



The Nucleus

*Official Quarterly Newsletter of the
Texas Association of Biology Teachers*

Volume 21, Issue III

Summer, 2007

President's Message:

What fun it is to travel *and* learn!

The Galapagos trip that TABT sponsored in early June was all that I expected and more. We saw everything Alton Biggs had promised, some he had listed as possibilities, and a few he had not expected. We walked where Charles Darwin once tread and experienced these islands through his own words thanks to Robert Dennison, a.k.a. "Mr. Darwin." We experienced animals that are so unafraid of humans you had to watch out not to step on them as you walked the trails. There were lava fields, sunsets that awed, great conversations, and the Southern Cross. This was truly a trip of a lifetime. Check out the photos on pages 3 and 4 of this edition of *The Nucleus* to give you an idea of this trip.

We began our trip with two nights in Quito, which allowed us a day to visit the Bellavista Cloud Forest Reserve near Pichincha. Properly called a pre-montane/subtropical rain forest this preserve is at an altitude of roughly 3000 meters. Bellavista offered a chance to see hundreds of plant species including tree ferns, orchids, bromeliads, philodendrons, leaves big enough to frame your face, begonias, ficus, liverworts, and many others. Living amongst all the greenery were a variety of birds including doves, toucans, tucanets, tanagers, and more hummingbirds than I normally see in a year all crowded around the same feeder. We also came across a very large species of earthworm which had setae that were on the edge of being painful as we posed for pictures.

The Galapagos Islands lie 600 miles off the coast of Ecuador and there was a certain amount of relief as we broke through the clouds and spotted land. Flying above the islands you get a sense of how arid these islands are

even though they lay along the equator. From the airport we were taken by bus then water taxi to our boat, the *Floreana*. It was to be our floating home for the next 7 nights as we went from island to island hiking the well marked trails to view the organisms. Our pictures tell the rest of the story much better than I ever could.

Now that you have experienced some of what TABT participants saw in the Galapagos, please consider joining TABT for our next expedition to Costa Rica. The trip will be June 19-July 1, 2008. Details about cost and signing up can be found on the TABT Web page (www.texarkanacollege.edu/~mstorey/TABT/index.html) or from Alton Biggs (altonb@ix.netcom.com).

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TABT is also proud to host our second annual Mini-conference at the University of Texas Marine Science Institute at Port Aransas from October 19-21, 2007 (housing is included for the evening of the 18th). The focus of this year's conference will be adaptations to the coastal environment and includes a bay boat trip, visits to contrasting beach ecosystems, and discussions with UTMSI scientists. Registration information is included in this edition of *The Nucleus* and can also be found on the TABT Web page.

Grab your conch shells and join us for CAST 2007 which marks the 50th anniversary of CAST. To mark this event affiliates have been asked to lead the opening ceremony of the exhibit floor. TABT members are asked to bring conch shells to blow as part of the ceremony. TABT also has a series of workshops and our annual luncheon on Saturday. Workshops are included with the cost of registration. Luncheon tickets can be purchased during registration which is also a great time to renew your TABT membership. There are also still a few TABT-endorsed fieldtrips which require presiders who take part in the field trip for free. Contact Jennifer Jordan-Kaszuba for more information.



Jennifer Jordan-Kaszuba, TABT President
Jordan@esc13.txed.net

TABT Goes To Costa Rica

You are invited to a 13-day adventure to see the natural parks and tropical forests of Costa Rica with TABT. For this trip TABT has chosen America's leading adventure travel company, The itinerary includes:

Day 1 – Depart U.S./Arrive San José

Day 2 – San José/Tilarán, view coffee plantation, relax in hot springs

Day 3 – Tilarán; kayak on Lake Arenal

Day 4 – Tilarán; float down Río Tenorio

Day 5 – Tilarán/Monteverde; discuss “Quaker Life”

Day 6 – Monteverde; hike in Monteverde Cloud Forest

Day 7 – Monteverde; visit a local school; home-hosted lunch; horseback through Monteverde Cloud Forest

Day 8 – Monteverde/Quepos; drive to Quepos; view crocodiles at Río Tarcoles

Day 9 – Quepos; Explore Manuel Antonio National Park; lunch in Quepos

Day 10 – Quepos/San Gerardo de Dota; family visit; horseback riding excursión

Day 11 – San Gerardo de Dota; search for quetzals at San Gerardo de Dota; trout fishing & cooking lesson

Day 12 – San Gerardo de Dota/San José; San José city tour; visit coffee finca

Day 13 – Return to the U.S.

Contact Alton Biggs (altonb@ix.netcom.com) or (903) 886-2240 for more information and to sign up.

TABT Thanks Our Corporate Sponsors

Carolina Biological Supply

Fisher Science Education

Flinn Scientific

George Seidel & Associates

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Holt, Rinehart, and Winston

Prentice Hall School Division

Sargent-Welch Scientific

Science Kit/Boreal Laboratories

Ward's Natural Science Establishment



Pilot Whate - Photo by Steve Judd

Green Sea Turtle - Photo by Steve Judd



Sunset - Photo by Randy Moore

Swallow-tail Gull - Photo by Randy Moore



Tree Fern (Bellavista) - Photo by Anita Gordon

Golden Rays - Photo by Anita Gordon

Galapagos Islands Web Sites of Interest

Steve Judd's photo page – <http://www.student.loretto.org/galapagos>

Bellavista Cloud Forest Preserve – <http://www.bellavistacloudforest.com>

Galapagos Conservancy – <http://www.galapagos.org>



Tree Opuntia- Photo by David Olson



Galapagos Marine Iguana- Photo by Jennifer Jordan



Waved Albatross - Photo by Jennifer Jordan



Galapagos Hawk - Photo by Jennifer Jordan



Buff-tailed Hummingbird (Bellavista Cloud Forest (above) and Galapagos Penguin (left) - Photos by Alton Biggs

All Galapagos photos copyright of owner.



Texas Association of Biology Teachers

TABT Mini-Conference 2007

University of Texas Marine Science Institute
Port Aransas, Texas

October 18-21, 2007



The Texas Association of Biology Teachers is sponsoring a Mini-Conference at the UTMSI at Port Aransas.

Agenda*

Thursday, October 18, 2007

Arrive evening – dinner on your own

Friday, October 19, 2007

Breakfast – included

Boat trip aboard the research vessel, *Katy*

Lunch – included

Study of local ecosystems

Dinner – included

Speaker or Video

Saturday, October 20, 2007

Breakfast – included

St. Jo Island Excursion – uninhabited island with natural beach

Lunch – included

Groomed Beach Excursion or other local ecosystem

Dinner - on your own

Sunday, October 21, 2007

Breakfast – included

TABT Share-a-thon and updates

Noon – depart for home – lunch on your own



Cost of the conference is \$150 and includes boat trip aboard the *Katy*, ferry to St. Jo Island, three nights lodging in UTMSI dorms, meals as indicated above, one year membership in TABT and a TABT T-shirt.

Space is limited to the first 25 individuals to submit payment.

*Agenda is subject to change without notice due to weather, equipment, scientific opportunities, watching a drilling platform be brought in through the ship channel, etc.



Texas Association of Biology Teachers

Mini-Conference, October 18-21, 2007, at UTMSI, Port Aransas
Registration Form
(please print)

Name _____ Sex Female Male

School Name _____ District _____

School Address _____

School phone (____) _____ School Fax (____) _____

Home address _____

Home phone (____) _____

E-mail (all correspondence will be sent via e-mail)

T-shirt size _____ TABT Member already? Yes No

Dietary restrictions/considerations _____

Health concerns/allergies _____

Emergency contact _____ Relationship _____

Emergency contact phone (____) _____

Roommate preferences (please remember this is dormitory style housing with multiple roommates and bunk beds, single rooms are not available) _____

Sunday morning of the conference will involve a share-a-thon where each participant brings an activity, lesson, cool demo idea, etc (10 minutes max) to share with the group. What do you intend to bring to share?

Space is limited to the first 25 participants to submit payment. Refunds are only given in the event you can not attend and your space can be filled.

**Make check out to TABT for \$150 (sorry no Purchase Orders) and mail along with this completed form to:
Jennifer Jordan (Attn: TABT), 1513 Cherokee Run, Pflugerville, TX, 78660**

For TABT Use Only:

Paid _____

Room _____

Confirmation e-mail sent _____

Special consideration _____

Cells and Organelles

by Debbie Richards

Name: _____ Period: _____ Date: _____

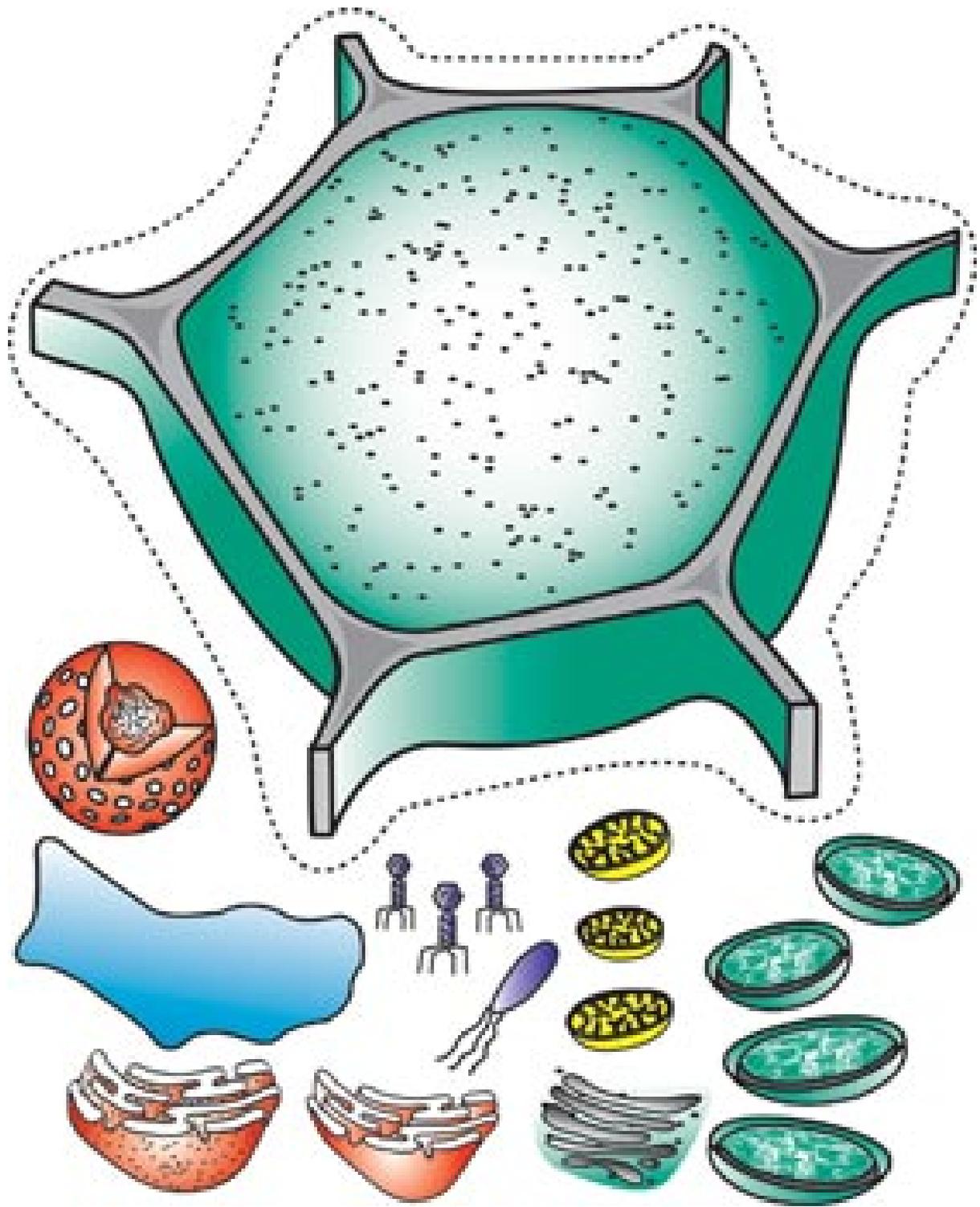
Part I

1. Cut out the pieces of your cell model. Place them in the cell.
2. Label the cell parts using the labels provided.
3. Be ready to explain:
 - a. Is the cell a plant or an animal cell? How do you know?
 - b. Is the cell a prokaryotic cell or a eukaryotic cell?
 - c. Is the cell from an autotrophic or heterotrophic organism? How do you know?

Part II

Which cell organelle is associated with each of the following functions?

- Stores genetic material
- Forms ATP
- Captures solar energy
- Energy production
- Contains DNA
- Maintains homeostasis
- Stores water in plant cell
- Protein synthesis
- Site of replication
- Site of photosynthesis
- Carries out respiration
- Contains chromosomes
- Place this formula where this reaction occurs:
$$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{ENERGY RELEASED (ATP)}$$
- Place this formula where this reaction occurs:
$$6\text{CO}_2 + 12\text{H}_2\text{O} + \text{ENERGY USED (SUNLIGHT)} \rightarrow 6\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O}$$

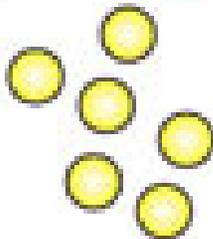
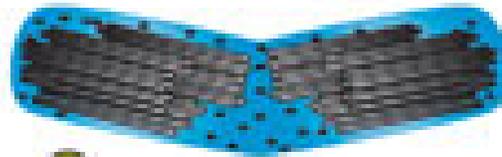
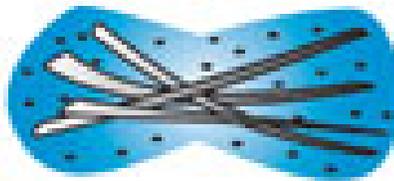
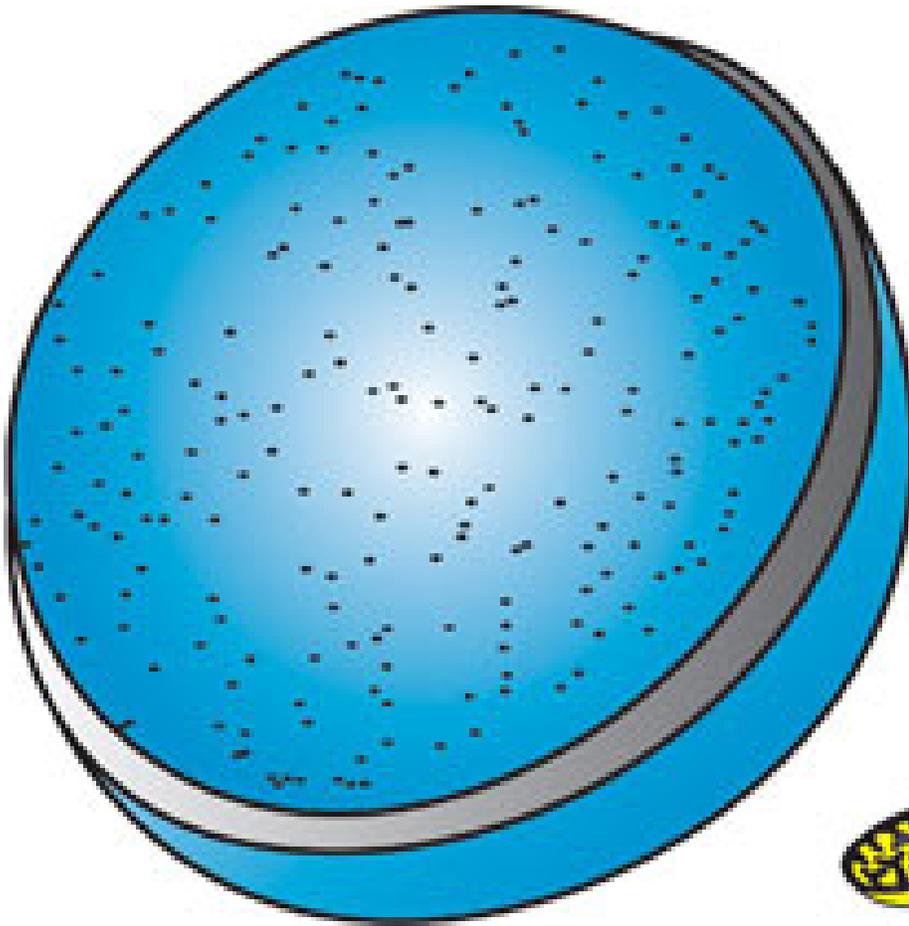


Labels

cell membrane
 central vacuole
 nucleus

mitochondria
 chloroplast
 Golgi body

rough endoplasmic reticulum
 smooth endoplasmic reticulum
 cell wall



Labels

Mitochondria

Ribosome

Endoplasmic Reticulum

Golgi

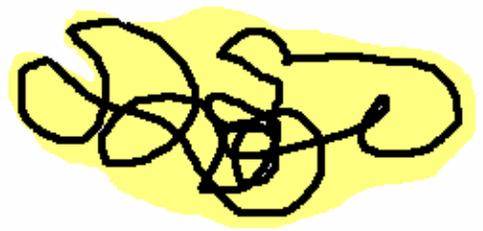
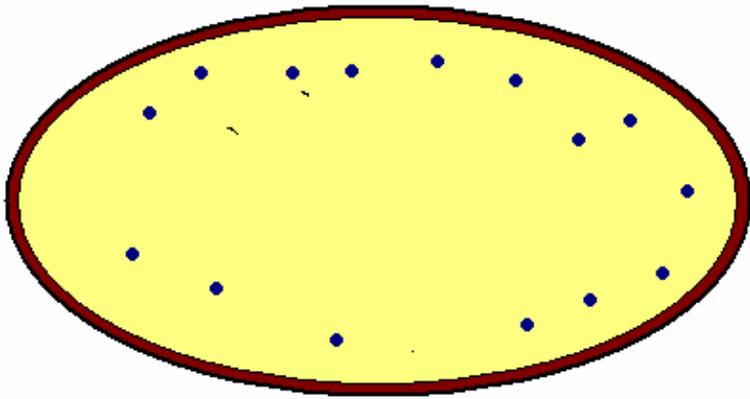
Cell Membrane

Smooth endoplasmic reticulum

Cytoskeleton fibers

Lysosome

Nucleus



Labels

Flagella

Ribosomes

Circular Chromosome

Join NABT! National Association of Biology Teachers

MEMBERSHIP APPLICATION

Yes, I want to join the National Association of Biology Teachers (NABT) and receive all member benefits, including:

- 9 issues of *The American Biology Teacher*
- ABT Online supplements
- weekly electronic issues of *News & Views*
- conference and publication discounts
- and more!

Dr./M _____

School/Org. _____

Mailing Address _____

City _____

State _____ Zip _____

Province _____ County _____

This is my home business address.

E-mail Address _____

Fax _____

Type of Membership

- FULL MEMBER** \$79/yr
- FOREIGN MEMBER*** \$119/yr (U.S. check or international money order only)
- STUDENT MEMBER** \$39/yr (open to regularly matriculated students not in full-time employment)

Signature of faculty member required below:

SPOUSE MEMBER \$33/yr

(when accompanied by an active membership)

- SUSTAINING MEMBER** (\$750/yr)
 - ORGANIZATIONAL MEMBER** (\$149/yr)
 - LIFE MEMBER** (one payment): Ages 21-29: \$1250; 30-39: \$1000; 40-49: \$850; 50-59: \$600; 60+: \$400
- *U.S. rates apply to citizens of Canada and Mexico.*

NOTE: \$48 of membership dues goes toward a subscription to *The American Biology Teacher*, for each year joined, except spouse members, in which case only the sponsoring active member receives a subscription to be shared by the two persons.

Professional Information

Please complete the following to help NABT better serve your needs:

1. Professional Class

- Biology Teacher
- Department Head
- Supervisor/Administrator
- Teacher Educator
- Student
- Other _____

2. Teaching Level

- Elementary
- Middle/Junior High
- High School
- Two-Year College
- Four-Year College/University
- Other

3. Interest in NABT Sections

- Elementary/Middle School Section
- High School Section
- Two-Year College Section
- Four-Year College Section
- AP Biology Section
- Role & Status of Women in Biology Education
- Multicultural Affairs Section
- Retired Section

4. Do not provide my name & address to other companies

Payment Method

NABT accepts checks drawn on U.S. banks and international money orders (payable to NABT), MasterCard, VISA, and Purchase Orders or join online at www.nabt.org.

- Check Purchase Order # _____ *(please attach)*
- MasterCard VISA

If paying by credit card, please complete the information below:

Acct. # _____

Expiration date _____

Card holder _____

Signature _____

RECRUITED BY: TABT, Alton L. Biggs

Complete and return to:

National Association of Biology Teachers
P.O. Box 791048, Baltimore, MD 21279-1048
FAX (703)264-7778



Texas Association of Biology Teachers
c/o Alton Biggs, Computer Records Clerk
2006 Creekview Drive
Commerce, Texas 75428-3047



Membership Application (Please Print All Information)

Name: _____ Telephone: (____) _____

Home Street Address, City, State, Zip: _____

E-mail address (*very important*): _____

Type of membership: Active (\$10) Student (\$5) Retired (\$5) Life (\$250)

Please complete the following to assure balanced representation in planning TABT activities

1. Professional Class (**Check one only**)

Biology Teacher Department Chairman Curator/Interpreter
 Supervisor/Administrator Teacher Training Student
 Other _____

2. Male Female (**OPTIONAL**)

3. Have you ever received the OBTA? No Yes If yes, what year? _____

4. Number of years teaching? _____

5. Organizational Class (**Check one only**)

Elementary Middle/Junior High Secondary College/University Zoo/Aquarium
 Business/Institution Other _____

6. Special Interests (**Check no more than 2**)

Cellular/Molecular Botany/Plant Science Laboratory Science Reproduction/Evolution Zoology
 Computer Instruction Environmental Biology Teaching Materials Other _____

7. I am also a member of (**Check all that apply**): National Association of Biology Teachers (NABT)

National Science Teachers Association (NSTA) Science Teacher Association of Texas (STAT)

Please send membership application and dues to: Alton L. Biggs, TABT Records Clerk
2006 Creekview Drive, Commerce, Texas 75428-3947

Make all checks payable to: Texas Association of Biology Teachers