

# Common Science

Joe Jeffers, Ph.D.

(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.)

Any substance can be considered poisonous or toxic if used in large enough amounts. Even water in large quantities can cause the kidneys to malfunction and lead to poisoning due to the inability of the body to remove toxic wastes. Usually when one thinks of poisons, substances like strychnine or curare comes to mind. Strychnine has been used in rat poisons and numerous murder mysteries, and curare is used by South American Indians on the poison darts they shoot at game animals.

Would you believe that poisons like these can also be used for beneficial medical purposes? Curare, for example, is a powerful muscle relaxant. If too much curare is injected, death results because the chest muscles are so relaxed that one dies from respiratory failure. Smaller doses, however, can be used during surgery to relax throat muscles during rather lengthy examinations of the throat.

There is a fine line between toxicology, the science of poisons, and pharmacology, the science of useful effects of drugs and chemicals on living systems. For all of these chemicals there are four levels of effects - effect, a helpful effect, a harmful effect, and a lethal effect. It is a question of dose.

Poisons are rated on a scale of 6 (supertoxic, a taste kills) to 1 (practically nontoxic, a quart might kill). Digitoxin, often prescribed for certain heart ailments, is a 6; amphetamines rate a 5 (extremely toxic); and aspirin rates a 4 (very toxic). Yet all of these poisons in proper dosage are taken every day by persons seeking therapeutic relief.

Where did these poisons come from and why have they developed? As a matter of survival many plants, animals and microorganisms produce chemicals that help them get food, defend against predators or discourage competition. For example, snakes and jellyfish inject poisons into their prey to kill them, bees defend their hives against attackers by stinging, and some bacteria produce antibiotics to kill other microorganisms that might compete with them. The alkaloids like curare and strychnine produced by

plants may have developed originally to ward off insect predators. If so, at least some insects have developed a tolerance for the alkaloids and receive no ill effects from feeding on the plants.

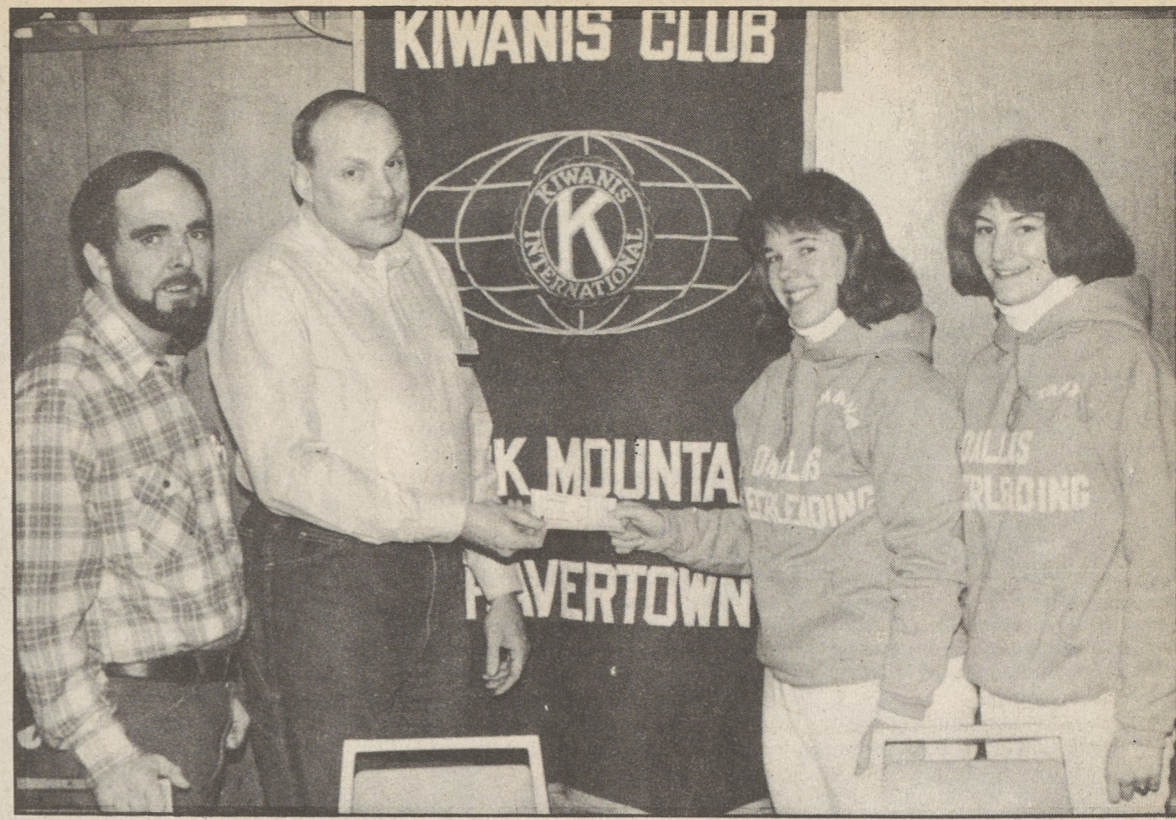
Just to list the highly toxic substances produced by living creatures would require the space of most of this newspaper. A few examples will be given. Probably the most deadly biotoxin of all is botulinus toxin produced by a type of bacteria. It is a form of food poisoning, commonly called botulism, that results from canned foods that were not sterilized properly. Ten millionths of a gram would be enough to kill a 150 pound man. Death results due to paralysis of the respiratory muscles. The first symptoms, nausea and vomiting, occur approximately six hours after ingestion. With early detection antitoxins can be given to neutralize the poison.

Red tide is a name given to heavy blooms of one-celled sea creatures called dinoflagellates. These creatures are eaten by shellfish. Unfortunately, the dinoflagellates produce a highly toxic poison (saxitoxin), which accumulates in the bodies of the shellfish. When the red tides are present, shellfish sales are banned. If man eats shellfish at this time, he risks severe poisoning. A few years ago cases of red tide poisoning were so severe that iron lungs were needed to help persons breath since they had somewhat paralyzed chest muscles.

Some mushrooms are also quite deadly. The death cap mushroom, when eaten, leads to convulsions and a fatality rate for ninety percent. Many Japanese enjoy a specialty fish called the deadly death puffer. If it is skillfully prepared, it makes a delicious meal. If, however, it is not properly prepared, it contains a toxin that leads to numbness of the entire body and paralysis of the muscles. Death follows in sixty percent of these cases.

The sea wasp, a jelly fish found off the coast of northeastern Australia, inflicts a sting that can kill a human adult in less than one minute. Death results due to failure of the circulatory system. The black mamba snake of southwest Africa is one of the world's most dangerous snakes. Its bite may lead to death as a result of respiratory distress. A large black mamba secretes enough venom to kill ten men.

Research scientists all over the world are studying these biotoxins. With luck and a lot of hard work, we may turn more of nature's poisons into medicines that benefit mankind.



## Kiwanis donation

Shown in the above photo are Dallas High School Cheerleaders, Shauna Griffin and Tracy Richardson, accepting a check from Back Mountain Kiwanis Club President, Stuart Oakley. The purpose of the check was to help defray expenses of the Cheerleaders' Contest in Sea World, Florida, on February 22. Also shown at the left is Larry McDonald, Chairman of the Youth Services Committee.

## POLICE BLOTTER

### KINGSTON TOWNSHIP

Icy road conditions caused a Luzerne man to lose control of his car early Sunday morning in Kingston Township.

Kevin P. Sendrick, 37 Linden Street, Luzerne, said he was operating his 1979 Ford van in the south-bound lane of Rt. 309 when the vehicle slid off the road into an embankment. After being helped by passing motorists he continued on when his car again skidded off the road once again. He was not injured.

### DALLAS TOWNSHIP

No injuries were reported in a two-car accident that took place last Wednesday along Rt. 309 in Dallas township.

Police reports said that Christine M. Shorts, RD 1, Box KP 37, Harvey's Lake, attempted to pull out of the parking lot of the Salvation Army onto Main Rd. when she struck a car driven by Joseph Gumbravich, RD 1, Dallas.

Neither person was injured and slight damage was sustained by both cars.

An Ashley woman skidded through a red light in an intersection on Rt. 309 causing a three-car accident last Wednesday.

According to reports, Lynann E. Cipriani, 19 St. Main St., Ashley, was traveling north on Rt. 309 when she failed to see a red light at an intersection. Cipriani said by the

time she did notice the signal it was too late to come to a complete stop and skidded into a car driven by James K. Aikens, RD 5, Box, 39 Elmcrest St. Dallas. Aikens said he was attempting to cross 309 from Center Hill Road and had the green light. The impact caused the Aikens to slam into a third car driven by William H. Milton, 9 Glendalough Road. No one was hurt in the incident.



## Irem Dance set

A Past Potentate's and Past President's Dinner Dance will be held at Irem Temple's Country Club, Saturday evening, March 8. The event is to honor Past Potentate Paul Schramm and Past President of the Uniformed Units, Edward G. Bath, Jr. Festivities will commence at 6 p.m. with a Social Hour, followed by Dinner and Program at 7 p.m. and Dancing from 9 p.m. to 1 a.m., music will be provided by the "Hi-Lites." Reservations may be made by calling Irem Temple's Country Club, 675-1134 or from members of the Uniformed Units. The deadline for reservations is March 6. Members of Irem Temple, their ladies and their guest are invited. Above are members of the committee. Fro, left, William H. Cordy, Co-chairmen, Robert C. Hontz, General Chairman and Edward L. Herbert, Co-Chairmen. Walter E. Schimmelbusch will be Toastmaster.

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## Learning projects

Nursery School students in the Dallas High School Child Development class for juniors and seniors learn how to do a new project from teachers of the day, Sheri Prokopchak and Lisa Williams. Around the table are Laura Yankowski, Rebecca Ann Hadzor, Jerry Appel, Jimmy Appel, Scott Doughton. High school students Sheri Prokopchak and Lisa Williams are at the end of the table assisting the children.

## People

(Continued from page 8)

BER JR., son of Jack M. and Mary D. Kloeber of 244 Ferguson Ave., Shavertown was involved in a NATO-sponsored exercise by participating in the Army's return of forces to Germany (REFORGER) and the Air Force's Crested Cap exercises.

Kloeber is a plans and operations officer with the 6th Field Artillery at Fort Riley, Kans.

He is a 1977 graduate of Lehigh University, Bethlehem, Pa.

AIRMAN JOSEPH W. CICERO IV, son of Mr. and Mrs. Joseph W. Cicero III of 363 Harris Hill Road, Shavertown, has been assigned to Sheppard Air Force Base, Texas, after completing Air Force basic training at Lackland Air Force Base, Texas.

The airman will now receive specialized instruction in the dental field.

He is a 1984 graduate of Dallas Senior High School.

AIRMAN MATTHEW C. PERRY, son of Kathleen A. Perry, 8 Oak Drive, Dallas and Gerald L. Perry of 8317 Adrian Court, Matthews, N.C., has been assigned to Sheppard Air Force Base, Texas after completing Air Force basic training at Lackland Air Force Base, Texas.

The airman will now receive specialized instruction in the wire maintenance field.

His wife, Debbie, is the daughter of Mr. and Mrs. Willard Lansberry, RD 2, Dallas.

The airman is a 1985 graduate of Lake-Lehman High School.

ARMY PRIVATE MARK L. GEBHARDT, son of Dorothy G. Gebhardt of RD 3, Wyoming, has completed basic training at Fort Dix, N.J.

During the training, students received instruction in drill and ceremonies, weapons, map reading, tactics, military courtesy, military justice, first aid, and Army history and traditions.

His wife, Sharon, is the daughter

of Thomas Parry of Edwardsville, Pa.

AIRMAN RONALD E. WATKINS, son of Mr. and Mrs. Ronald L. Watkins of 123 N. Pioneer Ave., Shavertown has been assigned to Sheppard Air Force Base, Texas, after completing Air Force basic training at Lackland Air Force Base, Texas.

The airman will now receive specialized instruction in the aircraft maintenance field.

He received an associate degree in 1983 from Luzerne County Community College.

SUSAN EVANS AND MARIA T. DROBNICKI, two College Misericordia seniors have been selected to the 1985-86 "Who's Who in American Universities and Colleges."

Students are chosen for their academic achievements, service to the community, leadership in extracurricular activities and potential for continued success.

Evans, a nursing major, is senior class treasurer and a member of the Honors program. A graduate of Dallas High School, she is the daughter of Arline Sutton of 6 Poplar St., Dallas, and the granddaughter of Lewis and Arline Williams of 43 Sutton Road, Shavertown.

Drobnicki is a medical technology major who is currently doing her practicum at Divine Providence Hospital, Williamsport. She is a member of the Biology Club and the Pre-Professional Club. Drobnicki, a graduate of Lake-Lehman High School is the daughter of Michael and Barbara Drobnicki of RD 1, Harvey's Lake and the granddaughter of Helen Hudanick of Swoyersville.

K. GARY KIRK, a senior at Bloomsburg University has been elected to Who's Who Among Students in American Universities and Colleges.

Gary is a 1982 graduate of Dallas High School. In high school, Gary was a member of the National

Honor Society and a member of the varsity basketball and baseball teams.

Gary will graduate from Bloomsburg University in May with a degree in Business Administration with a major in Accounting. He is a Dean's List Student, a member of Phi Beta Lambda, a national business fraternity, Phi Sigma Pi, national honor fraternity and is president of the Fellowship of Christian Athletes.

He is the son of Mr. and Mrs. Kenneth Kirk, Dallas.

THREE BACK MOUNTAIN RESIDENTS are among 436 students named to the Dean's List at Kutztown University for outstanding achievement during the fall semester of the 1985-86 academic year. The announcement of the Dean's List was made by Dr. Lawrence M. Stratton, university president.

They are: Lynette A. Ritts, 94 Grandview Ave., Dallas; Laura A. Adams, 223 Lakeside Dr., Harvey's Lake; and Maria Augustine, Wyoming R.D. 3.

MOLLY HUGHES, Huntsville Road, Dallas; and KAREN REABUCK, 40 Westminster Dr., Dallas, have been named to the Dean's List at Bucknell University for outstanding student scholarship during the first semester of the 1985-86 academic year.

The average of a student's grades in all his or her courses each semester must equal 3.5 or higher to be named to the Dean's List.

SEVERAL BACK MOUNTAIN RESIDENTS have been named to the Wilkes-College Dean's List by Dean of Academic Affairs Dr. Gerald D. Hartdagen. Dr. Hartdagen announced that 336 students have achieved Dean's List status for the Fall semester, 1985-86.

Those area residents are: David Garber, Shavertown; and Gail Keen, Harvey's Lake, who were among 29 students who achieved a perfect 4.0 semester average.

Also named to the Dean's List at Wilkes College are:

Donald Albert Benza, Shavertown, accounting major; David Michael Dombek, Dallas, engineering major; Barbara Eyt, Dallas, business administration major; Randa Fahmy, Dallas, political science major; David Andrew Garber, Shavertown, a chemistry major; Susan R. Haley, Shavertown, a nursing major; John Francis Handley, Dallas, a biology major.

Also, Michael Allen Havrilla, Shavertown, undeclared major; Tammi Ann Hons, Dallas, psychology major; Gail Diane Keen, Harvey's Lake, elementary education; Joyce Callahan Krivenko, Dallas, elementary education major; Amber Anne Marszalek Laver, Trucksville, psychology major; Karen B. Natishan, Dallas, communications major.

Also, Martin Joseph Onzik, Dallas, business administration major; Thomas Lamar Peeler IV, Trucksville, psychology major; Mary Ann Rauschmayer, Harvey's Lake, mathematics major; Veronica Repko, Dallas, computer science major; Lisa Anne Sigman, Shavertown, mathematics major; and Michael Yamrick, Shavertown, electrical engineer major.

ARMY PVT. RICHARD C. SISCO, grandson of Dorothy Sisco of 138 Cedar Ave., Shavertown and son of Cathren Kennedy of 68 S. Haveland Ave., Kingston, has arrived for duty with the 77th Armor, Fort Carson, Colo.

Sisco, an armor crew member, was previously assigned at Fort Knox, Ky.

He is a 1985 graduate of West Side Tech, Pringle.

AIRMAN 1ST CLASS JOSEPH TOMASELLI, son of Fred and Yolanda Tomaselli of 107 Hemlock Drive, Dallas has been decorated with the Air Force Achievement Medal in Japan.

The Achievement Medal is awarded to airmen for meritorious service, acts of courage, or other accomplishments.

Tomaselli is an aircraft armament specialist with the 18th Equipment Maintenance Squadron.

He is a 1982 graduate of Lake-Lehman High School, Lehman.

DAVID QUINN THOMAS, son of Richard W. Thomas and Loretta Quinn Thomas, Mesa, AZ, former residents of Shavertown, received his Ph.D. in Secondary Education from Arizona State University, Tempe, AZ.

He graduated from Dallas High School in 1976, graduated from Penn State University in 1980, with a B.S. in Health and Physical Education.

He received a Master of Science degree from Arizona State University in 1982.

He was employed as a graduate teaching assistant and faculty associate at A.S.U. while studying for the Master of Science degree. In 1982, he began studying for a Doctor of Philosophy degree in Secondary Education at Arizona State University.

He was employed as a Research Associate at A.S.U.'s Exercise and Sport Research Institute for the three years he was working on his Ph.D.

He is the grandson of Mrs. Julia Quinn and the late Thomas L. Quinn of Wilkes-Barre and Richard W. Thomas Sr. and the late Agnes Brady Thomas of Wilkes-Barre.

Dr. Thomas is currently teaching at the University of Massachusetts Harbor campus, Boston, Mass.

KIMBERLY A. GRITMAN, of RD 5, Box 99, Dallas, and KIRSTEN M. MARQUART, of 143 S. Pioneer Ave., Trucksville, have both been named to the Dean's List at East Stroudsburg University for the first semester of the 1985-86 academic year, according to Dr. James Kemp, vice president for academic affairs.

Students eligible for the Dean's List are those who have attained a 3.51 quality point average or better.

Mrs. Gritman is a junior Psychology major while Ms. Marquart, a senior, is majoring in Environmental Studies.

returned home from Apopka, Florida, where she was the guest of her son and daughter-in-law, Mr. and Mrs. F.E. Bogart.

While in Florida, she visited her granddaughter, Bonnie Miller, and spent Christmas with another granddaughter, Jo-Ann Lyons and her husband, Dennis. Mrs. Bogart, however, was unable to see her grandson, Greg, and his wife, of Honolulu, Hawaii, but talked to them by phone.

Before returning home, she visited with her daughter, Bev, and son-in-law, John and their family, in Schnecksville, Pa.

MR. AND MRS. MICHAEL F. TERESINSKI, of Pheasant Drive, Larksville, are celebrating their 66th wedding anniversary today.

Congratulations are extended to the Teresinskis from all of the Back Mountain.

WILLIAM B. EVANS, of RD 2, Overbrook Road, Dallas; and DIANE L. SOLINSKY, of RD 7, Church Road, Trucksville, are among area students who have been named to the Dean's List at Clarion University of Pennsylvania for the first semester of the 1985-86 academic year.

Dean's List students must have earned a 3.5 quality point average or higher (on a 4.0 scale) during the semester.

JEREMY ROBERT DOKNOVITCH of 153 E. Ridge St., Nanticoke, was baptised at the Lehman United Methodist Church, Lehman, on Sunday, Jan. 26.

Jeremy was born in the Nesbitt Memorial Hospital on Oct. 14, 1985. His parents are Gale (Armstrong) and Robert Doknovitch.

Sponsors were Ronald, the father's brother, and Carole Mengerhausen, the mother's sister. Officiating cleryperson was Rev. Michael Shambora.

A reception was held afterward at the home of Joan and Ronald Doknovitch, Jeremy's grandparents, who reside at 167 Alden Mountain Road, Alden.