

Envirotalk

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GOVERNMENT OF BERMUDA
Ministry of The Environment and Sport

PROMOTING APPRECIATION, ENHANCEMENT AND CONSERVATION OF BERMUDA'S ENVIRONMENT



FROM THE MINISTER

Welcome to the re-launch of *Envirotalk*. After a two year hiatus, the Departments of Conservation Services and Environmental Protection are keen to re-launch this publication to keep the public informed of the latest developments in environmental initiatives and issues in Bermuda.

We hope that you will encourage friends, neighbours and colleagues to sign up to receive their copy of this quarterly publication. In our effort to promote environmental sensitivity and sustainability, we are encouraging everyone to subscribe to *Envirotalk* electronically (via e-mail). It will also be posted on the Government portal.

We would like your input. We want to know the topics you would like to know more about and the programmes, initiatives and studies that interest you. We will also be looking for your assistance. We encourage you to volunteer your services and to become active in the community environmental projects and initiatives which take place across the island.

I hope you enjoy this edition of *Envirotalk*. On behalf of everyone in the Ministry of The Environment and Sport, and on behalf of the Government of Bermuda, I wish to thank you for your active participation in helping to protect our environment.

A handwritten signature in blue ink, appearing to read 'G. Blakeney'.

The Hon. Glenn A. Blakeney, J.P., M.P.
Minister of the Environment and Sport

WELCOME

In this issue....

- Plant Protection Officer, Claire Jessey gives us the facts on the recent news that black widow spiders have been found in Bermuda.
- We take a look at the completed formal gardens in the Botanical Gardens.
- We review the recently published *Bermuda's Flora* book by botanist and author, Lisa Greene.
- Acting Senior Marine Resources Officer, Tammy Trott, tells us about a recent conservation project involving the black grouper.
- We've got the Spring Planting Calendar.
- Take a look at our great recipes for hot cross buns and traditional cod fish cakes, just in time for Easter!
- Jonathan Nisbett, our Veterinarian Officer, reviews equine import protocol.
- And finally, we've got details of the fast approaching 71st Bermuda Annual Exhibition. See you there!

Please contact Caroldey Douglas (Tel: 239-2307 or e-mail: cdouglas@gov.bm) with ideas for future articles.



Please contact Alison Green (Tel: 239-2310 or e-mail: agreen@gov.bm) if you would like to be added to the subscriber list.

BLACK WIDOWS IN BERMUDA

In March of this year two **black widow spiders** (*Latrodectus* sp.) were found residing in a garage at a Southampton residence. This much-feared spider has been intercepted occasionally in incoming commercial shipments of fruits or vegetables. In each of these incidents, the Department of Environmental Protection has been alerted and the spider has been collected and destroyed without further event. However, the latest sightings are cause for concern as the spiders were well settled in their respective thick, dense, sticky webs with evidence of several previous insect meals nearby, suggesting that the spiders had not recently arrived and may have been present for some months prior to being noticed by the homeowner.

In response to the discovery of the black widow spiders, a search of the residence and neighboring houses and structures was conducted. No more black widow spiders were found; however, very high numbers of tropical brown widows were present.

Tropical brown widows are quite common in Bermuda and are often sighted under garden furniture or in quiet outbuildings. They are not considered dangerous in spite of their toxic venom as they are extremely reluctant to bite and therefore their presence should not be cause for alarm. The brown widows resemble the black widow both in size and markings and the darker members of the tropical brown widow could be easily confused with the black widow. The following characteristics of the two spiders can help with recognition; however a positive identification by the entomologist at the Department of Environmental Protection can be made using an emailed image or a dead specimen. At no time should suspect black widow specimens be collected or handled. A household insecticide can be used to kill the spider prior to collection.

Black Widow	Brown Widow
 <p data-bbox="109 824 192 841">© Britannica</p>	 <p data-bbox="543 824 642 841">© Troy Bartlett</p>
<p data-bbox="109 846 242 870">Description:</p> <p data-bbox="109 873 519 1130">Female black widow spiders are 1 ½ inches long (when legs are extended) shiny black, occasionally very dark brown in colour with a large spherical abdomen. There is a distinctive orange-red or red hourglass shaped marking on the underside of their abdomen. Males are much smaller and lack these characteristic markings.</p>	<p data-bbox="543 846 676 870">Description:</p> <p data-bbox="543 873 953 1214">Female brown widow spiders are highly variable in colour from beige to dark brown with a yellowy- orange to orange to red hourglass shape on the underside of their large spherical abdomen. They are a similar size to the black widow, but generally a bit smaller. The sides of the abdomen may have a few white stripes on each side. Their legs often have visible darker bands around the joints of the legs. Males are much smaller and lack these characteristic markings.</p>
<p data-bbox="109 1222 189 1247">Eggsac:</p> <p data-bbox="109 1250 519 1365">The eggsac is the best identification feature. The black widow eggsac is round to pear shaped, white or cream coloured, with a smooth surface.</p>	<p data-bbox="543 1222 623 1247">Eggsac:</p> <p data-bbox="543 1250 953 1419">The brown widow egg sac is off white to tan, round with many tufts of silk sticking out, giving it a spikey appearance. The eggsacs of both types of widow are found in the centre of the web near the spider.</p>

<p>Habitat: This spider is generally not found indoors, but it can take up residence in a dry, dark corner of a sheltered structure such as a garage or shed. Webs can also be made outside in low shrubs.</p>	<p>Habitat: This spider can be common outside buildings wherever there is space to build a web, such as under balustrades, fences, window sills, in door hinges or under plant pots. It prefers dry, sheltered, quiet areas.</p>
<p>Medical Importance: Caution: black widow spiders are venomous and victims can have a moderate to severe reaction to the neurotoxic poison depending on the amount of toxin injected, the age and health of the victim and the part of the body bitten. Seek medical advice for these bites.</p>	<p>Medical Importance: The bite of the brown widow is not considered to be medically significant in spite of their toxic venom and the spider is extremely reluctant to bite. However, due to the possibility of an unpleasant reaction, these spiders should not be handled.</p>

Surveys of the area of the original black widow sighting will be carried out periodically to confirm whether or not the spider has established in this area. If the black widow spider is found to be resident in the area every effort will be made to eradicate the population.

FORMAL GARDENS RENOVATION COMPLETE



In 2003 a Management Plan was developed which created a long-term phased improvement plan for the Botanical Gardens. The purpose of the management plan was to present a phased programme for the management, improvement, and maintenance of the Botanical Gardens, in order to successfully:

“Educate and promote interest in botany and horticulture through the development, maintenance and display of botanical collections and demonstration gardens, while continuing to serve Bermuda as a passive park and as a venue for events that are in keeping with its primary goal of environmental education.”

The governing factors in the decision to renovate the Formal Gardens were largely guided by the following goals:

- The promotion of Bermuda Botanical Gardens as the island's premier reference centre for local and global botanical education and displays.

- To increase the aesthetic impact of the demonstration garden such that it would serve as a major attraction for visitors to enjoy.

- To reduce maintenance procedures and regimes within Botanical Gardens, while increasing the aesthetical appeal and maintaining the highest standards of horticultural displays.



The new exhibit showcases four gardens based on historical formal styles that have had a major influence on modern garden design.

Visitors to the gardens can stroll through and experience a Japanese Zen Garden, a seventeenth century style English Parterre Garden, a twelfth century style Persian Garden, and a Tudor style children's Maze Garden.



Each garden is approximately ninety square feet in size. There is a central viewing gazebo that serves to divide the four gardens and within each garden the planting beds consist of a mixture of plants that are significant to the gardens theme. The plant lists consist of localized plants of the following: palms, trees, ornamental grasses, annuals and perennials, herbaceous shrubs and groundcovers. The planting border that boundaries the western edge of the overall garden has been converted into a Bermuda Rose Collection.

This is an exciting stage in the evolution of the Botanical Gardens which, with over 100,000 visitors a year, is one of Bermuda's most popular destinations for tourists and locals alike. The Parks Department envisions that the redesign of this garden will enhance the park's ability to fulfill its mission to educate and promote interest in botany, horticulture and garden design.

BLACK GROUPER TAGGING PROJECT

The black grouper (*Mycteroperca bonaci*) is a large bony reef fish species and is an important component of the local fishery. In 2007, almost 49,000 pounds of black grouper were landed. In order to ensure a



sustainable harvest of this species, it is vital that we have a good understanding of its biology. From data collected on black grouper in Bermuda, we now know that they can live for at least 33 years and that they change sex from female to male between a length of 110cm and 120cm. We also know that black grouper come together

in large numbers to spawn (reproduce). This is called a spawning aggregation. These aggregations make black grouper very vulnerable to overfishing. However, very little research has been conducted on this aspect of black grouper biology in Bermuda or elsewhere.

In June of last year, the Marine Resources Division began a novel tag and release project at a black grouper spawning aggregation site in an area off the eastern end of the Island. This site is normally closed to fishing from 1 May to 31 August every year. However, the closure period for the aggregation site was extended until the end of November last year. The aim of the study is to assess the effectiveness of the normal closure period in protecting the aggregation.

Some of the questions that we would like to answer during the project are: In what months do black grouper aggregate to spawn? Do they aggregate during a particular moon phase? How long do fish remain at the aggregation site? Do the same fish return to the aggregation site each year?

The study involves implanting acoustic tags into the black grouper. Fish are caught on hook-and-line, brought to the surface very slowly and put in a specially made cradle with water running over the gills. A small cut is made in the belly of the grouper and an acoustic tag is inserted into the abdominal cavity of the fish. The incision is then stitched up and the grouper is released. The tags transmit a signal

every few minutes which is detected by receivers (hydrophones) that have been moored at the site. Each tag has a unique code so that individual fish can be identified by the receivers. The data from the hydrophones will be downloaded onto a computer every few months and analyzed.

To date, we have confirmed that fish are present at the aggregation site between the full and new moons in June, July, August, September, October and November. The project is expected to last for three years.

All acoustically tagged groupers are also externally tagged with yellow "spaghetti" tags that are approximately three inches long. If you catch a black grouper with external yellow tags or see an externally tagged grouper while diving, please contact the Marine Resources Division at 293-5600.

BOOK REVIEW

Bermuda's Flora

If you are interested in knowing more about the plants that grow around you, then the series *Bermuda's Flora*, by Lisa Greene, is for you! Earlier this year, the second volume in the series hit the bookshelves. Like the first volume, it has 75 high-quality, colour photographs to help the reader identify the featured 27 plants. For each plant, there is a page of information about the plant, adapted from the author's weekly newspaper column "Gardener's World." Both volumes are packaged as engagement diaries; however, when you're finished with the diary, you can tear the diary pages out and you're



left with the photographs of the plants in the front half of the book and the information about each one at the back, along with the index and list of references. These are definitely books that you will want to keep.

The plants in the first two issues (54 in total), range from common to rare, native to introduced, and ornamental to invasive. Each

plant is described in an informative, easygoing style, peppered with snippets

about botany, plant history, Bermuda's history, traditional uses and folklore, medicinal uses, plant conservation and origins of plant names. Bermuda's Flora makes a great gift for people here and abroad. It is available at stores throughout the island.

*Alison Green
Librarian*

IN THE KITCHEN

Cod Fish Cakes

- 1 lb codfish (pre-soaked)
- 6 potatoes (peeled)
- 1 egg
- 2 tbsp. butter/margarine
- ½ tsp. pepper
- 1 tsp. seasoning salt
- 1 ½ tsp. curry powder
- ¼ tsp. thyme leaves
- 2 tbsp. chopped parsley
- 1 med/ large onion
- Cooking oil
- Flour



Cook codfish and potatoes on medium high heat until potatoes are tender. Take off heat, drain and allow to cool.

Beat egg in separate bowl and set to side.

Chop and fry onion and set to side when onion is clear to golden brown.

Flake codfish and potato; add butter and mix well. Add salt, curry powder, pepper, thyme, onion and parsley to codfish mix.

Mash well. Form into 2" to 2 ½ " balls, then flatten into patties. Dust with flour and fry in cooking oil until golden brown.

(Submitted by Jennifer Bulford)

Hot Cross Buns

- 3 ½ cups flour
- ½ cup sugar
- 3 tbs. melted butter
- ½ tsp. salt
- 1 cup milk (scalded)
- 1 yeast cake softened in ¼ cup warm milk
- 1 egg (beaten)
- 1 tsp. cinnamon
- ½ cup allspice
- ¾ cup raisins

Pour scalded milk into a bowl. Add sugar, salt and melted butter. Cool to luke warm. Stir in softened yeast and the well beaten egg. In a large bowl, sift flour, cinnamon, and allspice. Add raisins and liquid. Mix well then cover and let rise in a warm place until double in bulk.

Punch down and knead on a lightly floured board for a short time. Shape into large biscuits, and place on a well greased baking pan. Allow to rise again.

Brush tops of buns with slightly beaten egg white.

Bake at 375°F for 20 minutes.

Yields 18 buns.

Many thanks to Cecille C. Snaith-Simmons for allowing us to use her Hot Cross Buns recipe from her Bermuda Cook Book.

PLANTING CALENDAR – WHAT TO PLANT IN SPRING...

March

Beans, Beets, Broccoli, Cabbage, Carrots, Cassava, Cauliflower, Chard, Christophine, Collards, Corn, Cucumber, Eggplant, Kale, Leeks, Lettuce, Muskmelon (Cantaloupe), Mustard Greens, Okra, Pepper, Potatoes, Pumpkin, Radish, Rutabaga, Squash, Sweet Potato, Spinach, Tomato, Turnip, Watermelon.

April

Beans, Beets, Broccoli, Cabbage, Carrots, Cauliflower, Chard, Christophine, Collards, Corn, Cucumber, Eggplant, Kale, Muskmelon (Cantaloupe), Okra, Pepper, Pumpkin, Radish, Rutabaga, Spinach, Squash, Sweet Potato, Tomato, Turnip, Watermelon.

May

Beans, Cucumber, Okra, Pumpkin, Radish, Squash, Sweet Potato, Tomato.



REVIEW OF EQUINE IMPORT PROTOCOL



Since December 2008, the US Department of Agriculture has been investigating an outbreak of Contagious Equine Metritis (CEM), which is a bacterial disease of horses that may cause infertility in mares. CEM is mainly found in Europe, and was eradicated from North America over 25 years ago. However, as of late March 2009, the USDA has identified 13 stallions and 4 mares in 7 states which tested positive for CEM. Subsequent epidemiologic tracking of animals potentially exposed to the causative agent (*Taylorella equigenitalis*) has identified an additional 698 horses located in 46 States. All positive horses and all

exposed horses that have been located, are currently under quarantine or hold order. Testing and treatment protocols have begun. Similar actions are occurring in Canada on those premises housing horses that once were on an affected premise in the US.

The scenario has prompted the US Department of Agriculture's decision not to sign off on health certificates bearing the standard clause pertaining to Contagious Equine Metritis (CEM) in the USA. Veterinary Services Section of the Department of Environmental Protection has issued a new temporary rule for the importation of horses and ponies from the USA and Canada, and discussions are ongoing about fine-tuning the protocol. The amendment is necessary for the protection of horses in Bermuda and to maintain our CEM-free status.

Subject to review and modification, the new rule calls for each animal of breeding age to be quarantined and subjected to multiple tests by culture or polymerase chain reaction, within 30 days of export, to demonstrate freedom from *T. equigenitalis*. The test protocol is consistent with recommendations from the OIE (World Organization for Animal Health), the Canadian Food Inspection Agency and various veterinary references.

Contagious Equine Metritis is a venereal disease of horses causing infertility. Infected mares and stallions can become chronic, subclinical carriers. It is a reportable disease in the USA, Canada, UK and other countries.

Presently, there is no indication that an exposed horse has been imported to Bermuda, and there is no plan to test local horses unless clinical signs warrant it. Proper testing calls for multiple tests using a special media, with special handling, and testing in a specialized laboratory.

Horses being exported from Bermuda are unaffected by the rule change. There is no risk to human health.

71ST BERMUDA ANNUAL EXHIBITION

Botanical Gardens, Paget East, Bermuda

Thursday, Friday and Saturday
16, 17 and 18 April 2009

Open Daily:

Grounds 8.00 a.m. to 6.00 p.m.

Exhibition houses 9.00 a.m. to 6.00 p.m.

Admission:

Adults - \$10.00

Children under 16 years - \$5.00

Children under 5 years - Free

Senior Citizens presenting identification - \$5.00



The Bermuda Annual Exhibition is an icon of Bermuda's culture and traditions. The event was first held in 1843 and has grown to showcase the best of the best, while educating the community and promoting agriculture and horticulture. The event has become internationally recognized by its peers within the Caribbean and the United

States with an ever-increasing number of dignitaries in attendance.

For more details please contact:

The Annual Exhibition Office
P.O. Box HM 20, Hamilton
HM AX

Botanical Gardens,
169 South Road, Paget DV 04



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