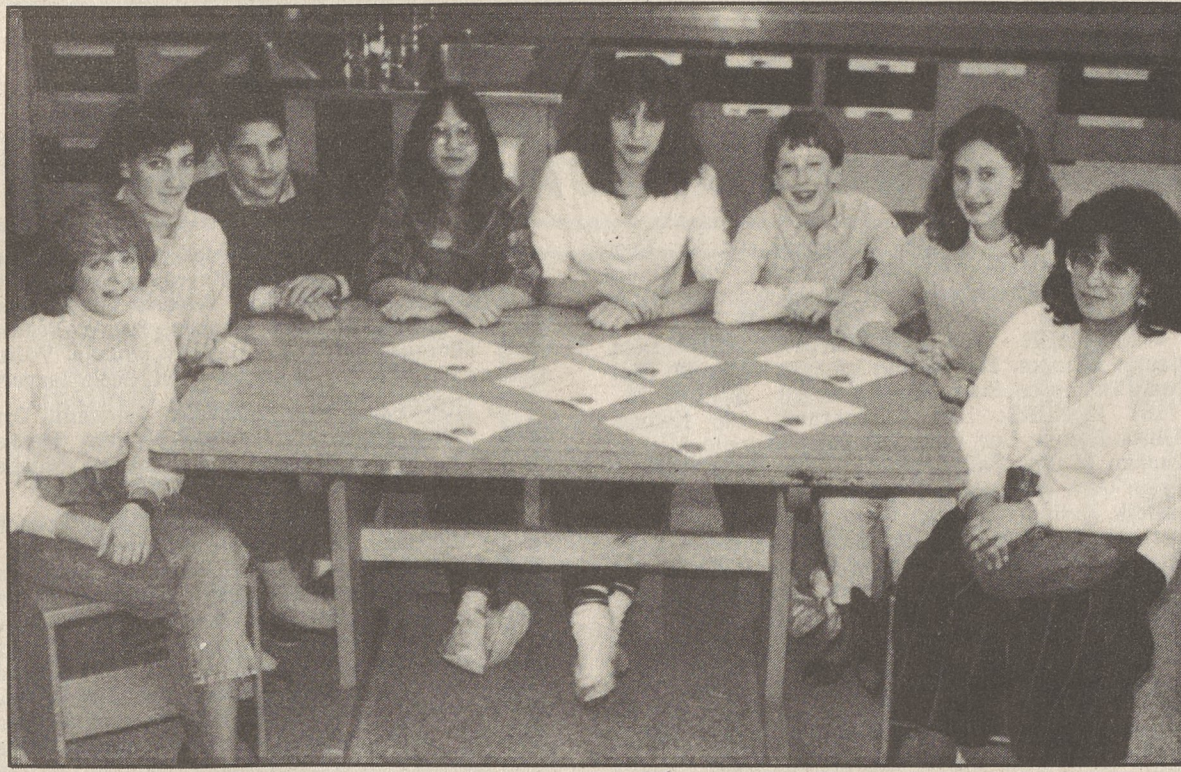


School

Common Science

Joe Jeffers, Ph.D.



Work exhibited

Several students from the Dallas Junior High School have their art work in the current show at the Sordoni Gallery, Wilkes College. Pictured are the key and honorable mention winners. From left, Kerry Burke (key), Jennifer Spear (key and honorable mention), Todd Barket (honorable mention), Lynn Baluh (honorable mention), Aria Pierson (key), Ray Russin (key), Amy Rosentel (key), and Andrea Brinola, who won a key and the Dorothy Bruce Barber Award. Teachers at the Junior High School are Mrs. Nancy L. Hontz and Mr. Steve Kaschenbach.



Certificates awarded

Three staff members at Penn State Wilkes-Barre have been awarded certificates of achievement for completing a clerical enrichment course sponsored by the State University Personnel Office. Designed to help clerical personnel achieve greater job production and satisfaction, instructors identified potential work problem areas, emphasized University Policy and Organization, and promoted office training and self-development. Shown at a recent ceremony at the Lehman Campus are, from left, Dr. James H. Ryan, Campus Executive Officer, Penn State Wilkes-Barre; Jane Ashton, Secretary to the Registrar; Judy Stine, Secretary for Continuing Education Department; and Karen Cox, Secretary to the Campus Executive Officer.

(EDITOR'S NOTE: "Common Science" is a science column written by Joe Jeffers, Ph.D. Jeffers received the Ph.D. in molecular biology and biochemistry from Purdue University. He teaches chemistry and biology at Ouachita Baptist University in Arkadelphia, Arkansas. "Common Science" is sponsored by The National Science Foundation and appears periodically in The Dallas Post.)

The story goes something like this. A man decided to murder his business partner by adding small amounts of arsenic to his coffee each morning. He continued this practice for some time, assuming that his partner would gradually become ill and die and, in that way, no one would suspect that he had been poisoned. One day the would-be murderer became quite ill himself and needed a blood transfusion. His partner, having the same blood type, was only too happy to donate blood. Upon receiving the blood transfusion, the man died of arsenic poisoning. This is the stuff of murder mysteries. But it does point up some interesting characteristics of arsenic poisoning. The amount of arsenic required to poison an individual varies widely from person to person. Some persons even develop a tolerance to doses that would kill others. Presumably the partner developed such a tolerance and his blood contained enough arsenic to kill a more susceptible person.

Arsenic, like other poisonous elements, may lead to acute or chronic poisoning. Acute poisoning is the result of a single relatively large dose of poison. The symptoms arise suddenly and the intense effect follows very soon. In the case of arsenic a lethal dose would lead to a collapse of the circulatory system. Chronic poisoning follows repeated exposure to small doses. Symptoms arise gradually and may go almost unnoticed. One becomes increasingly weaker. Depending on the poison, there may be effects on the nervous system, the blood and blood forming tissues, and the digestive tract. Chronic arsenic poisoning results in loss of strength, diarrhea or constipation, nervous confusion, and even cancer.

Which elements are poisons? Generally if the element is abundant on the earth's surface or in the sea, it is not particularly toxic. After all, life has developed with these materials all around. The toxic elements, mostly metals, are only abundant deeper in the earth. Man has found numerous uses for these trace metals and has mined them in large quantities. Living creatures including man have not adapted to contact with substances their bodies have not adapted to. The result is usually chronic poisoning.

Consider the Romans. They had lead pipes for water transport and lead storage vessels for wines. Gradually they were poisoned by lead. Many of their leaders behaved in a crazy fashion. Lead may have

led to the fall of Rome.

We faced a similar problem a few years ago when leaded gasoline was in widespread use. A California study showed that persons living next to freeways had markedly higher levels of lead in their blood than persons living a mile away from the freeway. Children were especially susceptible. Lead poisoning resulted in mental retardation and cerebral palsy. All of the problems did not come from leaded gasoline, however. Older paints contained lead, and small children would eat paint as it flaked off of walls. The cost of caring for those with lead poisoning was several hundred million dollars a year. Today we have unleaded paints and most of the gasoline is unleaded. The problem is still with us, but it will gradually get better.

Along with lead, four other toxic trace metals - cadmium, beryllium, antimony, mercury - are involved in what some experts consider at least half the deaths in the United States.

Heart diseases from hardening of the arteries, hypertension, strokes, diabetes, cirrhosis of the liver and probably emphysema involve trace metals. All of these elements are present in coal and oil. As these fuels are burned the trace metals are put into the air. They come from other sources too. Cadmium is used as an anticorrosive plating on metal parts. Some wastes from this manufacturing process get washed into rivers. It also comes from the smelting of zinc and copper and from acid rain dissolving it out of galvanized roofs. Trace quantities are present in cigarettes. At low levels it causes high blood pressure. At high levels it causes low blood pressure and the kidneys and liver are damaged. It can also lead to the loss of calcium from bones, which make them easier to break.

Mercury is five times as toxic as lead. However, it is not very soluble in water. As methyl mercury it is another fifty times more toxic. At Japan's Minimata Bay a plastics manufacturer dumped methyl mercury into the water. It got into the food chain and led to chronic poisoning of large numbers of people. Many died; others became mentally retarded. Blindness and paralysis were also common.

Antimony is used in glazes. Fortunately exposure levels are low except in certain industries. Miners, foundry workers, typesetters and rubber compounders are at increased risk. Antimony causes heart muscle to weaken and break down. Beryllium, used in the alloy industry, is probably the most toxic of the group. It causes pulmonary granulomatosis, the formation in the lungs of a kind of scar tissue.

There is still so much more to learn about the effects of trace metals. Hopefully, we will not wait until a catastrophe is upon us to learn to control their emission into the environment.



Educators meet

A panel of area elementary, secondary and college educators met with local high school and Penn State University students at a "Careers in Education" workshop held recently at Penn State Wilkes-Barre. Fourth in a series of career exploration programs sponsored by the Center for Individual Development at the Lehman campus, discussion centered on job security, the future of careers in education, and job training. Shown are, from left seated: Patty O'Neill, Penn State Wilkes-Barre Academic Advisor-Counselor; Dr. Fred Stefon, Penn State Wilkes-Barre history professor; Bob Roese, English Department Chairman, Lake-Lehman High School; and Kathleen Reiss, 5th grade teacher, Dallas Area High School. Standing, Penn State University students Chet Koulik, Lisa Brogan, Jacqueline Walton; Gavin Wilson, Lake-Lehman High School Senior; Penn State University students Jeff Watts and Steve Shelley.

Registration scheduled

Gerald J. Wycallis, Superintendent of the Dallas School District, announces Kindergarten Registration for the 1986-87 school year will be held in the Dallas Administrative Office Building, Church Street, Dallas, on March 17, 18, 19 and 20. Hours will be from 9 a.m. to 12 noon and 1 p.m. to 4 p.m., Monday through Thursday. A Birth Certificate or other acceptable evidence of age must accompany each registration. A child must be five years of age on or before September 30, 1986 to make him or her eligible for Kindergarten.

Those with last names beginning with A, B, C, D, E, and F will register on Monday, March 17; those with G, H, I, J, K, and L on Tuesday, March 18; those with M, N, O, P, Q and R on Wednesday, March 19; and those with S, T, U, V, W, X, Y, and Z on Thursday, March 20. The children who will enter First Grade, but did not attend the Kindergarten program this past term, may also register Thursday, March 20.

In addition to the registration, vision, speech and hearing screenings will be given.

The school officials need to review the child's immunizations to be certain the child meets the standards as set by the state regarding immunizations. Parents are to bring all records of their child's immunizations. If the student's records do not meet the standards, he or she will not be able to attend school.



Petroski honored

At the recent meeting of the Pennsylvania Junior Academy of Science, conducted recently at the Dunmore campus of Penn State University, a senior student from Bishop O'Reilly High School, Kingston, won a \$500 scholarship to Wilkes College as a result of her presentation. She is April Petroski, daughter of Stanley and Diane Petroski, of Dallas. Miss Petroski garnered a first-place in the math competition, as well as a Perseverance Award for having attended the Academy's meetings for four years. She will continue on to state competition at Seven Springs in Pittsburgh on April 20-22, accompanied by nine other first place O'Reilly students and their faculty sponsors. April is pictured above between Rev. Michael Piccola, Principal of Bishop O'Reilly and Mrs. Linda Rakauskas, faculty sponsor and coordinator for the O'Reilly entrants.

O'Reilly honor students listed

Rev. Michael Piccola, Principal of Bishop O'Reilly High School, Kingston, has announced the honor roll for the second marking period.

The following students have been named to the list:

DISTINGUISHED HONORS (95 and over): David Rovinsky, senior; Maria Rocgrandi, junior; Lucas Balberchak, sophomore; Kristen Johnson, freshman; Diana Rocgrandi, freshman; Joan Segrevaldy, freshman.

FIRST HONORS (90 to 94): Sandra Brislin, senior; Christine Sarris, senior; Jean Butchko, junior; Julie Ann Hlavac, junior; Jennifer Judge, junior; Doreen Lipinski, junior; Nelson Snyder, junior; Dennis Beck, sophomore; Jennifer Betz, sophomore; Kristin Borofski, sophomore; Erin Mahon, sophomore; Sharon Pizzella, sophomore; Lisa Rasmovicz, sophomore; Angela Rocgrandi, sophomore; John Rokosz, sophomore; Joseph Yerashunas, sophomore; Andrew Balberchak, freshman; Joanne Derwin, freshman; Megan Fisher, freshman; Leane Lipinski, freshman; Paula Pavolonia, freshman; Michael Sabadish, freshman; Michele Vecerkaskas, freshman; Anastasia Wedemeyer, freshman; Morgan Woods, freshman.

SECOND HONORS (85 to 89): Gina Bayo, senior; Michael Beck, senior; Maria Brussock, senior; Michael Hrabovsky, senior; Joan Joyce, senior; Katherine Kormos, senior; Dori Malatino, senior; Andrew Martin, senior; Zoann Nicolo, senior; Mark Noonan, senior; Michael Ostrowski, senior; Diane Parulski, senior; Susan Shaner, senior; Maria Stahovec, senior; Jeanette Stofko, senior; Lisa VanEtten, senior; Amy Wagner, senior; Kathleen Ambruso, junior; Melissa Broden, junior; Kelly Harris, junior; Chris Kalna, junior; Christian Kelley, junior; Michael Kovalick, junior; Marueen Maheady, junior; Noelle Markoch, junior; Colleen Martin, junior; Michele Mattie, junior; Jamie Mazetis, junior; Jessica McCabe, junior; Michele Mizenko, junior; Sonda Novicki, junior; Paul Petonak, junior; Kerrie Wilce, junior; Heather Baker, sophomore; Arlene Casterline, sophomore; Margaret

Hayes, sophomore; Kerry Ann Hlavac, sophomore; Sharon Hudacek, sophomore; Kevin Kile, sophomore; Mark Krajnak, sophomore; Karen Novicki, sophomore; Laura Rolland, sophomore; Nicholas Russo, sophomore; Donna Silinski, sophomore; Annette Sitar, sophomore; Frank Spencer, sophomore; Thomas Templeton, sophomore; Sharon Vacendak, sophomore; Josephine Territo, sophomore; Benedicta Tinner, sophomore; Nancy Yarashas, sophomore; Victor Ambruso, freshman; Adam Bialek, freshman; JoEllen Drapewski, freshman; Edward Dunbar, freshman; Steven Fahey, freshman; Albert Finarelli, freshman; Molly Hayes, freshman; Katherine Jennings, freshman; Maria Johnson, freshman; Jeffrey Leary, freshman; Brian Lorigan, freshman; Lisa Ann Madden, freshman.



Students cited

Nancy H. McGuire, Director of College Guidance at Wyoming Seminary College Preparatory School, Kingston, recently announced that four senior students, who were previously selected Semi-Finalists in the 1986 National Merit Scholarship Competition, have been named as Finalists. The National Merit Scholarship Committee has awarded certificates of merit to Laine Kamp, daughter of Mrs. Mary Kamp, Wilkes-Barre; Kathryn Quick, daughter of Mr. and Mrs. Herbert Quick, Harveys Lake; Sarah Rothschild, daughter of Dr. and Mrs. John Rothschild, Dallas; and Anthony Stallone, son of Dr. and Mrs. James Stallone, Dallas. 13,500 finalists were selected from the more than one million candidates. The selection of the final 5,800 Merit Scholars will be selected from the finalists and announced by the National Merit Scholarship Committee in April and early May. Merit Scholars will be offered financial scholarships for college tuition. Finalists shown are, from left, Anthony Stallone, Laine Kamp, Kathryn Quick and Sarah Rothschild.