

Kansas Association of Biology Teachers

Volume 37 Number 3 — September 1996



NEWSLETTER

Calendar & Activities

Please mail, e-mail or phone meeting dates and other items of interest to biology teachers to John Wachholz, 2311 Applewood Lane, Salina, Kansas 67401-3707, 913- 825-7742 (Home) 913 - 826-4751 (School). E-Mail: jwachholz@midkan.com

| Date | Event |
|-------------------------|--|
| November 2-3, 1996..... | KS Herp. Society - Annual Meeting FHSU, Hays |
| April 3-6, 1997..... | National Science Teachers Convention - New Orleans, LA |
| April 11, 1997..... | KS Academy of Science - Annual Meeting - KSU, Manhattan |
| April 25-27, 1997..... | KS Ornithological Society - Spring Meeting - KSU , Manhattan |
| May ?, 1997 | KABT Spring Field Trip Meeting - Northern Red Hills |
| November 2-3, 1996..... | Kansas Herpetological Society, Fall Meeting, Lawrence H.S. |
| Spring '97..... | KABT Spring Field Trip - Gyp Hills |
| Fall '97..... | KABT Fall Meeting - Fort Hays State University |

More Information On KABT Spring Field Trip In Your Next Newsletter

Your membership **expiration date** can be found on your mailing label. All dues are now payable on September 1st of each year. If an envelope was enclosed with your newsletter your membership has expired. Please use the envelope to mail your dues and the other information requested. If you send your e-mail address, you will receive a notice that your dues and registration have been received. A registration form appears on the last page of this newsletter.

"It is a monstrous abuse of the science of biology to teach it only in the laboratory---Life belongs in the fields, in the ponds, on the mountains, and by the seashore.."

James G. Needham

PUBLISHING DATES FOR NEWS- LETTER

The newsletter is published during the months of September, November, February and April. Manuscripts must reach the editor by the 15th day of the previous month. The KABT Newsletter includes abbreviated minutes of the official meetings, announcements of future activities, brief news notes, and other brief items of interest to biology teachers. Send your contributions to John Wachholz, Editor, 2311 Applewood Lane, Salina, KS 67401 (913) 825-7742. You may send you information for the newsletter to jwachholz@midkan.com.

Newsletter & Journal Information Needed

Articles are needed for the newsletter. Please help with the newsletter. The most helpful occurrence would be for all individuals sending information to the newsletter to send it via PSINet, INTERNET: wachhol.ksuvm.ksu.edu or on a disk. If you send it on a disk, any format is acceptable. ASCII text is easy for me to work with. Your help is appreciated. (PC, Mac, Apple - just send it!) Articles for the Kansas Biology Teacher should be sent to John Richard Schrock, editor KBT, Division of Biology, Box 50, Emporia State University, Emporia, KS 66801-5087. If your dues are not up to date you will no longer receive the Kansas Biology Teacher.

Outstanding Biology Student Certificates

These are available for students who you feel have completed a biology course under you and have shown ding achievement. Send your name and address to KABT Student Certificates, 2311 Applewood Lane, Salina, KS 67401-3707.

Please use these certificates as valuable awards for outstanding students.

NABT Contact Information

Address: 11250 Roger Bacon Drive #19, Reston, VA 22090-5202

Phones: 703-471-1134; 800-406-0775

Fax: 703-435-5582

E-mail: NABTer@aol.com

Try Out These Web Sites!

<http://www.phys.ksu.edu:80/~gene/>

This relates to the GENE Project. Lots of good information plus you can download the UV Risk Program.

<http://bru.usgmrl.ksu.edu/beeman/tribolium.html>

Learn all about flour beetles.

This is an announcement of the World Wide Web Home Page for the Kansas Academy of Science. To access this home page point your web browser to: <http://www.wuacc.edu/kas>

The home page for the Kansas Academy of Science will be the starting point for finding information about the Academy and its major divisions. This home page will contain two types of information. The first type will be information about the Academy. For example, what is the Kansas Academy of Science, information about KAS meetings, field trips, membership, and additional information normally distributed by traditional means (e.g. newsletters).

The second type of information will be links -connections on the Internet -to locations where information will be maintained by special interest groups of the Kansas Academy Science.

Over the next few years we hope to add home pages for special interest groups like Life Sciences, Physical Sciences, Mathematics and Computer Science, Engineering, Earth Sciences, et. al.. Each of these areas will be divided into fields. For example the Physical Science area might be subdivided into Physics and Chemistry. These home pages will be maintained by members of the scientific community of Kansas. If any member of the academy has an interest in editing one of these special interest home pages please notify via e-mail the webmaster at xxkasweb@acc.wuacc.edu.

At the annual meeting in March there will be a tutorial on how to use the world wide web and an primer on how to create a home page for the web.

The intent is to create a geographically distributed pool of information that will be of interest to the scientists of Kansas and the world. This information will be accessible to anyone anywhere who has access to the World Wide Web.

Dr. Robert J. Boncella

Washburn University

KAS Webmaster

Proposed Constitutional Changes

The Board of directors of KABT would like to

propose the following changes to the Constitution. It is our intent to increase input and participation of the membership at this critical time for biology teaching. We will discuss these changes at a meeting during the spring field trip. Please come and join the discussion.

Article II

Section 1. The officers of the KABT shall be of two kinds, elective and appointive.

- a. The elected officers shall be President, President - elect, Vice - President, Secretary, Treasurer, six District Directors, **and two at-large Directors**
- b. The appointed officers shall include the Editor of the KABT Newsletter and the Historian.

Section 3. The terms of office for the President, President - elect, Vice - President, Secretary, Treasurer, six District Directors, and two at-large Directors shall be for two years.

Section 6

- b. The Historian shall serve as a consultant, archivist, historian, and shall assist the Executive Council as necessary.

Article III .Executive Council

Section 1. The Executive council shall consist of the President, Past President, President-elect, Vice - President, Secretary, Treasurer, six District Directors, and two at-large Directors.

Pawnee Grasslands Trip To Colorado

This was a good trip. Special thanks to all who attended. The prairie falcons were great. The mountain plovers put on a good display. The ecology of the short grass prairie is most interesting. The best photographs from any trip are still in your mind.

From Your President

As we go back to school, I think it is important to think about what we do as biology teachers and how very important it is. Each day our students are exposed to a variety of thoughts and ideas. In the harsh climate of today's public discourse, it is amazing how many people seem to have a direct pipeline to absolute truth. In our current atmosphere of talk show intellect, everyone has a valid opinion. Rarely do we ask the source of their information nor do we explore the nature of their truth.

Call-in talk shows have floods of comments on a large range of subjects, from politics and the economy to our sex lives. Callers and guests from all over the country, usually identified only by a first name, feel free to express the truth of an issue as they see it. We seem to be trying to form a truth by consensus. If we can convince enough other people to believe the same things that we do then we have discovered truth. As long a group of us all believe the same thing, it must be the truth.

We are losing the drive to ask the source of our truths. What is the truth, and how things really work are pushed aside. In part because we do not have all the answers and in part because it is easier to pull people's emotional chains than to take the hard road of discovery. How do we find the true nature of things and avoid the lack of understanding that goes with cheap emotionalism?

Some believe in an absolute truth based on faith. Faith is defined as belief in the absence of evidence. This truth is based on an all knowing creator who reveals truth. In this view we receive truth from a higher source.

This, however, is only one view of truth and a creator. Others feel that truth can be developed instead of being received. Some scientists, who are often thought to be in conflict with religious truth, are in fact driven by their faith. They feel humans were made in the likeness of God and humans are rational, therefore God, must have made a rational universe that is open to investigation. Many of these scientists felt that a greater understanding of the creation would lead to a deeper understanding of the creator.

Another road to truth is reflected in science. Project 2061 is a science education reform effort. At the beginning of the project the first issue dealt with was "Science as a Way of Knowing." It is the first chapter in the book *Science for All Americans*. In this view the standards of scientific modeling and evidence are used for understanding the ways thing work. Understanding the natural world will provide us the answers.

I am a biologist and I use science to model and understand how things work. I want to be able to look around me and understand how and why things happen. Even more important, given a set of circumstances, I want to make predictions about the way things are going to happen and then have them turn out that way. It is very empowering and freeing to have this level of understanding. While beliefs are very motivating to my behavior, they only pro-

vide a loose metaphor to the universal truths I am after. Emerson once wrote "To the dull mind all nature is leaden. To the illuminated mind the whole world burns and sparkles with light." I seek that illuminated mind.

As we pursue public discourse, we need to think and analyze. People who attempt to manipulate us with shallow emotional arguments should be dismissed from the discourse. People who are not actively pursuing truth should be dismissed from the discourse. We must constantly examine the nature of truth and try to find if it is universal. Does it really explain the way things work or does it follow the old advertising adage, if you say something enough times, people will believe it. We all deserve to have lives that sparkle with light. Being a life long learner will help that happen.

Teachers Needed to Test Global Lab Curriculum

Global Lab is an international science program that engages students in investigative science. The program leads students through observing and monitoring a local study site, and on into telecommunications-based collaborations, data sharing and data analysis with a world-wide network of students.

The current Global Lab materials were developed by TERC under grants from the National Science Foundation. TERC has received a new grant to adapt these materials into a year-long high school course, and to achieve publication, distribution and widespread, world-wide, use of the materials.

The Global Lab Project is looking for teachers of students of ages 13-15 to pilot elements of the new Global Lab course during the 1996-97 school year. Through interdisciplinary (Biology, Chemistry, Physics, Geology) investigations of local and global environments, the course will enable students to explore major science concepts and develop research skills and strategies. Students will use state-of-the-art instrumentation for collecting data in the field and lab; they will use telecommunications and the World Wide Web to collaborate with their peers around the world.

We are seeking teachers or teams of teachers with a range of experience in inquiry-based learning, telecommunications, and integrated science. Classrooms will need access to the Internet. Curriculum materials, instrumentation and telecommunication support will be provided.

We understand that many sites, particularly international sites, will not be able to implement immedi-

ately all of the material Global Lab will be making available. We encourage selected sites to implement those parts of the course that are valuable to them and to participate in the GL discussions. We ask only that [1] sites tell us what they have chosen to do and why, and [2] provide feedback on the materials they have used and the activities they have participated in.

The Global Lab Project
TERC (Technical Education Research Centers)
2067 Massachusetts Avenue
Cambridge, MA 02140
Phone: 617-547-0430
FAX: 617-349-3535

For more information, visit our Web site at
<<http://hub.terc.edu/terc/gl/global-lab.html>>
or contact: Barbara Tinker at TERC.
Internet: barbara_tinker@terc.edu

How the Manifest Destiny Philosophy Created the Kansas ~ Nebraska National Forests

Information taken mostly from the July 25, 1995 Environmental History Course lecture by Douglas Hart from Iowa State University.

We aren't the first to think they knew the environment. Those who moved out on the plains in the 1800's thought they also "knew" the environment.

1800's- Society viewed the environment as something that should be changed. This philosophy of changing the environment to meet man's needs is called Manifest Destiny. Policy makers in Washington basically thought they could change the plains by making it like the "east". Do this by planting trees. Trees-> Increase rainfall by transpiration and then condensation. European research indicated that trees could increase rainfall (Mormon settlements also seemed to indicate this.)

1873 -Fines Hitchcock (Timber Culture Act)-180 acres free if planted 40 acres of trees and keeping them alive for 10 years.

1878 -Congress said you only had to plant 10 acres of trees to get the land

1890 -Department of Agriculture created the new division of "Forestry".

Nebraska

Charles Edwin Bessy (Member of New Forestry Division in Washington) -1891-Plant a quarter section of trees (especially coniferous trees)

— In one year the trees died

— 10 years later the government tried again

—Sand Hills Reconnaissance Survey

Team - Went out to see how many trees had survived. They also wanted to try and determine how beneficial the trees would be in changing the environment and what the possibility was for success.

1897 -Timber Culture Act -gave farmers the land even if they only kept the trees alive for 5 years.

1903 -Nebraska National Forest planted 30,000 acres of Red Cedar and Ponderosa Pine. This is the only forest that is man made. It is near the Neosha River.

1906 -Trees died. They found that the trees needed to come from Nebraska, so they replanted.

1910--A prairie fire wiped out all but 10,000 acres. They replanted once again.

1911 -Kincaid Act -This legislation opened 10,000 acres to cattlemen and settlers to pacify them so they wouldn't bother the National Forest.

1965 -A fire destroyed 11,000 acres of trees

=====

Kansas

1905 -Kansas tried to establish a 30,000 acre National Forest near Garden City along the Arkansas River. Kansas planted Deciduous Trees (Different from Nebraska)mostly Huckleberry and Mulberry trees.

1905 -Fire destroyed 30,000 trees

KANSAS NATIONAL FOREST -1,000 acres of trees

1908 -Permanent Staff and establishment of nursery

1911 -The drought of that year killed all the trees. President Wilson abolished the Kansas National Forest.

1911 -Moses Kincaid-created a legislation for free trees for anyone who wanted them.

1927 -Kincaid's project was terminated. However, 2.5 million trees had been planted on 13,000 farms.

1927 -Clark McNary Act-It expanded the forestry program. It gave money to the state for planting trees in windbreaks.

1930's-The drought and Depression killed the program.

1933 -Roosevelt asked the forestry service to look into tree planting to control wind erosion.

The forestry service recommended that shelter belts be made 1 mile apart running North and South in a 100 mile zone between Texas and Canada.

1934 -Forestry Service revised the plan to run shelter belts East and West to stop North and South winds.

1934 -Roosevelt signed the Shelter Belt Project.

1935 - 1,000 miles of shelter belts were planted. The original plan was to not go west of the 91 meridian and to keep in the areas with 16" precipitation in the North, and with 22" precipitation in the South.

1935 -Only 125 miles were planted in Oklahoma. In Kansas the director (Charles Scott) said that he would plant anywhere someone wanted.

-125 mile wide region was planted in Kansas.

-The Forest Service sent land examiners out to select land and convince farmers to put aside land for shelter belts.

-6.5 million trees were planted on 13,000 farms.

1937 -Farmers and the government were to share the cost.

1937 -Congress increases shelter belt band to 200 miles wide.

Prairie states forestry project = Shelter belt project

1942 -Legislators merge Shelter Belt project to Soil

Conservation projects to gain funding.

1942 -1,700 miles of shelter belts were planted.

Over the next eight years:

-19,000 miles of shelter belts planted on 33,000 farms. 2.5 million trees were planted making the shelter belt program a success.

-73% of the shelter belts were in good condition.

Submitted by Pat Lamb

A Comedy of Errors

Source: The Internet

Before giving a blood transfusion, find out if the

blood is affirmative or negative.

SPACE, the physical world, the human body, chemistry, plant life, medicine —these are just a few of the subjects under the broad umbrella of science. This month, we focus not on scientific facts themselves, but on students' sometimes hilarious misunderstandings or misinterpretations of those facts. This sampling was sent to us at AskPopSci@aol.com.

When you breathe, you inspire. When you do not breathe, you expire.

For head cold: Use an agonizer to spray the nose until it drops in your throat.

To collect fumes of sulfur, hold a deacon over a flame in a test tube.

When you smell an odorless gas, it is probably carbon monoxide.

Nitrogen is not found in Ireland because it is not found in a free state.

Water is composed of two gins, Oxygen and Hydrogin. Oxygen is pure gin. Hydrogin is gin and water.

Three kinds of blood vessels are arteries, vanes, and caterpillars.

H₂O is hot water, and CO₂ is cold water.

The moon is a planet just like Earth, only it is even deader.

Artificial insemination is when the farmer does it to the cow instead of the bull.

Dew is formed on leaves when the sun shines down on them and makes them perspire.

A super-saturated solution is one that holds more than it can hold.

Mushrooms always grow in damp places and so they Look like umbrellas.

The body consists of three parts— the brainium, the borax, and the abominable cavity. The brainium contains the brain, the borax contains the heart and lungs, and the abominable cavity contains the bowls, of which there are five— a, e, i, o, and u.

The pistol of a flower is its only protection against insects.

The alimentary canal is located in the northern part of Indiana.

The skeleton is what is left after the insides have been taken out and the outsides have been taken off. The purpose of the skeleton is something to hitch meat to.

A permanent set of teeth consists of eight canines,

eight cuspid, two molars, and eight cuspidors.

The b'des are a fight between the Earth and moon. All water tends toward the moon, because there is no water in the moon, and nature abhors a vacuum. I forget where the sun joins in this fight.

A fossil is an extinct animal. The older it is, the more extinct it is.

For fainting: Rub the person's chest or, if a lady, rub her arm above the hand instead. Or put the head between the knees of the nearest medical doctor.

Equator: A menagerie Lion running around Earth through Africa.

Germinate: To become a naturalized German.

Liter: A nest of young puppies.

Magnet: Something you find crawling all over a dead cat.

Momentum: What you give a person when they are going away.

Rhubarb: A kind of celery gone bloodshot.

Vacuum: A Large, empty space where the pope lives.

Respiration is composed of inspiration and then expectoration.

To remove dust from the eye, pull the eye down over the nose.

For a nosebleed: Put the nose lower than the body until the heart stops.

To prevent contraception: Wear a condominium.

Blood flows down one leg and up the other.

The beguiling ideas about science quoted here were gleaned from essays, exams, and class room discussions. Most were from 5th and 6th graders. They illustrate Mark Twain's contention that the 'most interesting information comes from children, for they tell all they know and then stop.' Question: What is one horsepower? Answer: One horsepower is the amount of energy it takes to drag a horse 500 feet in one second.

You can listen to thunder after lightening and tell how close you came to getting hit. If you don't hear it you got hit, so never mind.

Talc is found on rocks and on babies.

The law of gravity says no fair jumping up without coming back down.

When they broke open molecules, they found they were only stuffed with atoms.

But when they broke open atoms, they found them stuffed with explosions.

When people run around and around in circles we say they are crazy. When planets do it we say they are orbiting.

Rainbows are just to look at, not to really understand.

While the earth seems to be knowingly keeping its distance from the sun, it is really only centrifuging.

Someday we may discover how to make magnets that can point in any direction.

South America has cold summers and hot winters, but somehow they still manage.

Most books now say our sun is a star. But it still knows how to change back into a sun in the daytime.

Water freezes at 32 degrees and boils at 212 degrees. There are 180 degrees between freezing and boiling because there are 180 degrees between north and south.

A vibration is a motion that cannot make up its mind which way it wants to go.

There are 26 vitamins in all, but some of the letters are yet to be discovered. Finding them all means living forever.

There is a tremendous weight pushing down on the center of the Earth because of so much population stomping around up there these days.

Lime is a green-tasting rock.

Many dead animals in the past changed to fossils while others preferred to be oil.

Genetics explain why you look like your father and if you don't why you should.

Vacuums are nothings. We only mention them to let them know we know they're there.

Some oxygen molecules help fires burn while others help make water, so sometimes it's brother against brother.

Some people can tell what time it is by looking at the sun. But I have never been able to make out the numbers.

We say the cause of perfume disappearing is evaporation. Evaporation gets blamed for a lot of things people forget to put the top on.

To most people solutions mean finding the answers. But to chemists solutions are things that are still all mixed up.

In looking at a drop of water under a microscope, we find there are twice as many H's as O's.

Clouds are high flying fogs.

I am not sure how clouds get formed. But the clouds know how to do it, and that is the important thing.

Clouds just keep circling the earth around and around. And around. There is not much else to do.

Water vapor gets together in a cloud. When it is big enough to be called a drop, it does.

Humidity is the experience of looking for air and finding water.

We keep track of the humidity in the air so we won't drown when we breathe.

Rain is often known as soft water, oppositely known as hail.

Rain is saved up in cloud banks.

In some rocks you can find the fossil footprints of fishes.

Cyanide is so poisonous that one drop of it on a dogs tongue will kill the strongest man.

A blizzard is when it snows sideways.

A hurricane is a breeze of a bigly size.

A monsoon is a French gentleman.

Thunder is a rich source of loudness.

Isotherms and isobars are even more important than their names sound.

It is so hot in some places that the people there have to live in other places.

The wind is like the air, only pushier.

Research: Training Program

The National Museum of Natural History is offering ten-week summer internships in natural history research. The internships are exclusively for **undergraduate students** interested in a **career in systematic biology and natural history research**. Through the Research Training Program 24 - 30 outstanding students from around the world will be selected to participate in this intensive training opportunity at the Smithsonian Institution in Washington, D.C. Components of the Program include:

The Research Project. Under the guidance of a Smithsonian research scientist, **students will design and participate in all phases of a scientific study including gathering data, making observations, analyzing results, preparing information for publication in a scientific journal, and presenting the research project at a scientific meeting.** Examples of research projects are: description and publication of a new species, morphological or molecular analysis of a taxonomic group, and mineralogical or geo-

chemical study of a rock or mineral.

Lectures, Discussions, Workshops, and Field Trips. Additional activities are scheduled to provide students with information and experience outside their selected research topic. Through formal and informal lectures and discussions, Smithsonian staff share their research and work experiences with Program participants. Topics include: species concepts, measuring biological diversity, biogeography, cladistics, morphometrics, molecular systematics, paleoecology, forensic anthropology, global volcanism, and mass extinction's. Field trips to local sites and workshops hosted by Smithsonian experts are also included in the active schedule of events.

Laboratory Demonstrations and Collection Tours. Complementing the topics presented, **behind-the-scene tours of many Smithsonian collections and facilities are included.** The hands-on segment provides students a chance to interact one-on-one with scientific illustrators, collection curators, research scientists and laboratory technicians. Participants also learn how research collections are organized and maintained and how to use museum collections in research.

Resources Available. The NMNH collections include more than 121 million specimens of plants, animals, insects, fossils, minerals, marine organisms, and human artifacts. The Smithsonian library system totals over 1 million volumes including rare books, current journals and reprints from around the world. More than 600 staff including 110 doctoral level research scientists and 250 support staff are available for consultation and guidance.

Program Dates:

24 May: 1997 -2 August 1997

Award

A modest stipend, housing, and transportation allowance are provided to the participants.

Application Deadline

All application materials including application form, cover letter and two letters) of recommendation must be received before 1 **February** 1997

Notification Date Notification of acceptance or rejection will be mailed to all applicants: 8 March 1997

Research Training Program Information & application materials are located on our internet home page:

<http://www.nmah.sl.edu/nmahweb.html>

The same information and application materials are available by mail. If requesting information by

mail, print clearly, this is your mailing label. Include your name and address.

The National Museum of Natural History Research Training Program gratefully acknowledges the funding by The James Smithson Society, T.F.H. Publications, Inc.,

The Women's Committee of Smithsonian Associates, The NMNH Research Initiatives, The National Science Foundation -Research Experiences for Undergraduates Program

NABT Convention Set for Charlotte

The more than 300 presentations will include:

- On the Wings of Change -- Invitational Education: Challenge to Biology Teachers;
- Decline in the Southern Appalachians -- What's Happening in Our Forests?;
- Sea Monsters: Facts and Fantasies;
- Three Children from Serendip: A Look at the Three Most Important Patients of the 18th, 19th, and 20th Centuries;
- The Space Station -- Why and How We Are Building It;
- The Biology and Behavior of Killer Bees;
- Why Research Doesn't Have To Cure Cancer and Birth Defects To Be Important;
- Space Flight and the Immune Response;
- Scientific Literacy for All?;
- Molecular Pathogenesis of Sexually Transmitted Diseases;
- Mites, Mussels, and Maybem --There's Science in the Old Swimmin' Hole;
- The Wolf --Majestic, Proud, Often Misunderstood;
- The National Science Education Standards & Implications to Biology Teaching;
- Illusions and Humor for Biology Teaching; and
- Oysters on the Half Shell: How Safe Are They?

The 15 special workshop topics will include:

- Ethics, Dilemmas and Values: An Introduction to Bioethics in Life Science Introduction;
- Hands-on Simulation of AIDS/HIV-1 Detection;

- Teaching Biology "on a Shoestring";
- Human DNA Fingerprinting by the Polymerase Chain Reaction;
- Integrating Computers in the Biology Laboratory;
- Ecotechnology --Linking Biotechnology to Ecology;
- Investigative Laboratories for Teaching About the Nervous System; and
- Preservation of an Endangered Species.

Field trips will include:

- A View from the Top --Grandfather Mountain and the Blue Ridge Parkway;
- North Carolina Zoological Park;
- Carolina Biological Supply Company;
- Duke Power's Energy Explorium and Environmental Lab;
- Old Salem Moravian Village;
- James Cannon Research Center for clinical medicine;
- Genetic Design, Inc., a human identity testing laboratory;
- Riverbanks Zoo and Botanical Garden;
- The Biltmore Estate House and Garden tour;
- The Anne Springs Close Greenway;
- Discovery Place, a science museum;
- Winghaven Bird Sanctuary; and
- Riddle Mill Organic Farm and herbal home remedies workshop.

Founded in 1938, NABT is the only national association dedicated exclusively to biology and life science teaching. The nearly 8,000 members include science educators, science supervisors, scientists, and business and industry representatives — and they reach nearly one million students each year.

QUIZ CARD DISSECTIONS

Submitted by Ernie Brown -WaKeeney, Kansas

Do you hate to think about doing classroom dissections in biology because the students tend to get unruly?

Does your room resemble a zoo more than a place where learning is taking place ?

Do you feel that your students really appreciate

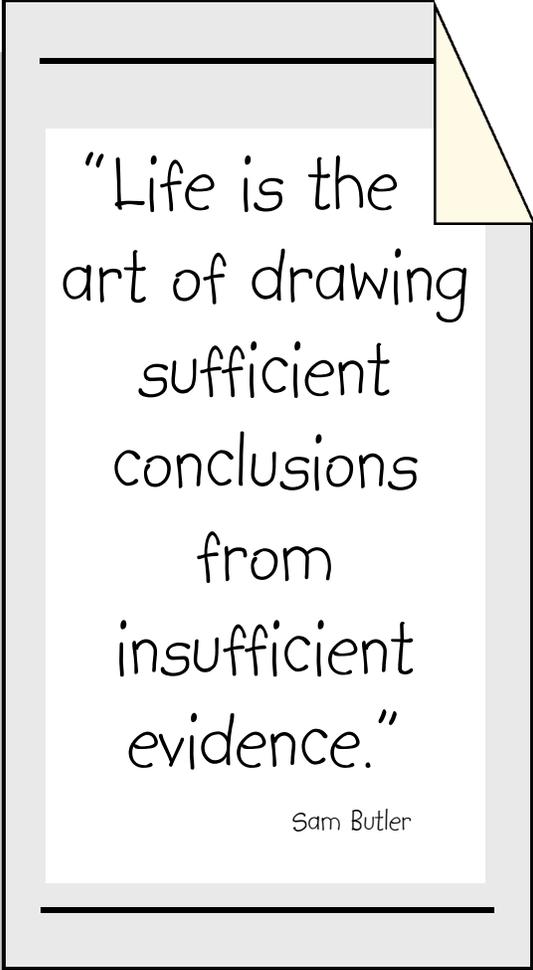
the inherent value of the life of the animal that they're dissecting?

Do they appreciate the fact that the animal they are dissecting died so that they might learn more about how it lived?

Respect for life and learning more about how the organisms lived are important objectives for any dissection. Too often specimens are viewed simply as "Pieces of meat" to glibly chop up and discard at the end of the class period.

I have enjoyed great success with a "Quiz Card" approach to dissections for the last several years. I feel that the students learn the material better and appreciate the total functioning organism more completely when they have finished their dissection. The technique can be used with any textbook or lab handout that supplements your dissection activity.

- While the students are reading the proce-



"Life is the
art of drawing
sufficient
conclusions
from
insufficient
evidence."

Sam Butler

cedure for the dissection, make a list of all the organs they are expected to locate and learn about on the chalkboard.

- Then, write the name of each organ on a separate 3x5 card and show the class your Deck of cards”.
- Have the students work in pairs. Either determined by the teacher or by the students themselves.
- After the students have completed the dissection and are confident they know the location and functions of each of the listed organs on their own specimen, they sign up on the chalkboard indicating they are ready for their quiz over the material.
- Beginning with the first pair of names on the list, take your 3x5 cards to their desk and "make a deal" with them for their quiz. I usually make the quiz worth 20 points total and have each student of the pair pull two cards (face down) from the deck.
- Each 5 point card identifies the organ that student must locate and discuss without help from his/her teammate.
- After the first student has completed his 10 point portion of the quiz, the second student then locates and discusses the two organs on the cards he has selected.
- Each member of the team receives the composite score from their individual quizzes.

You can vary this activity easily by making the quiz worth more or less than 20 points. You can let each pair of students make their own Deal" by picking any combination of cards/points that meet the total point for the quiz. Sometimes the students like to "go for broke" and pick one card for 10 points or pick five cards for 2 points each. When students realize that they are going to be required to locate and discuss specific organs in their specimen, they are much more diligent during the dissection. Procedures are read thoroughly and cuts are made carefully leaving organs in place as much as possible rather than being removed and piled on the dissector tray.

It is the responsibility of each team to conduct the dissection and learn the organs by working together. Even if one member of the team doesn't want to touch the specimen, he is still accountable for using a dissecting needle to point to the organs on his 3x5 cards. They can still be involved in the dissection by

reading the procedure to the person actually conducting the dissection. By combining the individual quiz scores for a total team score, the students work together to teach each other much better since they each have an investment in the final quiz score.

Free Materials From KABT

The National Association of Biology Teachers is distributing a limited supply of free copies of the publication Neuroscience Laboratory and Classroom Activities to interested U.S. educators and neuroscientists.

This lab manual was developed by teachers and neuroscientists working in partnership through NABT and the Society for Neuroscience and was funded by a grant from the National Institutes of Health.

To receive your complimentary copy of this lab manual, complete the form below and return it to NABT. When your name is received, NABT will send you your copy along with a list of neuroscientists in your geographic area who can help implement the labs. The free copies will be distributed on a first come-first served basis. (Delivery may take several weeks).

For more information, contact Mary Louise Bellamy at NABT, (703 471-1134/(800) 406-0775; e-mail NABTer@aol.com

Thoughts

In 1994, according to the United Nations, fishers worldwide spent \$124 billion to catch fish valued at only \$70 billion. The difference, a whopping \$54 billion, was covered by governments and hence, taxpayers.

— Worldwatch Institute

It is a curious situation that the sea, from which life first arose, should be threatened by the activities of one form of that life. But the sea, though changed in a sinister way, will continue to exist; the threat rather is to life itself. — Rachel Carson

Currently one-third of all the fish caught in the world are turned into fishmeal and fed to livestock.

— EarthSave

Number of the world's 17 major fishing areas that have reached or exceeded their natural limits: 17

Condition of Atlantic fishing grounds that sustained ten generations of fishers, according to the New York Times: Largely barren

Amount of decline in Atlantic fish stocks in past

15 years: cod, hadock and yellowtail flounder, 70%; grouper and snapper, 80%; bluefin tuna, 90%

Principal reason for decline: Overfishing

“The world’s fisheries are hurtling towards commercial extinction as high-tech supertrawlers become even more efficient at Hoovering up their prey — producing incalculable effects on the oceans’ health and threatening the future of millions of people worldwide.” — London Observer

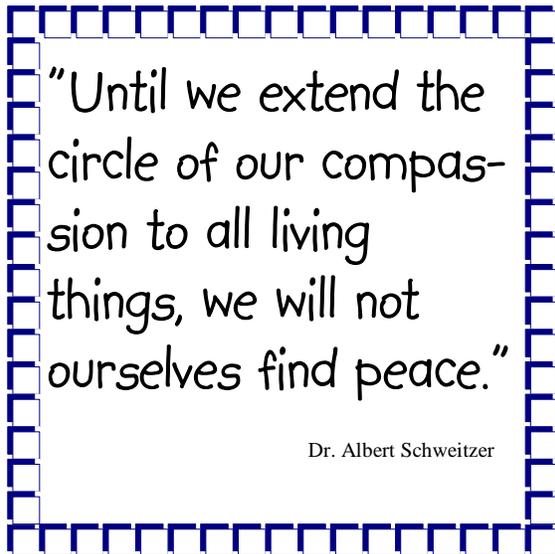
A man was out walking in the desert when a voice said to him, "Pick up some pebbles and put them in your pocket, and tomorrow you will be both sorry and glad."

The man obeyed. He stooped down and picked up a handful of pebbles and put them in his pocket. The next morning he reached into his pocket and found diamonds and rubies and emeralds. And he was both glad and sorry. Glad that he had taken some - sorry that he hadn't taken more.

And so it is with education.

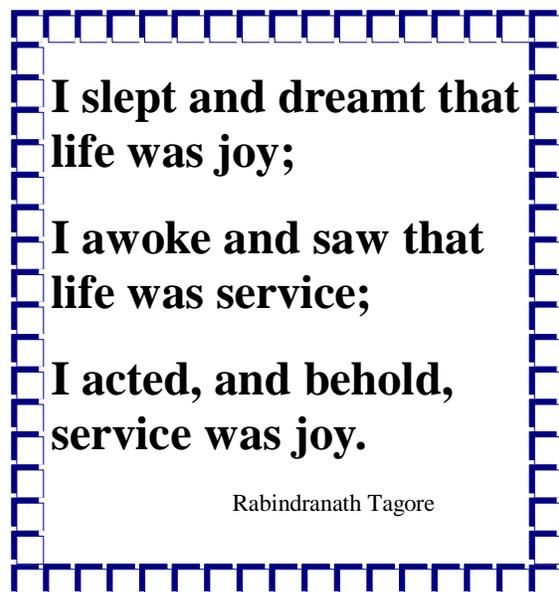
-- Reader's Di-

gest



“No human investigation can be called real science if it cannot be demonstrated mathematically.”

— Leonardo da Vinci



Kansas Association Of Biology Teachers
 1996 FALL CONFERENCE
 BIOLOGY LAWS & BIOLOGY LABS
 SCIENCE HALL 72, EMPORIA STATE UNIVERSITY
 SATURDAY, SEPTEMBER 21, 1996

Cost:

Members **FREE**

Non-members: \$10.00 (= KABT Membership)

- 7:30Registration for Early Arrivals
- 8:00 Steve Case, KABT President Welcome and Business Meeting
- 9:00 Loren Tompkins, E.S.U.School Law and the Biology Teacher
Or as Alfred Neuman Says: "What? Me Worry?"
- 9:30 Keith Sexson, KDWPState and Federal Wildlife Law and the Biology Teacher
- 10:00 Ann Mayo, Lyon Co. Health Department "There's a Fly in My Soup!:
The Biology Behind Environmental Health Inspection from Sewage Percolation to Radon"
- 11:00 Larry Martin, K.U.....Mesozoic Birds, Kansas, & Making Do With What You Have
- 12:00 Lunch On Your OwnMaps of Emporia Available
- 1:00 David Saunders, E.S.U.....Skeletons In the Closet: What We Can Learn from Bones
(Handouts)
- 1:30 Richard Keeling, E.S.U.....Demonstrations of Do-It-Yourself Gadgets,
Growing Slime Molds, and a Medicine Show Comparing Efficiency of an Enzyme Ver-
sus
an Inorganic Catalyst (handouts and slime mold take-a-way) SH 44
- 2:15 Laurie Robbins, E.S.U.Raising Non-Vascular and Primitive Vascular Plants
in the Classroom (fern prothalli samples take-a-way) Room 153
- 3:00 Rod Sobieski, E.S.U. Classroom Experiments with TV Light and *Tetrabymena*
- 3:45 Billie Johnson, E.S.U..... Update on Microbes
(handouts and culture take away)
- 4:30 Elmer Finck, E.S.U..... Slides from the Mammal Slide Library

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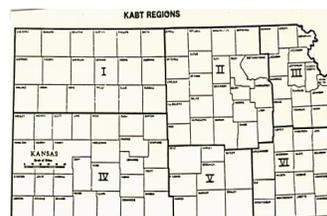
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Give us this day our daily calcium propionate (spoilage retarder), sodium diacetate (mold inhibitor), monoglyceride (emulsifier), potassium bromate (maturing agent), calcium phosphate monobasic (dough conditioner), chloramine T (flour bleach), aluminum potassium sulfate acid (baking powder ingredient), sodium benzoate (preservative), butylated hydroxyanisole (antioxidant), mono-isopropyl citrate (sequestrant); plus vitamins A and D.

Forgive us, O Lord, for calling this stuff BREAD.

J. H. Reed

KABT Membership Application - Renewal - Form

Name: _____
(Mr.-Mrs.-Ms.-Dr.-Miss) First Name Last Name

Mailing Address: _____

City: _____ State: __ Zip: _____ - _____

School/Institution: _____

Position: _____

City: _____ State: __ Zip: _____ - _____

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FAX: (____) ____ - _____ Internet Address:
_____@_____

Enclosed Dues For KABT \$10.00 / Year - Life Membership Available For \$200
Yearly Due Date is September 1st. - Make Check Payable To KABT - Tax ID #: 48-0945206

Send Dues & Information To:

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