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Bugs! Bugs! Bugs! Not just for children anymore! Seeking a national perspective

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PERSPECTIVES:
STRENGTHENING OUR BONDS

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**BUGS! BUGS! BUGS!
NOT JUST FOR CHILDREN ANYMORE!
SEEKING A NATIONAL PERSPECTIVE**

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ABSTRACT: *Insects as interpretive tools are an invaluable resource for the interpreter. There are many uses, from live insect displays to pinned specimens to the use of insect puppets in classrooms, conferences or other interpretive arenas. In this paper, the use of mealworms, the monarch butterfly as a candidate for our national insect, and the demonstration of insect locomotion are presented. The key to successful interpretation using insects is to encourage audience participation, exude enthusiasm, and promote the use of insects as an easy resource to acquire.*

KEYWORDS: *Insects, migration, locomotion, environmental education, interpretive techniques*

Introduction

The use of insects as interpretive tools has expanded in both quantity and quality. The ease of display and handling of certain insects adds to their appeal as interpretive tools. There are many interpretive exercises that can be accomplished with insects and I will outline mealworms, the monarch butterfly and hop, flutter, crawl as a way to demonstrate insect locomotion.

Mealworms!

Mealworms!

Mealworms!

One of the easiest insects to use for interpretation are mealworms. Cultures of mealworms are easy to obtain and keep. They can be purchased from pet stores or bait shops and are easy to rear using potatoes, apples, oatmeal and cornmeal. I keep the containers open and I do not add water as the necessary moisture is obtained from the potatoes and apples. Mealworm larvae, pupae and adults can be sieved out for use in interpretive projects. One of the most successful programs I have had using mealworms are the mealworm races. Simply sieve out a few mealworms (10-20) per group and give each group a mealworm racing arena (this can be a circle [18 inches across or larger], a square or

any shape you desire). I've used the intersection of four floor tiles with just as much success. To start the race, gather all the Mealworms and place them under a small cup in the center of your arena. On the count of three, lift the cup and it is off to the races! The winner is the first group with a mealworm all the way off the paper.

Prizes are given to the winning team (stickers, buttons or a portion of the mealworm colony). The race may be repeated and an overall winner selected. Each team can pick their best mealworm and continue to race. With a large number of groups (20 or more), I've set up double elimination tournaments. That way, teams may race at their leisure and an overall winner established.

Mealworms work well with people of all ages -- from pre-kindergarten through elderhostels. By focusing attention on the mealworm arena, it is possible to have over 40 groups of up to six people at one time. To increase the excitement, use a stopwatch and guarantee an award to the winning team.

The success of mealworms in interpretation increases the awareness of insects as interpretive tools and keeps the participant's interest long after you have gone. The ease of keeping Mealworms, coupled with the excitement generated, makes for a successful interpretive program for people of all ages.

Monarch Magic

The monarch butterfly has been proposed for our national insect by the Entomological Society of America. To become the national insect, a majority of both Representatives and Senators must co-sponsor a commemorative bill to bring it to the floor of Congress for a vote. The educational value of this process and the monarch butterfly's biology and ecology make it an excellent candidate for interpretation.

The best interpretive product to date is a poster produced by Horne Street Elementary School in Dover, New Hampshire. The 200 ft. long poster was made in panels by each class and taped together. It was sent to Carpenter Elementary School in Nacogdoches, Texas, and sparked an exchange of letters and postcards culminating in the "Monarch Express" consisting of a note from each student sent from Texas to New Hampshire.

Entire schools can be involved in this project and can become "Poster Pals." Classes can rear monarch caterpillars on milkweed and rear the butterflies from the chrysalis. The butterflies can be released or tagged and released.

I use a map of North America or a world globe to track the migration route of the monarch butterfly. The audience can participate by estimating the distance and time it takes the Eastern United States populations of the monarch butterflies to travel the 1800 miles from southeastern Canada to its overwintering areas in the mountains near Mexico City. The western United States population overwinters on the California coast in and near Pacific Grove (often called Butterfly Town, U.S.A.).

For classrooms or groups up to 40 individuals, I use a monarch puppet and teach "Flutter Butterfly"

as we wend our way around the classroom (or school). For large groups (up to 500) I use slides and encourage questions from the audience. The opportunity to "ask Dr. Dave" about the monarch life history and ecology has resulted in an invaluable interpretive experience. Examples of questions from first through sixth grade students included:

How many eggs does a monarch butterfly lay at one time? (one on the underside of individual milkweed leaves). When does a monarch butterfly begin to migrate and why? (The lack of milkweed, decreasing day length and temperature are all cues for migration). Why should we have a national insect? (There are over 90,000 species of insects in the United States having great diversity and unique biologies and ecology. The monarch butterfly is attractive, easy to recognize and its long migration is unique among North American insects. Occurring in all 50 states except Alaska, the monarch butterfly is a fitting symbol of the diversity of the insect species). Are there other candidates for the national insect? (Yes, the honey bee also has been introduced as a commemorative resolution).

The culmination of the year's activity in New Hampshire and Texas, including "Poster Pals," the "Monarch Express," a school wide "Monarch Fest" in Nacogdoches complete with costumes and a visit from the mayor, and "Monarch Assembly" resulted in the awarding of a Take Pride in America plaque by a Conservation and Ecology Explorer Post, the Department of Entomology at the University of New Hampshire and the U.S. Fish and Wildlife Service in Nacogdoches.

Hop!
...Flutter...
C.r.a.w.l

One of my trademarks as an interpreter has been the demonstration of insect locomotion by Hop Grasshopper, Flutter Butterfly and Crawl Caterpillar. Each member of the audience either gets his/her hand stamped or receives a tag with one of the three insects. As the program progresses, I discuss insect locomotion using a monarch butterfly puppet (flutter); a caterpillar (crawl), which changes into a butterfly (also flutter); or a grasshopper (hop or fly).

We discuss grasshopper parts ("Grasshopper Medley") and everyone demonstrates (with enthusiasm) antennae, compound eyes, mandibles, head, thorax, abdomen, tympanum, wings (4), legs (6) and other parts they so desire. After discussion of the monarch butterfly and the mealworm racer and an exhilarating round of the "Grasshopper Medley," everyone becomes the insect on their tag or hand stamp and you have a rousing session of "Hop! ...Flutter... C.r.a.w.l." This can be modified depending on the audience to create larger grasshoppers or butterflies, for example, or by simply fluttering in place, simulating crawling or gently fluttering.

The culmination of your interpretation may include a nature walk to observe the beauty and diversity of insects, or an observation of insects in culture, visiting an insect collection or simply enjoying the myriad of insects. Remember, be creative, be enthusiastic and be resourceful. Interpretation is both exciting and fun and insects certainly enhance the experience.

**Cockroaches, Bark Beetles, Ants
And Butterflies, Oh My!**

Other programs that may spark your interest with insects include the "Degree of Bugology" from a Bug Day program presented by Brian Winslow at Lake Metroparks in Kirtland, Ohio; Mike Weissmann and others in the Colorado Museum of Science present insects to children via the Bug Mobile, using a Volkswagon fashioned as a ladybug (ladybird beetle) to carry the mysteries of entomology to the classroom; The Bug Show from Colorado Extension Service, Colorado State University, choreographed by Nancy Zuschlag, features the ladybird beetle, the tomato and the hornworm; Project Wild Activities, courtesy of Carol Bylsma, includes Ants on a Log and other items; The Colorado State Forest Service presents The Tree and the Bark Beetles: A Saga of the Forest, courtesy of David Leatherman; and then there are the Zoo Women from the Minnesota Zoo! Who can forget Beth Heidorn, Laura Emmer and Marsha Knittig (and company) as they presented Edgar the Vulture, Bull Moose and "Creatures from the Ghost Trail" at Charleston.

But wait! There's more. Rumor has it that monarch butterflies, Leaf cutting ants, gigantic cockroaches and more, may ply the corridors in Vail. Be there as "Dr. Dave Meets the Zoo Women."

Interpretive activities with insects (large or small, real or imagined) are successful with groups of all ages and sizes. You as the interpreter can tailor your program to the audience. Be resourceful, be enthusiastic, and be creative. These qualities combined with a thorough knowledge of your material will ensure your success as an interpreter. ■