over to the flying saucer. I thought it might be hot from ripping through the stratosphere and maybe even stinky from all those Martians traveling on it. But it was not hot and I couldn't smell a trace of Martian!

I walked all the way around it several times...and then I even walked under it. No stink and no Martians! Whew!

Then I stood up on my back legs and felt it with my paws! It started to move and at first I thought it was going to take off. I quickly curled up into the tightest little ball you ever saw!

When I opened my eyes it was still there—right in front of me. Then I climbed up and stood on it!!! It kind of rocked back and forth but it didn't take off. When the rocking stopped I waited awhile and then I started to walk very s-l-o-w-l-y and carefully. And guess what??!!

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The flying saucer moved but it didn't go anywhere. Even when I ran as fast as I could, it just went round and round but it never flew away! It was super quiet and it just stayed there right in my room. And you know what? I finally noticed it wasn't scary any more ... it was really, REALLY FUN!!

When I wrote my book report I talked how cool flying saucers are and how easy it is to really fly on them. I even drew these cool pictures of my flying saucer.

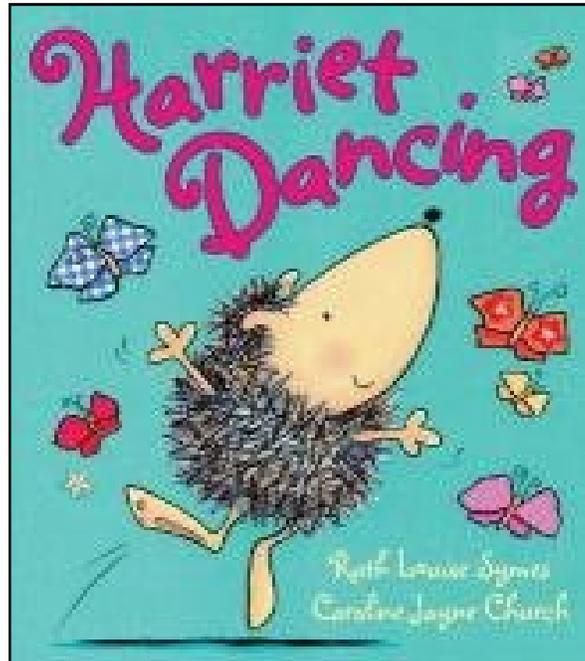
My teacher gave me a C- for exaggerating! But I don't care, I know the truth is and I also know what I'm going to be when I grow up! I gonna be an astronaut...so there!

Love,

Alice

These drawings were created especially for Alice's story by Charlotte Guerra, a student at Gonzaga University, Spokane, Washington.





The Literary Hedgehog : *Harriet Dancing*

This gentle picture book for children ages four to eight introduces Harriet, a young hedgehog who visits her best friend Ivor every day after breakfasting on strawberries and worms.

One day during a leisurely walk to meet Ivor, Harriet greets all her forest friends, then pauses to admire the spring flowers and watch hundreds of beautiful, colorful butterflies dancing in the sunshine. Inspired, Harriet begins an exuberant dance of her own. She is the happiest hedgehog in the whole world! At least until she realizes that all those stuck up butterflies are sitting in the trees and staring at her!

"Butterflies only dance with butterflies!" they tell her.

"Please?" says Harriet.

"The butterfly dance is only for butterflies, not hedgehogs." they sniff.

Poor Harriet hurries away so they won't see her tears. She is crying so hard she can't see where she is going. Soon she falls and rolls downhill as she curls herself into a ball to avoid getting hurt.

When the sad little hedgehog arrives at Ivor's

house, he leads her to a puddle to look at her reflection. She sees that she is covered with beautiful flowers that are stuck among her quills. She smiles but says, "The butterflies said I couldn't dance with them."

"I'll dance with you instead," declares Ivor. He rolls over and over in the flowers until he, too, is covered with flowers.

Joined by their friends Rabbit, Mole and Frog, they dance and dance until, once again, Harriet feels like the happiest hedgehog in the whole world. Soon the butterflies have gathered to watch the fun.

"Can we please join in too?" they ask.

"Of course," replies Harriet, "dancing is for everyone big and small."

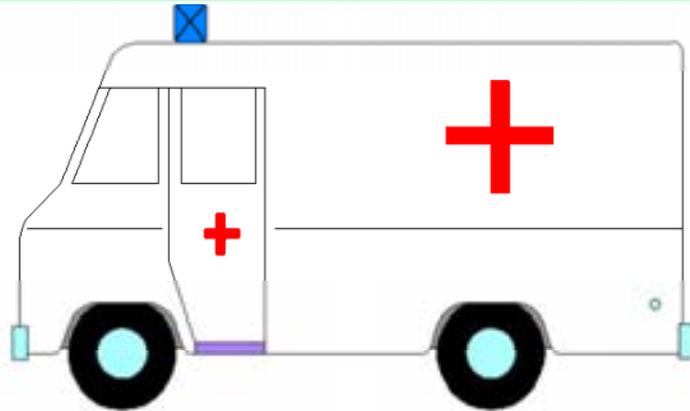
Soon all the forest creatures are happily sharing their fun with one and all.

A craft project based on Harriet Dancing is in this issue of the newsletter on page 20.

Harriet Dancing. By Ruth Symes. Illustrations by Caroline Jayne Church. Chicken House, 2008.
ISBN: 978-0545032049

Thoughts from the CVO

By Deb Weaver



<http://www.arthursclipart.org/>

I wrote this article for the Jan/Feb 2010 newsletter. However, with so many new members in the past year, I thought it was a good time to reprint it.

How to Perform the Heimlich Maneuver on Your Hedgehog

A couple of years ago someone posted to the Yahoo! Hedgehog Welfare chat group that their hedgie had almost choked on something. The owner "fished" the item out with her finger. That got me to thinking.

A few weeks later I had Molly in to the vet for a checkup. Some of you may remember my Molly - - Miss Molly Dolly Snickerdoodles Sassy Pants Show Queen Weaver. When my vet said, "Any other questions?" my response was, "Yes, can you give a hedgehog the Heimlich maneuver?" My vet said, "Actually yes, and I'll demonstrate with Molly."

Here's what my vet shared:

1. Take your hedgie and place him or her in the palm of your hand with the hedgehog's belly against your palm and the nose pointing towards your fingertips.
2. Take your other hand and place it on top of your hedgie (the spine should be against your palm). Make sure you have a good grip on the hedgie.
3. Now swing your arms up (like you were starting to make a golf swing) and then swing your arms quickly down.
4. When the hedgie's head is pointing downward again, give a "good, solid" squeeze - - like you were squeezing a bellows.
5. After the squeeze add an additional downward shake.
6. Repeat if needed.

I'm not sure what Molly thought of this entire ordeal (we spared her the squeeze part) but much to her credit she didn't raise a quill. I've since practiced on stuffed animals from time to time so I won't forget the sequence. I hope I never have to perform this procedure but I'm glad I know it. And now so do you.

HEDGEHOG TRIVIA : The Irritable Hedgehog



IRRITABLE
HEDGEHOG

At least twice in its nine years of publication, the Hedgehog Welfare Society Newsletter has examined the role hedgehogs have played in music. We first ventured into this field in issue #45 with a discussion of Peter Schickele's composition, *Beastuary*. As you may recall, the fifth movement of this contemporary piece attempts to musically describe the movements of a huffing hedgehog as it rolls itself into a vibrating ball of quills. In issue #51, the now defunct Chinese indie rock band Hedgehog made its first and final appearance in the Hedgehog Trivia column.

Now we would like to introduce our readers to Irritable Hedgehog, the music publishing imprint of David D. McIntire, a teacher, musician, composer, and writer who plays clarinet and saxophone. Irritable Hedgehog provides access to McIntire's recordings and scores as well as minimalist and post-minimalist repertoire from other artists. Early re-

leases from the organization included *An Hour for Piano*, a minimalist classic by Tom Johnson, as well as McIntire's epic electroacoustic composition *Landscape of Descent*.

How did this organization come to be named after our quilly friends? David McIntire was inspired by this aphorism from the Greek poet, Archilochus who lived from 680 to 645 B.C.E.:

"The fox knows many things; but the hedgehog knows one thing—one awesomthing." (paraphrased by McIntire).

Here is McIntire's explanation of Archilochus' words:

I take Archilochus' poem as an argument in favor of single-mindedness, and that is what we strive for here. Many of my compositions

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IRRITABLE
HEDGEHOG

Drawings by Eileen McIntire. Used with permission.

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are about a single idea, often explored at considerable length. Years ago I wrote a saxophone quartet entitled Archilchus' Hedgehog, and when I was casting about for a name for my music "company," the hedgehog concept reared its prickly head once more. " ¹

You can preview and purchase Irritable Hedgehog recordings by going to the website:

<http://irritablehedgehog.com/Recordings.html>

The Irritable Hedgehog is operated by a group of five:

David D. McIntire: Electroacoustics, soundscapes, irritability

R. Andrew Lee: Pianism, internets, vertical time

Rachel McIntire: video, imaes, global perspective

Eileen McIntire: Hedgehogs, marketing, forensic psychology

Michelle Allen McIntire: catalyst

The wonderful hedgehog drawings shown in this article are by David McIntire's daughter, Eileen McIntire. They are featured on many items at The Irritable Hedgehog's Café Press store:

<http://www.cafepress.com/IrritableHedgehogMusic>

1 McIntire, David D. "About ." Irritable Hedgehog. Irritable Hedgehog, 2010. Web. 30 Jan. 2011. <<http://irritablehedgehog.com/About.html>>.



Dancing Hedgehog 3D Picture

Courtesy of Danielle's Place, used with permission.

Directions for creating a 3D picture of Harriet, the hedgehog in the book Harriet Dancing, are available online at Danielle's Place of Crafts. You can access instructions for this craft, as well as several other child-friendly hedgehog crafts, by going to Hedgehog Crafts and Learning Activities at <http://www.daniellesplace.com/htmlHedgehogCrafts.html>

March / April Birthdays



MARCH

March 15 Kei Lei Denny

APRIL

April 11 Kenny Woodring





2011 Midwest Hedgehog Rendezvous Hedgehog Show Saturday April 16, 2011

Come join us in Milwaukee for this affordable one day show.

The Rendezvous will feature an International Hedgehog Association (IHA) Sanctioned Hedgehog Conformation Show, hedgehog races, hedgehog costume contest, and an educational program. The educational program includes a presentation on hedgehog care by well known hedgehog expert Dawn Wrobel. There will also be a resource forum presented by representatives of the International Hedgehog Association and Hedgehog Welfare Society.

Cost is \$5.00 per person and \$5.00 per hedgehog if you pre-register. Check out our newly designed web site at www.hedgehogrendezvous.com for more information and forms or email Deb Weaver deborah.weaver@marquette.edu

Hope to see you there!



Photo by Michael Sierra, used with permission