

# Records Broken

(Continued from Page A1)

animals goes directly to the 4-H scholarship fund

Kendra Moore's 120-pound grand champion lamb was purchased by Citizens and Northern Bank for \$2. The 108-pound reserve grand champion lamb topped the sale, however, as it commanded \$3 per pound. Eileen Elliott sold the lamb to the First National Bank of Canton.

As the lamb sale drew to a close, those 13 lambs drew an average price of \$2.20 per pound. The lambs that were donated back to be resold generated over \$1500 for the 4-H scholarship fund.

Market hog prices ranged from a low of \$1.20 to a high of \$3.30 per pound with the average price ringing in at \$1.81.

Annie O'Connor's 216-pound grand champion hog was sold to County Recovery Service for \$2.75 per pound. She was followed by the reserve grand champion market hog which sold to Gardner Trucking for \$2.05 per pound. Joshua Ford raised the 194-pound reserve grand champion.

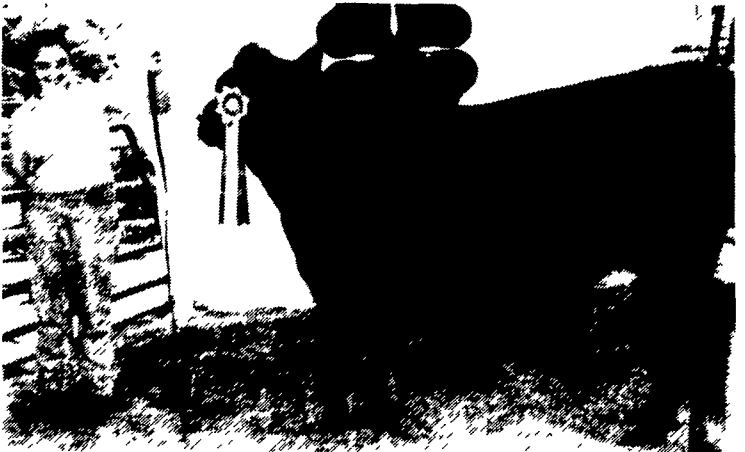
William's Oil closed the bidding for Amanda VanBlarcom's 248-pound hog at \$3.30 per pound, making that the highest selling hog of the sale.



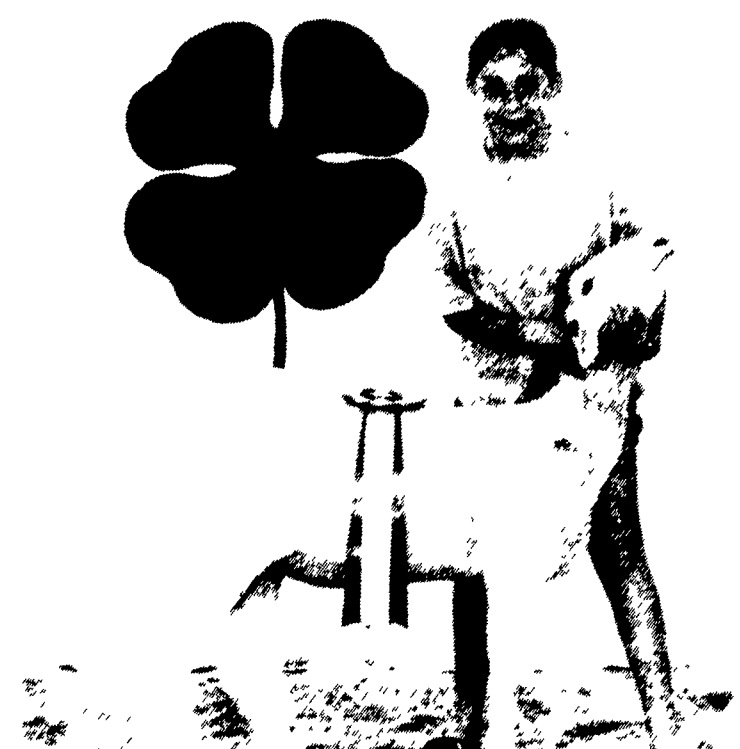
Double Aught Lumber broke all records when they purchased milk from the Supreme Champion at the Troy Fair Milk Auction. Posing for the picture are Bradford County Dairy Princess Talitha Coolbaugh, Ron Cope of Double Aught Lumber and Heather Yurkanin with her supreme champion.



Stephen Laudermilch holds his grand champion steer as the auction begins. Columbia Cross Roads Equipment purchased the 1296-pound champion for \$.70 per pound.



The reserve grand champion steer was shown by Jade Wood.



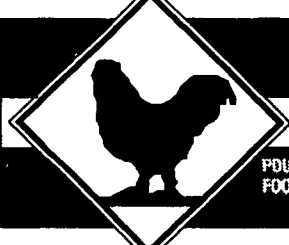
Eileen Elliott showed the reserve champion lamb.



Annie O'Connor exhibited the grand champion market hog at the Troy Fair.



The reserve champion hog was shown by Joshua Ford.



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## Impaired Egg Shell Quality During Hot Weather

Carol V. Gay  
Professor of Poultry Science and Cell Biology

Eggshells of laying hens become noticeably more fragile during hot weather. The main reason for this problem is that a main component of the eggshell, carbonate, is lost during the increased rate of breathing of hens stressed by heat. The problem is even worse when both heat and high humidity occur simultaneously.

From a chemical point of view eggshells are quite simple. They are about 98% calcium carbonate, the same material from which limestone and most seashells are made. Calcium carbonate is simply positively charged calcium

ions and negatively charged carbonate ions, which readily combine when mixed together. In hen, this mixing occurs at the surface of the egg when the egg is in the portion of the oviduct called the shell gland. Calcium is derived from food and bone whereas carbonate comes directly from the breakdown of sugars to their natural endproduct, carbon dioxide (CO<sub>2</sub>). Most CO<sub>2</sub> reaches the shell gland by the blood stream and is readily converted to carbonate.

Birds lack sweat glands and when they become too hot, their only means of cooling down is to pant. This excessive breathing re-

sults in a more rapid loss of CO<sub>2</sub> than usual. Because more CO<sub>2</sub> is breathed out, there is less in the blood stream and consequently less CO<sub>2</sub> is delivered to the shell gland. The effects on eggshell quality are immediate.

Highly productive hens tend to lay early in the day. That means that most of the eggshell forms during the night, over approximately an 8-hour period. Based on what is known about hen physiology, reducing heat stress specifically during the shell forming hours is likely to result in the greatest improvement in shell quality, provided that there is adequate calcium intake.

Good ventilation in chicken houses will help carry away excess body heat of the hens. Recently, I learned from Penn State Agricultural Engineer, Eileen Wheeler, that she has measured a 7-10% improvement in ventilation of poultry houses by simply knocking the dust off the shutters in the ventilation system. Making shutter surfaces clean and smooth would further enhance the effect.

## Extension Director Retires

TOWANDA (Bradford Co.) — Jacob Guffey, Bradford County extension director, has retired from Penn State Cooperative Extension after 40 years of service.

A native of Elizabeth, Allegheny County, Guffey is an expert on dairy farming and operations. He has been deeply involved in such areas as udder health, somatic cell testing, dairy nutrition, stray voltage, and milking management.

He developed countywide programs in mastitis control and nutrition and initiated the pilot project for a statewide somatic cell testing program. In 1984, he was named extension director for

Bradford County, where he supervised all cooperative extension programs.

Guffey has extensive international experience. He worked in Swaziland as a consultant to that country's extension service in 1990. In 1994, he traveled to Szepietowo, Poland to teach and adapt Penn State programs for Polish extension specialists. He also worked with the Citizens Network for Foreign Affairs to establish a viable dairy industry in the Hincesti region of Moldova in 1998.

Guffey earned a bachelor's degree in dairy science in 1955 and a master's degree in dairy manage-

ment in 1957, both from Penn State. He also has continued post-graduate studies and taken courses at Penn State, Cornell University, and Mansfield University of Pennsylvania.

Guffey joined Penn State Cooperative Extension as an assistant county agricultural agent in 1958. He was promoted to associate extension agent in 1963, reached the rank of extension agent in 1975, and became senior extension agent in 1982.

Guffey lives in Towanda with his wife, Marilyn. The couple has two sons, Kenneth and David, and a daughter, Leah. They also have five grandchildren.